UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

☑ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended March 31, 2020
or
☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 001-37963

ATHENE HOLDING LTD.

(Exact name of registrant as specified in its charter)

Bermuda	**98-0630022**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

96 Pitts Bay Road
Pembroke, HM 08, Bermuda
(441) 279-8400

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Class A common shares, par value $0.001 per share	ATH	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a 6.35% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Share, Series A	ATHPrA	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a 5.625% Fixed Rate Perpetual Non-Cumulative Preference Share, Series B	ATHPrB	New York Stock Exchange

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See 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 ☑ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

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. ☐

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

As of April 3, 2020, 194,224,043 of our Class A common shares were outstanding.

TABLE OF CONTENTS

PART I—FINANCIAL INFORMATION

PART II—OTHER INFORMATION

As used in this Quarterly Report on Form 10-Q (report), unless the context otherwise indicates, any reference to "Athene," "our Company," "the Company," "us," "we" and "our" refer to Athene Holding Ltd. together with its consolidated subsidiaries and any reference to "AHL" refers to Athene Holding Ltd. only.

Forward-Looking Statements

Certain statements in this report are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended (Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act). You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "project," "plan," "intend," "seek," "assume," "believe," "may," "will," "should," "could," "would," "likely" and other words and terms of similar meaning, including the negative of these or similar words and terms, in connection with any discussion of the timing or nature of future operating or financial performance or other events. However, not all forward-looking statements contain these identifying words. Forward-looking statements appear in a number of places throughout and give our current expectations and projections relating to our business, financial condition, results of operations, plans, strategies, objectives, future performance and other matters.

We caution you that forward-looking statements are not guarantees of future performance and that our actual consolidated financial condition, results of operations, liquidity, cash flows and performance may differ materially from that made in or suggested by the forward-looking statements contained in this report. A number of important factors could cause actual results or conditions to differ materially from those contained or implied by the forward-looking statements, including the risks discussed in *Part II–Item 1A. Risk Factors* included in this report and *Part I–Item 1A. Risk Factors* included in our Annual Report on Form 10-K for the year ended December 31, 2019 (2019 Annual Report). Factors that could cause actual results or conditions to differ from those reflected in the forward-looking statements contained in this report include:

- the accuracy of management's assumptions and estimates;
- variability in the amount of statutory capital that our insurance and reinsurance subsidiaries have or are required to hold;
- interest rate and/or foreign currency fluctuations;
- our potential need for additional capital in the future and the potential unavailability of such capital to us on favorable terms or at all;
- major public health issues, and specifically the pandemic caused by the effects of the spread of the Coronavirus Disease of 2019 (COVID-19);
- changes in relationships with important parties in our product distribution network;
- the activities of our competitors and our ability to grow our retail business in a highly competitive environment;
- the impact of general economic conditions on our ability to sell our products and on the fair value of our investments;
- our ability to successfully acquire new companies or businesses and/or integrate such acquisitions into our existing framework;
- downgrades, potential downgrades or other negative actions by rating agencies;
- our dependence on key executives and inability to attract qualified personnel, or the potential loss of Bermudian personnel as a result of Bermuda employment restrictions;
- market and credit risks that could diminish the value of our investments;
- changes to the creditworthiness of our reinsurance and derivative counterparties;
- the discontinuation of London Inter-bank Offered Rate (LIBOR);
- changes in consumer perception regarding the desirability of annuities as retirement savings products;
- potential litigation (including class action litigation), enforcement investigations or regulatory scrutiny against us and our subsidiaries, which we may be required to defend against or respond to;
- the impact of new accounting rules or changes to existing accounting rules on our business;
- interruption or other operational failures in telecommunication and information technology and other operating systems, as well as our ability to maintain the security of those systems;
- the termination by Apollo Global Management, Inc. (AGM) or any of its subsidiaries (collectively, AGM together with its subsidiaries, Apollo) of its investment management agreements with us and limitations on our ability to terminate such arrangements;
- Apollo's dependence on key executives and inability to attract qualified personnel;
- the accuracy of our estimates regarding the future performance of our investment portfolio;
- increased regulation or scrutiny of alternative investment advisers and certain trading methods;
- potential changes to regulations affecting, among other things, transactions with our affiliates, the ability of our subsidiaries to make dividend payments or distributions to AHL, acquisitions by or of us, minimum capitalization and statutory reserve requirements for insurance companies and fiduciary obligations on parties who distribute our products;
- the failure to obtain or maintain licenses and/or other regulatory approvals as required for the operation of our insurance subsidiaries;
- increases in our tax liability resulting from the Base Erosion and Anti-Abuse Tax (BEAT);
- improper interpretation or application of Public Law no. 115-97, the Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018 (Tax Act) or subsequent changes to, clarifications of or guidance under the Tax Act that is counter to our interpretation and has retroactive effect;
- AHL or any of its non-United States (U.S.) subsidiaries becoming subject to U.S. federal income taxation;
- adverse changes in U.S. tax law;
- our being subject to U.S. withholding tax under the Foreign Account Tax Compliance Act (FATCA);
- changes in our ability to pay dividends or make distributions;
- our failure to recognize the benefits expected to be derived from the share exchange transaction with Apollo;

- the failure to achieve the economic benefits expected to be derived from the Athene Co-Invest Reinsurance Affiliate 1A Ltd. (together with its subsidiaries, ACRA) capital raise or future ACRA capital raises;
- the failure of third-party ACRA investors to fund their capital commitment obligations; and
- other risks and factors listed in *Part II–Item 1A. Risk Factors* included in this report, *Part I—Item 1A. Risk Factors* included in our 2019 Annual Report and those discussed elsewhere in this report and in our 2019 Annual Report.

We caution you that the important factors referenced above may not be exhaustive. In light of these risks, you should not place undue reliance upon any forward-looking statements contained in this report. Unless an earlier date is specified, the forward-looking statements included in this report are made only as of the date that this report was filed with the U.S. Securities and Exchange Commission (SEC). We undertake no obligation, except as may be required by law, to publicly update or revise any forward-looking statement as a result of new information, future events or otherwise. Comparisons of results for current and any prior periods are not intended to express any future trends, or indications of future performance, unless expressed as such, and should only be viewed as historical data.

GLOSSARY OF SELECTED TERMS

Unless otherwise indicated in this report, the following terms have the meanings set forth below:

Entities

Term or Acronym	Definition
A-A Mortgage	A-A Mortgage Opportunities, L.P.
AAA Investor	AAA Guarantor – Athene, L.P.
AAIA	Athene Annuity and Life Company
AARe	Athene Annuity Re Ltd., a Bermuda reinsurance subsidiary
ACRA	Athene Co-Invest Reinsurance Affiliate 1A Ltd., together with its subsidiaries
ADIP	Apollo/Athene Dedicated Investment Program
AGM	Apollo Global Management, Inc.
AHL	Athene Holding Ltd.
ALRe	Athene Life Re Ltd., a Bermuda reinsurance subsidiary
ALReI	Athene Life Re International Ltd., a Bermuda reinsurance subsidiary
AmeriHome	AmeriHome Mortgage Company, LLC
AOG	Apollo Operating Group
Apollo	Apollo Global Management, Inc., together with its subsidiaries
Apollo Group	(1) Apollo, (2) the AAA Investor, (3) any investment fund or other collective investment vehicle whose general partner or managing member is owned, directly or indirectly, by Apollo or one or more of Apollo's subsidiaries, (4) BRH Holdings GP, Ltd. and its shareholders, (5) any executive officer or employee of AGM or its subsidiaries (6) any shareholder that has granted to AGM or any of its affiliates a valid proxy with respect to all of such shareholder's Class A common shares pursuant to our bye-laws and (7) any affiliate of any of the foregoing (except that AHL or its subsidiaries are not members of the Apollo Group)
Athene USA	Athene USA Corporation
Athora	Athora Holding Ltd.
BMA	Bermuda Monetary Authority
CoInvest VI	AAA Investments (Co-Invest VI), L.P.
CoInvest VII	AAA Investments (Co-Invest VII), L.P.
ISG	Apollo Insurance Solutions Group LP, formerly known as Athene Asset Management LLC
LIMRA	Life Insurance and Market Research Association
MidCap	MidCap FinCo Designated Activity Company
NAIC	National Association of Insurance Commissioners
NYSDFS	New York State Department of Financial Services
RLI	ReliaStar Life Insurance Company
Treasury	United States Department of the Treasury
Voya	Voya Financial, Inc.
VIAC	Venerable Insurance and Annuity Company, formerly Voya Insurance and Annuity Company
Venerable	Venerable Holdings, Inc., together with its subsidiaries

Certain Terms & Acronyms

Term or Acronym	Definition
ABS	Asset-backed securities
ACL	Authorized control level RBC as defined by the model created by the National Association of Insurance Commissioners
ALM	Asset liability management
ALRe RBC	The risk-based capital ratio of ALRe, when applying the NAIC risk-based capital factors.
Alternative investments	Alternative investments, including investment funds, CLO equity positions and certain other debt instruments considered to be equity-like
Base of earnings	Earnings generated from our results of operations and the underlying profitability drivers of our business
Bermuda capital	The capital of ALRe calculated under U.S. statutory accounting principles, including that for policyholder reserve liabilities which are subjected to U.S. cash flow testing requirements, but excluding certain items that do not exist under our applicable Bermuda requirements, such as interest maintenance reserves
Block reinsurance	A transaction in which the ceding company cedes all or a portion of a block of previously issued annuity contracts through a reinsurance agreement
BSCR	Bermuda Solvency Capital Requirement
CAL	Company action level risk-based capital as defined by the model created by the National Association of Insurance Commissioners
CLO	Collateralized loan obligation
CMBS	Commercial mortgage-backed securities
CML	Commercial mortgage loans
Cost of crediting	The interest credited to the policyholders on our fixed annuities, including, with respect to our fixed indexed annuities, option costs, as well as institutional costs related to institutional products, presented on an annualized basis for interim periods
Cost of funds	Cost of funds includes liability costs related to cost of crediting on both deferred annuities and institutional products, as well as other liability costs. Cost of funds is computed as the total liability costs divided by the average net invested assets for the relevant period. Presented on an annualized basis for interim periods.
DAC	Deferred acquisition costs
Deferred annuities	Fixed indexed annuities, annual reset annuities, multi-year guaranteed annuities and registered index-linked annuities
DSI	Deferred sales inducement
Excess capital	Capital in excess of the level management believes is needed to support our current operating strategy
FIA	Fixed indexed annuity, which is an insurance contract that earns interest at a crediting rate based on a specified index on a tax-deferred basis
Fixed annuities	FIAs together with fixed rate annuities
Fixed rate annuity	An insurance contract that offers tax-deferred growth and the opportunity to produce a guaranteed stream of retirement income for the lifetime of its policyholder
Flow reinsurance	A transaction in which the ceding company cedes a portion of newly issued policies to the reinsurer
GAAP	Accounting principles generally accepted in the United States of America
GLWB	Guaranteed lifetime withdrawal benefit
GMDB	Guaranteed minimum death benefit
Gross invested assets	The sum of (a) total investments on the consolidated balance sheet with available-for-sale securities at amortized cost, excluding derivatives, (b) cash and cash equivalents and restricted cash, (c) investments in related parties, (d) accrued investment income, (e) consolidated variable interest entities' assets, liabilities and noncontrolling interest and (f) policy loans ceded (which offset the direct policy loans in total investments). Gross invested assets includes investments supporting assumed funds withheld and modco agreements and excludes assets associated with funds withheld liabilities related to business exited through reinsurance agreements and derivative collateral (offsetting the related cash positions). Gross invested assets includes the entire investment balance attributable to ACRA as ACRA is 100% consolidated
IMA	Investment management agreement
IMO	Independent marketing organization
Investment margin on deferred annuities	Investment margin applies to deferred annuities and is the excess of our net investment earned rate over the cost of crediting to our policyholders, presented on an annualized basis for interim periods
Liability outflows	The aggregate of withdrawals on our deferred annuities, maturities of our funding agreements, payments on payout annuities, and pension risk benefit payments
MMS	Minimum margin of solvency

Term or Acronym	Definition
Modco	Modified coinsurance
MVA	Market value adjustment
MYGA	Multi-year guaranteed annuity
Net invested assets	The sum of (a) total investments on the consolidated balance sheet with available-for-sale securities at amortized cost, excluding derivatives, (b) cash and cash equivalents and restricted cash, (c) investments in related parties, (d) accrued investment income, (e) consolidated variable interest entities' assets, liabilities and noncontrolling interest and (f) policy loans ceded (which offset the direct policy loans in total investments). Net invested assets includes investments supporting assumed funds withheld and modco agreements and excludes assets associated with funds withheld liabilities related to business exited through reinsurance agreements and derivative collateral (offsetting the related cash positions). Net invested assets includes our economic ownership of ACRA investments but does not include the investments associated with the noncontrolling interest
Net investment earned rate	Income from our net invested assets divided by the average net invested assets for the relevant period, presented on an annualized basis for interim periods
Net investment spread	Net investment spread measures our investment performance less the total cost of our liabilities, presented on an annualized basis for interim periods
Net reserve liabilities	The sum of (a) interest sensitive contract liabilities, (b) future policy benefits, (c) dividends payable to policyholders, and (d) other policy claims and benefits, offset by reinsurance recoverable, excluding policy loans ceded. Net reserve liabilities also includes the reserves related to assumed modco agreements in order to appropriately match the costs incurred in the consolidated statements of income with the liabilities. Net reserve liabilities is net of the ceded liabilities to third-party reinsurers as the costs of the liabilities are passed to such reinsurers and therefore we have no net economic exposure to such liabilities, assuming our reinsurance counterparties perform under our agreements. Net reserve liabilities is net of the reserve liabilities attributable to the ACRA noncontrolling interest
Other liability costs	Other liability costs include DAC, DSI and VOBA amortization, change in rider reserves, the cost of liabilities on products other than deferred annuities and institutional products, excise taxes, as well as offsets for premiums, product charges and other revenues
OTTI	Other-than-temporary impairment
Payout annuities	Annuities with a current cash payment component, which consist primarily of single premium immediate annuities, supplemental contracts and structured settlements
Policy loan	A loan to a policyholder under the terms of, and which is secured by, a policyholder's policy
PRT	Pension risk transfer
RBC	Risk-based capital
Rider reserves	Guaranteed lifetime withdrawal benefits and guaranteed minimum death benefits reserves
RMBS	Residential mortgage-backed securities
RML	Residential mortgage loan
Sales	All money paid into an individual annuity, including money paid into new contracts with initial purchase occurring in the specified period and existing contracts with initial purchase occurring prior to the specified period (excluding internal transfers)
SPIA	Single premium immediate annuity
Surplus assets	Assets in excess of policyholder obligations, determined in accordance with the applicable domiciliary jurisdiction's statutory accounting principles
TAC	Total adjusted capital as defined by the model created by the NAIC
U.S. RBC Ratio	The CAL RBC ratio for AADE, our parent U.S. insurance company
VIE	Variable interest entity
VOBA	Value of business acquired

Item 1. Financial Statements

Index to Condensed Consolidated Financial Statements (unaudited)

Table of Contents

ATHENE HOLDING LTD.
Condensed Consolidated Balance Sheets *(Unaudited)*

(In millions)	March 31, 2020	December 31, 2019
Assets		
Investments		
Available-for-sale securities, at fair value (amortized cost: 2020 – $67,576 and 2019 – $67,479; allowance for credit losses: 2020 – $78)	$ 65,671	$ 71,374
Trading securities, at fair value (consolidated variable interest entities: 2020 – $14 and 2019 – $16)	1,979	2,070
Equity securities, at fair value	206	247
Mortgage loans (allowance for credit losses: 2020 – $394 and 2019 – $11; portion at fair value: 2020 – $26 and 2019 – $27)	14,395	14,306
Investment funds (portion at fair value: 2020 – $157 and 2019 – $154; consolidated variable interest entities: 2020 – $20 and 2019 – $19)	740	750
Policy loans	403	417
Funds withheld at interest (portion at fair value: 2020 – $(374) and 2019 – $801)	13,716	15,181
Derivative assets	1,610	2,888
Short-term investments (portion at fair value: 2020 – $393 and 2019 – $406)	583	596
Other investments (portion at fair value: 2020 – $98 and 2019 – $93)	172	158
Total investments	99,475	107,987
Cash and cash equivalents (consolidated variable interest entities: 2020 – $0 and 2019 – $3)	5,419	4,240
Restricted cash	564	402
Investments in related parties		
Available-for-sale securities, at fair value (amortized cost: 2020 – $4,004 and 2019 – $3,783)	3,546	3,804
Trading securities, at fair value	718	785
Equity securities, at fair value (consolidated variable interest entities: 2020 – $0 and 2019 – $6)	49	64
Mortgage loans (allowance for credit losses: 2020 – $30 and 2019 – $0)	623	653
Investment funds (portion at fair value: 2020 – $1,097 and 2019 – $819; consolidated variable interest entities: 2020 – $0 and 2019 – $664)	4,631	3,550
Funds withheld at interest (portion at fair value: 2020 – $(15) and 2019 – $594)	12,452	13,220
Other investments (allowance for credit losses: 2020 – $12)	475	487
Accrued investment income (related party: 2020 – $43 and 2019 – $27)	802	807
Reinsurance recoverable (portion at fair value: 2020 – $2,115 and 2019 – $1,821)	5,087	4,863
Deferred acquisition costs, deferred sales inducements and value of business acquired	6,392	5,008
Other assets (related party: 2020 – $361 and 2019 – $0; consolidated variable interest entities: 2020 – $19 and 2019 – $20)	1,946	1,005
Total assets	$ 142,179	$ 146,875

(Continued)

See accompanying notes to the unaudited condensed consolidated financial statements

ATHENE HOLDING LTD.
Condensed Consolidated Balance Sheets *(Unaudited)*

(In millions, except per share data)	March 31, 2020	December 31, 2019
Liabilities and Equity		
Liabilities		
Interest sensitive contract liabilities (related party: 2020 – $14,706 and 2019 – $15,285; portion at fair value: 2020 – $10,411 and 2019 – $11,992)	$ 101,911	$ 102,745
Future policy benefits (related party: 2020 – $1,313 and 2019 – $1,302; portion at fair value: 2020 – $2,259 and 2019 – $2,301)	23,741	23,330
Other policy claims and benefits (related party: 2020 – $18 and 2019 – $13)	145	138
Dividends payable to policyholders	112	113
Short-term debt	400	475
Long-term debt	986	992
Derivative liabilities	222	97
Payables for collateral on derivatives and securities to repurchase	2,883	3,255
Funds withheld liability (portion at fair value: 2020 – $24 and 2019 – $31)	396	408
Other liabilities (related party: 2020 – $61 and 2019 – $79)	853	1,181
Total liabilities	131,649	132,734
Commitments and Contingencies (Note 10)		
Equity		
Preferred stock		
Series A – par value $1 per share; $863 aggregate liquidation preference; authorized, issued and outstanding: 2020 and 2019 – 0.0 shares	—	—
Series B – par value $1 per share; $345 aggregate liquidation preference; authorized, issued and outstanding: 2020 and 2019 – 0.0 shares	—	—
Common stock		
Class A – par value $0.001 per share; authorized: 2020 and 2019 – 425.0 shares; issued and outstanding: 2020 – 194.3 and 2019 – 143.2 shares	—	—
Class B – par value $0.001 per share; convertible to Class A; authorized: 2020 – 0.0 and 2019 – 325.0 shares; issued and outstanding: 2020 – 0.0 and 2019 – 25.4 shares	—	—
Class M-1 – par value $0.001 per share; convertible to Class A; authorized: 2020 – 0.0 and 2019 – 7.1 shares; issued and outstanding: 2020 – 0.0 and 2019 – 3.3 shares	—	—
Class M-2 – par value $0.001 per share; convertible to Class A; authorized: 2020 – 0.0 and 2019 – 5.0 shares; issued and outstanding: 2020 – 0.0 and 2019 – 0.8 shares	—	—
Class M-3 – par value $0.001 per share; convertible to Class A; authorized: 2020 – 0.0 and 2019 – 7.5 shares; issued and outstanding: 2020 – 0.0 and 2019 – 1.0 shares	—	—
Class M-4 – par value $0.001 per share; convertible to Class A; authorized: 2020 – 0.0 and 2019 – 7.5 shares; issued and outstanding: 2020 – 0.0 and 2019 – 4.0 shares	—	—
Additional paid-in capital	5,501	4,171
Retained earnings	5,613	6,939
Accumulated other comprehensive income (loss) (related party: 2020 – $(457) and 2019 – $17)	(1,174)	2,281
Total Athene Holding Ltd. shareholders’ equity	9,940	13,391
Noncontrolling interests	590	750
Total equity	10,530	14,141
Total liabilities and equity	$ 142,179	$ 146,875

(Concluded)

See accompanying notes to the unaudited condensed consolidated financial statements

ATHENE HOLDING LTD.
Condensed Consolidated Statements of Income (Loss) *(Unaudited)*

	Three months ended March 31,	
(In millions, except per share data)	2020	2019
Revenues		
Premiums (related party: 2020 – $69 and 2019 – $66)	$ 1,140	$ 2,000
Product charges (related party: 2020 – $16 and 2019 – $14)	140	125
Net investment income (related party investment income: 2020 – $(214) and 2019 – $199; consolidated variable interest entities: 2020 – $0 and 2019 – $16; and related party investment expense: 2020 – $128 and 2019 – $92)	745	1,082
Investment related gains (losses) (related party: 2020 – $(631) and 2019 – $321; and consolidated variable interest entities: 2020 – $1 and 2019 – $5)	(3,572)	1,776
Other revenues	(2)	12
Total revenues	(1,549)	4,995
Benefits and expenses		
Interest sensitive contract benefits (related party: 2020 – $(97) and 2019 – $183)	(1,319)	1,516
Amortization of deferred sales inducements	10	5
Future policy and other policy benefits (related party: 2020 – $50 and 2019 – $106)	1,356	2,329
Amortization of deferred acquisition costs and value of business acquired	(413)	231
Dividends to policyholders	11	9
Policy and other operating expenses (related party: 2020 – $16 and 2019 – $8)	188	165
Total benefits and expenses	(167)	4,255
Income (loss) before income taxes	(1,382)	740
Income tax expense (benefit)	(166)	32
Net income (loss)	(1,216)	708
Less: Net loss attributable to noncontrolling interests	(169)	—
Net income (loss) attributable to Athene Holding Ltd. shareholders	(1,047)	708
Less: Preferred stock dividends	18	—
Net income (loss) available to Athene Holding Ltd. common shareholders	$ (1,065)	$ 708
Earnings per share		
Basic – Class A	$ (5.81)	$ 3.65
Basic – Classes B, M-1, M-2, M-3 and M-4	(3.87)	3.65
Diluted – Class A	(5.81)	3.64
Diluted – Class B	(3.87)	3.65
Diluted – Class M-1	(3.87)	3.65
Diluted – Class M-2	(3.87)	3.65
Diluted – Class M-3	(3.87)	3.65
Diluted – Class M-4	(3.87)	3.15

See accompanying notes to the unaudited condensed consolidated financial statements

ATHENE HOLDING LTD.
Condensed Consolidated Statements of Comprehensive Income (Loss) *(Unaudited)*

	Three months ended March 31,	
(In millions)	2020	2019
Net income (loss)	$ (1,216)	$ 708
Other comprehensive income (loss), before tax		
Unrealized investment gains (losses) on available-for-sale securities, net of offsets	(4,839)	1,477
Unrealized gains (losses) on hedging instruments	401	(8)
Foreign currency translation and other adjustments	9	—
Other comprehensive income (loss), before tax	(4,429)	1,469
Income tax expense (benefit) related to other comprehensive income (loss)	(797)	291
Other comprehensive income (loss)	(3,632)	1,178
Comprehensive income (loss)	(4,848)	1,886
Less: Comprehensive loss attributable to noncontrolling interests	(352)	—
Comprehensive income (loss) attributable to Athene Holding Ltd. shareholders	$ (4,496)	$ 1,886

See accompanying notes to the unaudited condensed consolidated financial statements

ATHENE HOLDING LTD.
Condensed Consolidated Statements of Equity *(Unaudited)*

	Three months ended							
(In millions)	Preferred stock	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Total Athene Holding Ltd. shareholders' equity	Noncontrolling interests	Total shareholders' equity
Balance at December 31, 2018	$ —	$ —	$ 3,462	$ 5,286	$ (472)	$ 8,276	$ —	$ 8,276
Net income	—	—	—	708	—	708	—	708
Other comprehensive income	—	—	—	—	1,178	1,178	—	1,178
Issuance of common shares, net of expenses	—	—	1	—	—	1	—	1
Stock-based compensation	—	—	5	—	—	5	—	5
Retirement or repurchase of shares	—	—	(20)	(31)	—	(51)	—	(51)
Balance at March 31, 2019	$ —	$ —	$ 3,448	$ 5,963	$ 706	$ 10,117	$ —	$ 10,117
Balance at December 31, 2019	$ —	$ —	$ 4,171	$ 6,939	$ 2,281	$ 13,391	$ 750	$ 14,141
Adoption of accounting standard	—	—	—	(117)	(6)	(123)	(2)	(125)
Net loss	—	—	—	(1,047)	—	(1,047)	(169)	(1,216)
Other comprehensive loss	—	—	—	—	(3,449)	(3,449)	(183)	(3,632)
Issuance of common shares, net of expenses	—	—	1,509	—	—	1,509	—	1,509
Stock-based compensation	—	—	5	—	—	5	—	5
Retirement or repurchase of shares	—	—	(184)	(144)		(328)		(328)
Preferred stock dividends	—	—	—	(18)	—	(18)	—	(18)
Contributions from noncontrolling interests	—	—	—	—	—	—	240	240
Distributions to noncontrolling interests	—	—	—	—	—	—	(46)	(46)
Balance at March 31, 2020	$ —	$ —	$ 5,501	$ 5,613	$ (1,174)	$ 9,940	$ 590	$ 10,530

See accompanying notes to the unaudited condensed consolidated financial statements

Table of Contents

ATHENE HOLDING LTD.
Condensed Consolidated Statements of Cash Flows *(Unaudited)*

	Three months ended March 31,	
(In millions)	2020	2019
Cash flows from operating activities		
Net income (loss)	$ (1,216)	$ 708
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Amortization of deferred acquisition costs and value of business acquired	(413)	231
Amortization of deferred sales inducements	10	5
Accretion of net investment premiums, discounts and other	(62)	(33)
Net investment (income) loss (related party: 2020 – $362 and 2019 – $18)	343	25
Net recognized (gains) losses on investments and derivatives (related party: 2020 – $158 and 2019 – $(5); consolidated variable interest entities: 2020 – $0 and 2019 – $(6))	2,144	(950)
Policy acquisition costs deferred	(112)	(173)
Changes in operating assets and liabilities:		
Accrued investment income (related party: 2020 – $(16) and 2019 – $3)	5	(69)
Interest sensitive contract liabilities (related party: 2020 – $(81) and 2019 – $167)	(1,282)	1,403
Future policy benefits, other policy claims and benefits, dividends payable to policyholders and reinsurance recoverable (related party: 2020 – $59 and 2019 – $95)	186	653
Funds withheld assets and liabilities (related party: 2020 – $422 and 2019 – $(500))	1,426	(1,011)
Other assets and liabilities	(258)	220
Net cash provided by operating activities	771	1,009
Cash flows from investing activities		
Sales, maturities and repayments of:		
Available-for-sale securities (related party: 2020 – $205 and 2019 – $50; consolidated variable interest entities: 2020 – $3 and 2019 – $0)	4,541	2,231
Trading securities (related party: 2020 – $17 and 2019 – $1; consolidated variable interest entities: 2020 – $0 and 2019 – $1)	48	32
Equity securities (related party: 2020 – $2 and 2019 – $50; consolidated variable interest entities: 2020 – $0 and 2019 – $50)	2	60
Mortgage loans	898	354
Investment funds (related party: 2020 – $65 and 2019 – $87; consolidated variable interest entities: 2020 – $0 and 2019 – $2)	111	133
Derivative instruments and other invested assets	475	256
Short-term investments	139	104
Purchases of:		
Available-for-sale securities (related party: 2020 – $(425) and 2019 – $(280))	(4,226)	(4,470)
Trading securities (related party: 2020 – $(77) and 2019 – $(3))	(77)	(284)
Equity securities (related party: 2020 – $(3) and 2019 – $(177))	(3)	(205)
Mortgage loans	(1,365)	(1,049)
Investment funds (related party: 2020 – $(358) and 2019 – $(152))	(375)	(185)
Derivative instruments and other invested assets	(305)	(287)
Short-term investments	(125)	(67)
Deconsolidation of previously consolidated variable interest entities	(3)	—
Other investing activities, net	(113)	601
Net cash used in investing activities	(378)	(2,776)

(Continued)

See accompanying notes to the unaudited condensed consolidated financial statements

ATHENE HOLDING LTD.
Condensed Consolidated Statements of Cash Flows *(Unaudited)*

(In millions)	Three months ended March 31, 2020	2019
Cash flows from financing activities		
Issuance of common stock	$ 350	$ —
Repayment of short-term debt	(75)	—
Deposits on investment-type policies and contracts (related party: 2020 – $18 and 2019 – $101)	2,838	2,793
Withdrawals on investment-type policies and contracts (related party: 2020 – $(135) and 2019 – $(106))	(1,633)	(1,638)
Payments for coinsurance agreements on investment-type contracts, net	(6)	(25)
Capital contributions from noncontrolling interests	240	—
Capital distributions to noncontrolling interests	(46)	—
Net change in cash collateral posted for derivative transactions and securities to repurchase	(372)	812
Preferred stock dividends	(18)	—
Repurchase of common stock	(328)	(51)
Other financing activities, net	20	(9)
Net cash provided by financing activities	970	1,882
Effect of exchange rate changes on cash and cash equivalents	(22)	—
Net increase in cash and cash equivalents	1,341	115
Cash and cash equivalents at beginning of year[1]	4,642	3,405
Cash and cash equivalents at end of period[1]	$ 5,983	$ 3,520
Supplementary information		
Non-cash transactions		
Deposits on investment-type policies and contracts through reinsurance agreements (related party: 2020 – $72 and 2019 – $45)	$ 131	$ 208
Withdrawals on investment-type policies and contracts through reinsurance agreements (related party: 2020 – $418 and 2019 – $429)	923	888
Investments received from settlements on reinsurance agreements	—	12
Investments received from pension risk transfer premiums	627	1,363
Related party investments received in exchange for the issuance of Class A common shares	1,147	—

[1] *Includes cash and cash equivalents and restricted cash.*

(Concluded)

See accompanying notes to the unaudited condensed consolidated financial statements

1. Business, Basis of Presentation and Significant Accounting Policies

Athene Holding Ltd. (AHL), a Bermuda exempted company, together with its subsidiaries (collectively, Athene, we, our, us, or the Company), is a leading retirement services company that issues, reinsures and acquires retirement savings products in all United States (U.S.) states and the District of Columbia, and the United Kingdom (UK).

We conduct business primarily through the following consolidated subsidiaries:

- Our non-U.S. reinsurance subsidiaries, to which AHL's other insurance subsidiaries and third-party ceding companies directly and indirectly reinsure a portion of their liabilities, including Athene Life Re Ltd. (ALRe), a Bermuda exempted company, and Athene Life Re International Ltd. (ALReI); and
- Athene USA Corporation, an Iowa corporation (together with its subsidiaries, Athene USA).

In addition, we consolidate certain variable interest entities (VIEs), for which we determined we are the primary beneficiary.

Consolidation and Basis of Presentation—We have prepared the accompanying condensed consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (GAAP) for interim financial information and the United States Securities and Exchange Commission's rules and regulations for Form 10-Q and Article 10 of Regulation S-X. The accompanying condensed consolidated financial statements are unaudited and reflect all adjustments, consisting only of normal recurring items, considered necessary for fair statement of the results for the interim periods presented. All significant intercompany accounts and transactions have been eliminated. Interim operating results are not necessarily indicative of the results expected for the entire year, particularly in light of the material risks and uncertainties surrounding the spread of the Coronavirus Disease of 2019 (COVID-19), which has resulted in significant volatility in the financial markets.

The condensed consolidated balance sheet as of December 31, 2019 has been derived from the audited financial statements, but does not include all of the information and footnotes required by GAAP for complete financial statements. Therefore, these condensed consolidated financial statements should be read in conjunction with our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2019. The preparation of financial statements requires the use of management estimates. Our estimates may vary as more information about the extent to which COVID-19 and the resulting impact on economic conditions and the financial markets become known. Actual results may differ from estimates used in preparing the condensed consolidated financial statements.

VIE Deconsolidation – During the first quarter 2020, as a result of the Apollo Global Management, Inc. (AGM and, together with its subsidiaries, Apollo) share transaction discussed further in *Note 9 – Related Parties*, we reassessed the consolidation conclusions for the following VIEs which are managed by Apollo affiliates:

- AAA Investments (Co-Invest VI), L.P. (CoInvest VI);
- AAA Investments (Co-Invest VII), L.P. (CoInvest VII);
- AAA Investments (Other), L.P. (CoInvest Other);
- Entities included under our agreement to purchase funds managed by Apollo entities (Strategic Partnership).

Following the share transaction we determined that we are no longer the primary beneficiary of these entities, as a result of Apollo receiving significant economics of these entities through their increased economic ownership in the Company. We did not recognize a gain or loss upon deconsolidation, as the deconsolidated VIEs accounted for their assets and liabilities at fair value. As of March 31, 2020, the deconsolidated VIEs are included at net asset value (NAV) in related party investment funds on the condensed consolidated balance sheets.

Summary of Significant Accounting Policies

The following accounting policies have been updated for the adoption of Accounting Standards Update (ASU) 2016-13 and related ASUs, and apply for reporting periods beginning January 1, 2020.

Investments

Purchased Credit Deteriorated (PCD) Investments – We purchase certain structured securities, primarily residential mortgage backed securities (RMBS), and re-performing mortgage loans having experienced a more-than-insignificant deterioration in credit quality since their origination which upon our assessment have been determined to meet the definition of PCD investments. Additionally, structured securities classified as beneficial interests follow the initial measurement guidance for PCD investments if there is a significant difference between contractual cash flows adjusted for expected prepayments and expected cash flows at the date of recognition. The initial allowance for credit losses for PCD investments is recorded through a gross-up adjustment to the initial amortized cost. For mortgage loans, the initial allowance is determined using the methodology described in the *Credit Losses – Assets Held at Amortized Cost and Off-Balance Sheet Credit Exposures* section. For structured securities classified as beneficial interests, the initial allowance is calculated as the present value of the difference between contractual cash flows adjusted for expected prepayments and expected cash flows at the date of recognition. The non-credit purchase discount or premium is amortized into investment income using the effective interest method. The credit discount, represented by the allowance for expected credit losses, is remeasured each period following the policies for measuring credit losses described in the *Credit Losses – Assets Held at Amortized Cost and Off-Balance Sheet Credit Exposures* and *Credit Losses – Available-for-Sale Securities* sections below.

Credit Losses – Assets Held at Amortized Cost and Off-Balance Sheet Credit Exposures – We establish an allowance for expected credit losses at the time of purchase for assets held at amortized cost, which primarily includes our residential and commercial mortgage loan portfolios, but also includes certain other loans and reinsurance assets. The allowance for expected credit losses represents the portion of the asset's amortized cost basis that we do not expect to collect due to credit losses over the asset's contractual life, considering past events, current conditions, and reasonable and supportable forecasts of future economic conditions or macroeconomic forecasts. We use a quantitative probability of default and loss given default methodology to develop our estimate of expected credit loss. We develop the estimate on a collective basis factoring in the risk characteristics of the assets in the portfolio. If an asset does not share similar risk characteristics with other assets, the asset is individually assessed.

Allowance estimates are highly dependent on expectations of future economic conditions and macroeconomic forecasts, which involve significant judgment and subjectivity. We use quantitative modeling to develop the allowance for expected credit losses. Key inputs into the model include data pertaining to the characteristics of the assets, historical losses and current market conditions. Additionally, the model incorporates management’s expectations around future economic conditions and macroeconomic forecasts over a reasonable and supportable forecast period, after which the model reverts to historical averages. These inputs, the reasonable and supportable forecast period, and reversion to historical average technique are subject to a formal governance and review process by management. Additionally, management considers qualitative adjustments to the model output to the extent that any relevant information regarding the collectability of the asset is available and not already considered in the quantitative model. If we determine that a financial asset has become collateral dependent, which we determine to be when foreclosure is probable, the allowance is measured as the difference between amortized cost and the fair value of the collateral, less any expected costs to sell.

The initial allowance for invested assets held at amortized cost other than for PCD investments, and subsequent changes in the allowance including PCD investments, are recorded through a charge to credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss). Credit loss expense for reinsurance assets held at amortized cost is recorded through policy and other operating expenses on the condensed consolidated statements of income (loss).

We limit accrued interest income on loans to 90 days of interest. Once a loan becomes 90 days past due, the loan is put on non-accrual status and any accrued interest is written off. Once a loan is on non-accrual status, we first apply any payments received to the principal of the loan, and once the principal is repaid, we include amounts received in net investment income. We have elected to present accrued interest receivable separately in accrued investment income on the condensed consolidated balance sheets. We have also elected the practical expedient to exclude the accrued interest receivable from the amortized cost balance used to calculate the allowance given our policy to write off such balances in a timely manner. Any write-off of accrued interest is recorded through a reversal of net investment income on the condensed consolidated statements of income (loss).

Upon determining that all or a portion of the amortized cost of an asset is uncollectible, which is generally when all efforts for collection are exhausted, the amortized cost is written off against the existing allowance. Any write off in excess of the existing allowance is recorded through credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss).

We also have certain off-balance sheet credit exposures for which we establish a liability for expected future credit losses. These exposures primarily relate to commitments to fund commercial or residential mortgage loans that are not unconditionally cancelable. The methodology for estimating the liability for these credit exposures is consistent with that described above, with the additional consideration pertaining to the probability of funding. At the time the commitment expires or is funded, the liability is reversed and an allowance for expected credit losses is established, as applicable. The liability for off-balance sheet credit exposures is included in other liabilities on the condensed consolidated balance sheets. The establishment of the initial liability and all subsequent changes are recorded through credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss).

Credit Losses – Available-for-Sale Securities – We evaluate available-for-sale (AFS) securities with a fair value that has declined below amortized cost to determine how the decline in fair value should be recognized. If we determine, based on the facts and circumstances related to the specific security, that we intend to sell a security or it is more likely than not that we would be required to sell a security before the recovery of its amortized cost, any existing allowance for credit losses is reversed and the amortized cost of the security is written down to fair value. If neither of these conditions exist, we evaluate whether the decline in fair value has resulted from a credit loss or other factors.

For non-structured AFS securities, we qualitatively consider relevant facts and circumstances in evaluating whether a decline below fair value is credit-related. Relevant facts and circumstances include but are not limited to: (1) the extent to which the fair value is less than amortized cost; (2) changes in agency credit ratings, (3) adverse conditions related to the security's industry or geographical area, (4) failure to make scheduled payments, and (5) other known changes in the financial condition of the issuer or quality of any underlying collateral or credit enhancements. For structured AFS securities meeting the definition of beneficial interests, the qualitative assessment is bypassed, and any securities having experienced a decline in fair value below amortized cost move directly to a quantitative analysis.

If upon completion of this analysis it is determined that a potential credit loss exists, an allowance for expected credit losses is established equal to the amount by which the present value of expected cash flows is less than amortized cost, limited by the amount by which fair value is less than amortized cost. A non-structured security's cash flow estimates are derived from scenario-based outcomes of expected corporate restructurings or the disposition of assets using security-specific facts and circumstances including timing, security interests and loss severity. A structured security's cash flow estimates are based on security-specific facts and circumstances that may include collateral characteristics, expectations of delinquency and default rates, loss severity, prepayments and structural support, including subordination and guarantees. The expected cash flows are discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete a structured security. For securities with a contractual interest rate that varies based on changes in an independent factor, such as an index or rate, the effective interest rate is calculated based on the factor as it changes over the life of the security. Inherently under the discounted cash flow model, both the timing and amount of cash flows affect the measurement of the allowance for expected credit losses.

The allowance for expected credit losses is remeasured each period for the passage of time, any change in expected cash flows, and changes in the fair value of the security. All impairments, whether intent or requirement to sell or credit-related, are recorded through a charge to credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss). All changes in the allowance for expected credit losses are recorded through credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss).

We have elected to present accrued interest receivable separately in accrued investment income on the condensed consolidated balance sheets. We have also elected the practical expedient to exclude the accrued interest receivable from the amortized cost balance used to calculate the allowance for expected credit losses, as we have a policy to write off such balances in a timely manner, when they become 90 days past due. Any write-off of accrued interest is recorded through a reversal of net investment income on the condensed consolidated statements of income (loss).

Upon determining that all or a portion of the amortized cost of an asset is uncollectible, which is generally when all efforts for collection are exhausted, the amortized cost is written off against the existing allowance. Any write off in excess of the existing allowance is recorded through credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss).

Adopted Accounting Pronouncements

Financial Instruments – Credit Losses (ASU 2019-05, ASU 2019-04, ASU 2018-19 and ASU 2016-13)
This update limits the number of credit impairment models used for different assets and results in accelerated credit loss recognition on assets held at amortized cost, which primarily includes our commercial and residential mortgage loans, but also includes certain other loans and reinsurance assets. The identification of PCD financial assets includes all assets that have experienced a more-than-insignificant deterioration in credit since origination. Additionally, changes in the expected cash flows of purchased credit-deteriorated financial assets are recognized immediately in the income statement. AFS securities are not in scope of the new credit loss model, but were subject to targeted improvements including the establishment of a valuation allowance for credit losses versus the previous direct write down approach. We adopted this update effective January 1, 2020 with a cumulative-effect adjustment that decreased retained earnings by $117 million net of tax and offsetting impacts to DAC, DSI, VOBA and the SOP 03-1 reserve. The adjustment to retained earnings primarily relates to the establishment of an allowance on our commercial mortgage loan portfolio, which represented approximately 1.59% of the amortized cost of the portfolio, but also includes immaterial impacts relating to other assets in scope, including residential mortgage loans, funds withheld at interest, and reinsurance recoverable.

Additionally, the update requires investments previously considered purchased credit impaired (PCI), which includes certain of our residential mortgage loans and RMBS to become subject to a modified PCD framework at the transition date. Any required allowance at transition for these assets is to be recorded through a gross-up of the amortized cost, rather than a charge to retained earnings. Additionally, under the AFS impairment model, the recording of an allowance is prohibited in instances where fair value exceeds amortized cost as such securities are not considered impaired under the AFS impairment model. Therefore, no allowance was recorded at transition for PCI RMBS that were in an unrealized gain position. The transition increase of amortized cost and corresponding valuation allowance for residential mortgage loans and RMBS was $36 million and $17 million, respectively.

Collaborative Arrangements (ASU 2018-18)
The amendments in this update provide guidance on whether certain transactions between collaborative arrangement participants should be accounted for as revenue under Topic 606, providing comparability in the presentation of revenue for certain transactions. We adopted this update effective January 1, 2020. This update did not have a material effect on our consolidated financial statements.

Consolidation (ASU 2018-17)
The amendments in this update expand certain discussions in the VIE guidance, including considerations necessary for determining when a decision-making fee is a variable interest. We adopted this update effective January 1, 2020. The adoption of this update did not have a material effect on our consolidated financial statements.

Cloud Computing Arrangements (ASU 2018-15)
The amendments in this update align the requirements for capitalizing implementation costs incurred in a cloud computing service arrangement with the requirements for capitalizing implementation costs incurred for internal-use software. We adopted this update on a prospective basis effective January 1, 2020. This update did not have a material effect on our consolidated financial statements.

Fair Value Measurement – Disclosure Requirements (ASU 2018-13)
The amendments in this update modify the disclosure requirements for fair value measurements by removing, modifying or adding certain disclosures. On October 1, 2018, we early adopted the removal and modification of certain disclosures as permitted. The additional disclosures in the update were adopted effective January 1, 2020. The adoption of this update did not have a material effect on our consolidated financial statements.

Intangibles – Simplifying the Test for Goodwill Impairment (ASU 2017-04)
The amendments in this update simplify the subsequent measurement of goodwill by eliminating the comparison of the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill to determine the goodwill impairment loss. With the adoption of this guidance, a goodwill impairment is the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of the goodwill allocated to that reporting unit. Entities continue to have the option to perform a qualitative assessment to determine if a quantitative impairment test is necessary. We do not have material goodwill and adopted this update on a prospective basis effective January 1, 2020. The adoption of this update did not have a material effect on our consolidated financial statements.

Recently Issued Accounting Pronouncements

Insurance – Targeted Improvements to the Accounting for Long-Duration Contracts (ASU 2019-09, ASU 2018-12)
These updates amend four key areas pertaining to the accounting and disclosures for long-duration insurance and investment contracts.

- The update requires cash flow assumptions used to measure the liability for future policy benefits to be updated at least annually and no longer allows a provision for adverse deviation. The remeasurement of the liability associated with the update of assumptions is required to be recognized in net income. Loss recognition testing is eliminated for traditional and limited-payment contracts. The update also requires the discount rate used in measuring the liability to be an upper-medium grade fixed-income instrument yield, which is to be updated at each reporting date. The change in liability due to changes in the discount rate is to be recognized in other comprehensive income.
- The update simplifies the amortization of deferred acquisition costs and other balances amortized in proportion to premiums, gross profits, or gross margins, requiring such balances to be amortized on a constant level basis over the expected term of the contracts. Deferred costs are required to be written off for unexpected contract terminations but are not subject to impairment testing.
- The update requires certain contract features meeting the definition of market risk benefits to be measured at fair value. Among the features included in this definition are the guaranteed lifetime withdrawal benefits (GLWB) and guaranteed minimum death benefit (GMDB) riders attached to our annuity products. The change in fair value of the market risk benefits is to be recognized in net income, excluding the portion attributable to changes in instrument-specific credit risk which is recognized in other comprehensive income.
- The update also introduces disclosure requirements around the liability for future policy benefits, policyholder account balances, market risk benefits, separate account liabilities, and deferred acquisition costs. This includes disaggregated rollforwards of these balances and information about significant inputs, judgments, assumptions and methods used in their measurement.

The amendments in ASU 2018-12 were originally intended to become effective January 1, 2021; however, with the issuance of ASU 2019-09, we will not be required to adopt the amendments until January 1, 2022. Certain provisions of the update are required to be adopted on a fully retrospective basis, while others may be adopted on a modified retrospective basis. Early adoption is permitted. We are currently evaluating the impact of this guidance on our consolidated financial statements.

Income Taxes – Simplifying the Accounting for Income Taxes (ASU 2019-12)
The amendments in this update simplify the accounting for income taxes by eliminating certain exceptions to the tax accounting guidance related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period, and the recognition of deferred tax liabilities related to foreign investment ownership changes. It also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill and allocating consolidated income taxes to separate financial statements of entities not subject to income tax. We will be required to adopt this update January 1, 2021 and apply certain aspects of the update retrospectively while other aspects will be applied on a modified retrospective basis. Early adoption is permitted. We are currently evaluating the impact of this guidance on our consolidated financial statements.

2. Investments

AFS Securities—Our AFS investment portfolio includes bonds, collateralized loan obligations (CLO), asset-backed securities (ABS), commercial mortgage-backed securities (CMBS), RMBS and redeemable preferred stock. Our AFS investment portfolio includes related party investments that are primarily a result of investments over which Apollo can exercise significant influence. These investments are presented as investments in related parties on the condensed consolidated balance sheets, and are separately disclosed below.

The following table represents the amortized cost, allowance for credit losses, gross unrealized gains and losses and fair value of our AFS investments by asset type:

	March 31, 2020				
(In millions)	Amortized Cost	Allowance for Credit Losses	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
AFS securities					
U.S. government and agencies	$ 37	$ —	$ 3	$ —	$ 40
U.S. state, municipal and political subdivisions	815	—	102	(8)	909
Foreign governments	278	—	14	(1)	291
Corporate	44,315	(15)	2,138	(1,970)	44,468
CLO	8,057	—	4	(1,420)	6,641
ABS	4,970	(5)	32	(434)	4,563
CMBS	2,431	(4)	65	(201)	2,291
RMBS	6,673	(54)	116	(267)	6,468
Total AFS securities	67,576	(78)	2,474	(4,301)	65,671
AFS securities – related party					
Corporate	18	—	1	—	19
CLO	1,226	—	—	(186)	1,040
ABS	2,760	—	1	(274)	2,487
Total AFS securities – related party	4,004	—	2	(460)	3,546
Total AFS securities including related party	$ 71,580	$ (78)	$ 2,476	$ (4,761)	$ 69,217

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

The following table represents the amortized cost, gross unrealized gains and losses, fair value and other than temporary impairments (OTTI) in accumulated other comprehensive income (AOCI) of our AFS investments by asset type:

	December 31, 2019				
(In millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	OTTI in AOCI
AFS securities					
U.S. government and agencies	$ 35	$ 1	$ —	$ 36	$ —
U.S. state, municipal and political subdivisions	1,322	220	(1)	1,541	—
Foreign governments	298	29	—	327	—
Corporate	44,106	3,332	(210)	47,228	1
CLO	7,524	21	(196)	7,349	—
ABS	5,018	124	(24)	5,118	4
CMBS	2,304	104	(8)	2,400	1
RMBS	6,872	513	(10)	7,375	19
Total AFS securities	67,479	4,344	(449)	71,374	25
AFS securities – related party					
Corporate	18	1	—	19	—
CLO	951	3	(18)	936	—
ABS	2,814	37	(2)	2,849	—
Total AFS securities – related party	3,783	41	(20)	3,804	—
Total AFS securities including related party	$ 71,262	$ 4,385	$ (469)	$ 75,178	$ 25

The amortized cost and fair value of AFS securities, including related party, are shown by contractual maturity below:

	March 31, 2020	
(In millions)	Amortized Cost	Fair Value
AFS securities		
Due in one year or less	$ 1,070	$ 1,064
Due after one year through five years	9,168	9,050
Due after five years through ten years	11,040	10,823
Due after ten years	24,167	24,771
CLO, ABS, CMBS and RMBS	22,131	19,963
Total AFS securities	67,576	65,671
AFS securities – related party		
Due after one year through five years	18	19
CLO and ABS	3,986	3,527
Total AFS securities – related party	4,004	3,546
Total AFS securities including related party	$ 71,580	$ 69,217

Actual maturities can differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

Unrealized Losses on AFS Securities—The following summarizes the fair value and gross unrealized losses for AFS securities, including related party, for which an allowance for credit losses has not been recorded, aggregated by asset type and length of time the fair value has remained below amortized cost:

	March 31, 2020					
	Less than 12 months		12 months or more		Total	
(In millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
AFS securities						
U.S. state, municipal and political subdivisions	$ 157	$ (7)	$ 10	$ (1)	$ 167	$ (8)
Foreign governments	43	(1)	—	—	43	(1)
Corporate	15,956	(1,842)	335	(127)	16,291	(1,969)
CLO	3,996	(751)	2,436	(637)	6,432	(1,388)
ABS	3,255	(395)	108	(24)	3,363	(419)
CMBS	1,082	(183)	36	(5)	1,118	(188)
RMBS	2,856	(176)	30	(4)	2,886	(180)
Total AFS securities	27,345	(3,355)	2,955	(798)	30,300	(4,153)
AFS securities – related party						
Corporate	3	—	—	—	3	—
CLO	887	(144)	153	(42)	1,040	(186)
ABS	2,389	(274)	—	—	2,389	(274)
Total AFS securities – related party	3,279	(418)	153	(42)	3,432	(460)
Total AFS securities including related party	$ 30,624	$ (3,773)	$ 3,108	$ (840)	$ 33,732	$ (4,613)

The following summarizes the fair value and gross unrealized losses for AFS securities, including related party, aggregated by asset type and length of time the fair value has remained below amortized cost:

	December 31, 2019					
	Less than 12 months		12 months or more		Total	
(In millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
AFS securities						
U.S. government and agencies	$ 3	$ —	$ —	$ —	$ 3	$ —
U.S. state, municipal and political subdivisions	78	(1)	10	—	88	(1)
Corporate	2,898	(140)	902	(70)	3,800	(210)
CLO	1,959	(38)	3,241	(158)	5,200	(196)
ABS	642	(6)	255	(18)	897	(24)
CMBS	220	(4)	41	(4)	261	(8)
RMBS	445	(6)	163	(4)	608	(10)
Total AFS securities	6,245	(195)	4,612	(254)	10,857	(449)
AFS securities – related party						
CLO	362	(7)	242	(11)	604	(18)
ABS	357	(2)	—	—	357	(2)
Total AFS securities – related party	719	(9)	242	(11)	961	(20)
Total AFS securities including related party	$ 6,964	$ (204)	$ 4,854	$ (265)	$ 11,818	$ (469)

As of March 31, 2020, we held 4,327 AFS securities that were in an unrealized loss position. Of this total, 346 were in an unrealized loss position 12 months or more. As of March 31, 2020, we held 104 related party AFS securities that were in an unrealized loss position. Of this total, eight were in an unrealized loss position 12 months or more. The unrealized losses on AFS securities can primarily be attributed to changes in market interest rates since acquisition. We did not recognize the unrealized losses in income as we intend to hold these securities and it is not more likely than not we will be required to sell a security before the recovery of its amortized cost.

Allowance for Credit Losses—The following table summarizes the activity in the allowance for credit losses for AFS securities by asset type:

	Three months ended March 31, 2020					
		Additions			Reductions	
(In millions)	Beginning balance	Initial credit losses	Initial credit losses on PCD securities	Additions for previously impaired securities	Securities sold during the period	Ending Balance
AFS securities						
Corporate	$ —	$ 15	$ —	$ —	$ —	$ 15
ABS	—	5	—	—	—	5
CMBS	—	4	—	—	—	4
RMBS	17	35	1	2	(1)	54
Total AFS securities	$ 17	$ 59	$ 1	$ 2	$ (1)	$ 78

Net Investment Income—Net investment income by asset class consists of the following:

	Three months ended March 31,	
(In millions)	2020	2019
AFS securities	$ 837	$ 753
Trading securities	48	42
Equity securities	4	3
Mortgage loans	186	151
Investment funds	(278)	26
Funds withheld at interest	41	163
Other	37	39
Investment revenue	875	1,177
Investment expenses	(130)	(95)
Net investment income	$ 745	$ 1,082

Investment Related Gains (Losses)—Investment related gains (losses) by asset class consists of the following:

	Three months ended March 31,	
(In millions)	2020	2019
AFS securities		
Gross realized gains on investment activity	$ 164	$ 17
Gross realized losses on investment activity	(134)	(13)
Net realized investment gains on AFS securities	30	4
Net recognized investment gains (losses) on trading securities	(223)	56
Net recognized investment gains (losses) on equity securities	(50)	18
Derivative gains (losses)	(3,019)	1,692
Provision for credit losses	(284)	—
Other gains (losses)	(26)	6
Investment related gains (losses)	$ (3,572)	$ 1,776

Proceeds from sales of AFS securities were $1,807 million and $1,253 million for the three months ended March 31, 2020 and 2019, respectively.

The following table summarizes the change in unrealized gains (losses) on trading and equity securities we held as of the respective period end:

	Three months ended March 31,	
(In millions)	2020	2019
Trading securities	$ (73)	$ 71
Trading securities – related party	(109)	(2)
Equity securities	(37)	18
Equity securities – related party	—	3

Purchased Financial Assets with Credit Deterioration—During the three months ended March 31, 2020, we purchased PCD investments with the following amounts at the time of purchase:

(In millions)	Fixed maturity securities	Mortgage loans
Purchase price	$ 14	$ —
Allowance for credit losses at acquisition	1	—
Discount (premiums) attributable to other factors	1	—
Par value	$ 16	$ —

Repurchase Agreements—The following table summarizes the maturities of our repurchase agreements:

	March 31, 2020				
	Remaining Contractual Maturity				
(In millions)	Overnight and continuous	Up to 30 days	30-90 days	Greater than 90 days	Total
Payables for repurchase agreements[1]	$ —	$ —	$ 293	$ 1,001	$ 1,294

[1] *Included in payables for collateral on derivatives and securities to repurchase on the condensed consolidated balance sheets.*

	December 31, 2019				
	Remaining Contractual Maturity				
(In millions)	Overnight and continuous	Up to 30 days	30-90 days	Greater than 90 days	Total
Payables for repurchase agreements[1]	$ —	$ 102	$ 200	$ 210	$ 512

[1] *Included in payables for collateral on derivatives and securities to repurchase on the condensed consolidated balance sheets.*

The following table summarizes the securities pledged as collateral for repurchase agreements:

	March 31, 2020		December 31, 2019	
(In millions)	Amortized Cost	Fair Value	Amortized Cost	Fair Value
AFS securities – Corporate	$ 1,328	$ 1,435	$ 498	$ 534
Total securities pledged under repurchase agreements	$ 1,328	$ 1,435	$ 498	$ 534

Reverse Repurchase Agreements—Reverse repurchase agreements represent the purchase of investments from a seller with the agreement that the investments will be repurchased by the seller at a specified price and date or within a specified period of time. The investments purchased, which represent collateral on a secured lending arrangement, are not reflected in our condensed consolidated balance sheets; however, the secured lending arrangement is recorded as a short-term investment for the principal amount loaned under the agreement. As of March 31, 2020 and December 31, 2019, amounts loaned under reverse repurchase agreements were $190 million and collateral backing the agreement was $616 million and $630 million, respectively.

Mortgage Loans, including related party—Mortgage loans, net of allowances, consists of the following:

(In millions)	March 31, 2020	December 31, 2019
Commercial mortgage loans	$ 11,281	$ 10,422
Commercial mortgage loans under development	140	93
Total commercial mortgage loans	11,421	10,515
Allowance for credit losses on commercial mortgage loans	(343)	(10)
Commercial mortgage loans, net of allowances	11,078	10,505
Residential mortgage loans	4,021	4,455
Allowance for credit losses on residential mortgage loans	(81)	(1)
Residential mortgage loans, net of allowances	3,940	4,454
Mortgage loans, net of allowances	$ 15,018	$ 14,959

We primarily invest in commercial mortgage loans on income producing properties including office and retail buildings, apartments, hotels and industrial properties. We diversify the commercial mortgage loan portfolio by geographic region and property type to reduce concentration risk. We evaluate mortgage loans based on relevant current information to confirm if properties are performing at a consistent and acceptable level to secure the related debt.

The distribution of commercial mortgage loans, including those under development, net of allowances, by property type and geographic region, is as follows:

	March 31, 2020		December 31, 2019	
(In millions, except for percentages)	Net Carrying Value	Percentage of Total	Net Carrying Value	Percentage of Total
Property type				
Office building	$ 3,465	31.2%	$ 2,899	27.6%
Retail	2,117	19.1%	2,182	20.8%
Apartment	2,333	21.1%	2,142	20.4%
Hotels	1,062	9.6%	1,104	10.5%
Industrial	1,402	12.7%	1,448	13.8%
Other commercial	699	6.3%	730	6.9%
Total commercial mortgage loans	$ 11,078	100.0%	$ 10,505	100.0%
U.S. Region				
East North Central	$ 1,200	10.8%	$ 1,036	9.9%
East South Central	422	3.8%	428	4.1%
Middle Atlantic	2,953	26.6%	2,580	24.6%
Mountain	508	4.6%	528	5.0%
New England	336	3.0%	340	3.2%
Pacific	2,559	23.1%	2,502	23.8%
South Atlantic	1,980	17.9%	1,920	18.3%
West North Central	140	1.3%	146	1.4%
West South Central	770	7.0%	791	7.5%
Total U.S. Region	10,868	98.1%	10,271	97.8%
International Region	210	1.9%	234	2.2%
Total commercial mortgage loans	$ 11,078	100.0%	$ 10,505	100.0%

Our residential mortgage loan portfolio includes first lien residential mortgage loans collateralized by properties in various geographic locations and is summarized by proportion of the portfolio in the following table:

	March 31, 2020	December 31, 2019
U.S. States		
California	26.5%	27.0%
Florida	13.5%	12.7%
Texas	5.3%	6.2%
Other[1]	41.3%	41.7%
Total U.S. residential mortgage loan percentage	86.6%	87.6%
International – Ireland	13.4%	12.4%
Total residential mortgage loan percentage	100.0%	100.0%

[1]*Represents all other states, with each individual state comprising less than 5% of the portfolio.*

Loan Valuation Allowance—The allowances for our mortgage loan portfolio and other loans is summarized as follows:

	Three months ended March 31, 2020			
(In millions)	Commercial Mortgage	Residential Mortgage	Related Party Other Investments	Total
Beginning balance	$ 10	$ 1	$ —	$ 11
Adoption of accounting standard	167	43	11	221
Provision for expected credit losses	166	37	1	204
Ending balance	$ 343	$ 81	$ 12	$ 436

Residential mortgage loans – Our allowance model for residential mortgage loans is based on the characteristics of the loans in our portfolio, historical economic data and loss information, and current and forecasted economic conditions. Key loan characteristics affecting the estimate include, among others: time to maturity, delinquency status, original credit scores and loan-to-value ratios. Key macroeconomic variables include unemployment rates and the housing price index. Management reviews and approves forecasted macroeconomic variables, along with the reasonable and supportable forecast period and mean reversion technique. Management also evaluates assumptions from independent third parties and these assumptions have a high degree of subjectivity. The mean reversion technique varies by macroeconomic variable and may vary by geographic location. As of March 31, 2020, our reasonable and supportable forecast period ranged from 3 months – 1 year, after which, we revert to the 30-year or greater historical average over a period of up to 9 months and then continue at those averages through the contractual life of the loan.

Commercial mortgage loans – Our allowance model for commercial mortgage loans is based on the characteristics of the loans in our portfolio, historical economic data and loss information, and current and forecasted economic conditions. Key loan characteristics affecting the estimate include, among others: time to maturity, delinquency status, loan-to-value ratios, debt service coverage ratios, etc. Key macroeconomic variables include unemployment rates, rent growth, capitalization rates, and the housing price index. Management reviews and approves forecasted macroeconomic variables, along with the reasonable and supportable forecast period and mean reversion technique. Management also evaluates assumptions from independent third parties and these assumptions have a high degree of subjectivity. The mean reversion technique varies by macroeconomic variable and may vary by geographic location. As of March 31, 2020, our reasonable and supportable forecast period ranged from 3 months – 2 years, after which, we revert to the 30-year or greater historical average over a period of up to 10 years.

Related party other investments – The allowance model for the loans included in related party other investments derives an estimate based on historical loss data available for similarly rated unsecured corporate debt obligations, while also incorporating management's expectations around prepayment.

Credit Quality Indicators

Residential mortgage loans – The underwriting process for our residential mortgage loans includes an evaluation of relevant credit information including past loan performance, credit scores, loan-to-value and other relevant information. Subsequent to purchase or origination, we closely monitor economic conditions and loan performance to manage and evaluate our exposure to credit risk in our residential mortgage loan portfolio. The primary credit quality indicator monitored for residential mortgage loans is loan performance. Nonperforming residential mortgage loans are 90 days or more past due and/or are in non-accrual status.

The following represents our residential loan portfolio by origination year and performance status:

	March 31, 2020						
(In millions)	2020	2019	2018	2017	2016	Prior	Total
Current (less than 30 days past due)	$ 38	$ 998	$ 2,042	$ 547	$ 151	$ 9	$ 3,785
30 to 59 days past due	—	47	36	32	15	1	131
60 to 89 days past due	—	7	11	8	4	—	30
Over 90 days past due	—	9	17	32	15	2	75
Total residential mortgages	$ 38	$ 1,061	$ 2,106	$ 619	$ 185	$ 12	$ 4,021

As of December 31, 2019, $67 million of our residential mortgage loans were nonperforming.

The following represents our residential loan portfolio in non-accrual status:

(In millions)	March 31, 2020
Beginning amortized cost of residential mortgage loans in non-accrual status	$ 67
Ending amortized cost of residential mortgage loans in non-accrual status	75
Amortized cost of residential mortgage loans in non-accrual status without a related allowance for credit losses	6

During the three months ended March 31, 2020, we recognized $1 million of interest income on residential mortgage loans in non-accrual status.

Commercial mortgage loans – The following represents our commercial mortgage loan portfolio by origination year and loan performance status:

	March 31, 2020						
(In millions)	2020	2019	2018	2017	2016	Prior	Total
Current (less than 30 days past due)	$ 1,103	$ 4,537	$ 2,846	$ 1,050	$ 160	$ 1,725	$ 11,421

As of December 31, 2019, none of our commercial loans were 30 days or more past due.

The following represents our commercial mortgage loan portfolio in non-accrual status:

(In millions)	March 31, 2020
Beginning amortized cost of commercial mortgage loans in non-accrual status	$ —
Ending amortized cost of commercial mortgage loans in non-accrual status	40
Amortized cost of commercial mortgage loans in non-accrual status without a related allowance for credit losses	—

During the three months ended March 31, 2020, no interest income was recognized on commercial mortgage loans in non-accrual status.

Loan-to-value and debt service coverage ratios are measures we use to assess the risk and quality of commercial mortgage loans other than those under development. Loans under development are not evaluated using these ratios as the properties underlying these loans are generally not yet income-producing and the value of the underlying property significantly fluctuates based on the progress of construction. Therefore, the risk and quality of loans under development are evaluated based on the aging and geographical distribution of such loans as shown above.

The loan-to-value ratio is expressed as a percentage of the amount of the loan relative to the value of the underlying property. A loan-to-value ratio in excess of 100% indicates the unpaid loan amount exceeds the value of the underlying collateral. Loan-to-value information is updated annually as part of the re-underwriting process supporting the NAIC risk based capital rating criteria. The following represents the loan-to-value ratio of the commercial mortgage loan portfolio, excluding those under development, by origination year:

	March 31, 2020						
(In millions)	2020	2019	2018	2017	2016	Prior	Total
Less than 50%	$ 149	$ 760	$ 207	$ 147	$ 74	$ 1,351	$ 2,688
50% to 60%	143	1,128	786	332	40	172	2,601
61% to 70%	441	2,023	1,481	476	46	108	4,575
71% to 80%	342	599	287	95	—	54	1,377
81% to 100%	—	—	—	—	—	40	40
Commercial mortgage loans	$ 1,075	$ 4,510	$ 2,761	$ 1,050	$ 160	$ 1,725	$ 11,281

The following represents the loan-to-value ratio of the commercial mortgage loan portfolio, excluding those under development, net of valuation allowances:

(In millions)	December 31, 2019
Less than 50%	$ 2,640
50% to 60%	2,486
61% to 70%	4,093
71% to 80%	1,162
81% to 100%	31
Commercial mortgage loans	$ 10,412

The debt service coverage ratio is expressed as a percentage of a property's net operating income to its debt service payments. A debt service ratio of less than 1.0 indicates a property's operations do not generate enough income to cover debt payments. Debt service coverage ratios are updated as more recent financial statements become available, at least annually or as frequently as quarterly in some cases. The following represents the debt service coverage ratio of the commercial mortgage loan portfolio, excluding those under development, by origination year:

	March 31, 2020						
(In millions)	2020	2019	2018	2017	2016	Prior	Total
Greater than 1.20x	$ 860	$ 3,661	$ 2,703	$ 974	$ 160	$ 1,599	$ 9,957
1.00x – 1.20x	149	849	58	53	—	114	1,223
Less than 1.00x	66	—	—	23	—	12	101
Commercial mortgage loans	$ 1,075	$ 4,510	$ 2,761	$ 1,050	$ 160	$ 1,725	$ 11,281

The following represents the debt service coverage ratio of the commercial mortgage loan portfolio, excluding those under development, net of valuation allowances:

(In millions)	December 31, 2019
Greater than 1.20x	$ 9,212
1.00x – 1.20x	1,166
Less than 1.00x	34
Commercial mortgage loans	$ 10,412

Investment Funds—Our investment fund portfolio consists of funds that employ various strategies and include investments in real estate, real assets, credit, equity and natural resources. Investment funds can meet the definition of VIEs. Our investment funds do not specify timing of distributions on the funds' underlying assets.

The following summarizes our investment funds, including related party:

	March 31, 2020		December 31, 2019	
(In millions, except for percentages)	Carrying value	Percent of total	Carrying value	Percent of total
Investment funds				
Real estate	$ 284	38.4%	$ 277	36.9%
Credit funds	122	16.5%	153	20.4%
Private equity	244	33.0%	236	31.5%
Real assets	89	12.0%	83	11.1%
Natural resources	1	0.1%	1	0.1%
Total investment funds	740	100.0%	750	100.0%
Investment funds – related parties				
Differentiated investments				
MidCap FinCo Designated Activity Company (MidCap)[1]	508	11.0%	547	15.4%
AmeriHome Mortgage Company, LLC (AmeriHome)[1]	508	11.0%	487	13.7%
Catalina Holdings Ltd. (Catalina)	296	6.4%	271	7.6%
Athora Holding Ltd. (Athora)[1]	130	2.8%	132	3.7%
Venerable Holdings, Inc. (Venerable)[1]	110	2.4%	99	2.8%
Other	281	6.1%	222	6.3%
Total differentiated investments	1,833	39.7%	1,758	49.5%
Real estate	775	16.7%	853	24.0%
Credit funds	446	9.6%	370	10.4%
Private equity	227	4.9%	105	3.0%
Real assets	256	5.5%	182	5.1%
Natural resources	200	4.3%	163	4.6%
Public equities	44	1.0%	119	3.4%
Investment in Apollo[1]	850	18.3%	—	—%
Total investment funds – related parties	4,631	100.0%	3,550	100.0%
Total investment funds including related party	$ 5,371		$ 4,300	

[1] See further discussion on MidCap, AmeriHome, Athora, Venerable and our investment in Apollo in Note 9 – Related Parties.

Non-Consolidated Securities and Investment Funds

Fixed maturity securities – We invest in securitization entities as a debt holder or an investor in the residual interest of the securitization vehicle. These entities are deemed VIEs due to insufficient equity within the structure and lack of control by the equity investors over the activities that significantly impact the economics of the entity. In general, we are a debt investor within these entities and, as such, hold a variable interest; however, due to the debt holders' lack of ability to control the decisions within the trust that significantly impact the entity, and the fact the debt holders are protected from losses due to the subordination of the equity tranche, the debt holders are not deemed the primary beneficiary. Securitization vehicles in which we hold the residual tranche are not consolidated because we do not unilaterally have substantive rights to remove the general partner, or when assessing related party interests, we are not under common control, as defined by GAAP, with the related party, nor are substantially all of the activities conducted on our behalf; therefore, we are not deemed the primary beneficiary. Debt investments and investments in the residual tranche of securitization entities are considered debt instruments and are held at fair value on the balance sheet and classified as AFS or trading.

Investment funds – Investment funds include non-fixed income, alternative investments in the form of limited partnerships or similar legal structures.

Equity securities – We invest in preferred equity securities issued by entities deemed to be VIEs due to insufficient equity within the structure.

Our risk of loss associated with our non-consolidated investments depends on the investment. Investment funds, equity securities and trading securities are limited to the carrying value plus unfunded commitments. AFS securities are limited to amortized cost plus unfunded commitments.

The following summarizes the carrying value and maximum loss exposure of these non-consolidated investments:

	March 31, 2020		December 31, 2019	
(In millions)	Carrying Value	Maximum Loss Exposure	Carrying Value	Maximum Loss Exposure
Investment funds	$ 740	$ 1,232	$ 750	$ 1,265
Investment in related parties – investment funds	4,631	6,724	3,550	5,955
Investment in fixed maturity securities	20,380	22,548	22,694	22,170
Investment in related parties – fixed maturity securities	4,245	5,177	4,570	4,878
Investment in related parties – equity securities	49	49	58	58
Total non-consolidated investments	$ 30,045	$ 35,730	$ 31,622	$ 34,326

3. Derivative Instruments

We use a variety of derivative instruments to manage risks, primarily equity, interest rate, credit, foreign currency and market volatility. See *Note 4 – Fair Value* for information about the fair value hierarchy for derivatives.

The following table presents the notional amount and fair value of derivative instruments:

	March 31, 2020			December 31, 2019		
		Fair Value			Fair Value	
(In millions)	Notional Amount	Assets	Liabilities	Notional Amount	Assets	Liabilities
Derivatives designated as hedges						
Foreign currency swaps	3,226	$ 519	$ 58	3,158	$ 113	$ 56
Foreign currency forwards	801	6	2	717	1	9
Foreign currency forwards on net investments	136	4	—	139	—	2
Total derivatives designated as hedges		529	60		114	67
Derivatives not designated as hedges						
Equity options	48,654	999	11	49,549	2,746	5
Futures	7	19	7	8	10	1
Total return swaps	124	—	25	106	6	—
Foreign currency swaps	11	2	—	35	2	1
Interest rate swaps	776	9	88	776	3	4
Credit default swaps	10	—	7	10	—	3
Foreign currency forwards	3,230	52	24	1,924	7	16
Embedded derivatives						
Funds withheld including related party		(389)	24		1,395	31
Interest sensitive contract liabilities		—	9,089		—	10,942
Total derivatives not designated as hedges		692	9,275		4,169	11,003
Total derivatives		$ 1,221	$ 9,335		$ 4,283	$ 11,070

Derivatives Designated as Hedges

Foreign currency swaps – We use foreign currency swaps to convert foreign currency denominated cash flows of an investment to U.S. dollars to reduce cash flow fluctuations due to changes in currency exchange rates. Certain of these swaps are designated and accounted for as cash flow hedges, which will expire by December 2050. During the three months ended March 31, 2020 and 2019, we had foreign currency swap gains of $401 million and losses of $8 million, respectively, recorded in AOCI. There were no amounts reclassified to income and no amounts deemed ineffective for the three months ended March 31, 2020 and 2019. As of March 31, 2020, no amounts are expected to be reclassified to income within the next 12 months.

Foreign currency forwards – We use foreign currency forward contracts to hedge certain exposures to foreign currency risk. The price is agreed upon at the time of the contract and payment is made at a specified future date. Certain of these forwards are designated and accounted for as fair value hedges. As of March 31, 2020 and December 31, 2019, the carrying amount of the hedged AFS securities was $659 million and $456 million, respectively, and the cumulative amount of fair value hedging adjustments included in the hedged AFS securities included losses of $8 million and gains of $1 million, respectively. The gains and losses on derivatives and the related hedged items in fair value hedge relationships are recorded in investment related gains (losses) on the condensed consolidated statements of income (loss). During the three months ended March 31, 2020 and 2019, the derivatives had gains of $12 million and $3 million, respectively, and the related hedged items had losses of $8 million and $3 million, respectively.

Foreign currency forwards on net investments – We have foreign currency forwards designated as net investment hedges. These forwards hedge the foreign currency exchange rate risk of our investments in subsidiaries that have a reporting currency other than the U.S. dollar. We assess hedge effectiveness based on the changes in forward rates. During the three months ended March 31, 2020, these derivatives had gains of $13 million, which are included in foreign currency translation and other adjustments on the condensed consolidated statements of comprehensive income (loss). As of March 31, 2020 and December 31, 2019, the cumulative foreign currency translation recorded in AOCI related to these net investment hedges were gains of $11 million and losses of $2 million, respectively. During the three months ended March 31, 2020, there were no amounts deemed ineffective.

Derivatives Not Designated as Hedges

Equity options – We use equity indexed options to economically hedge fixed indexed annuity products that guarantee the return of principal to the policyholder and credit interest based on a percentage of the gain in a specified market index, primarily the S&P 500. To hedge against adverse changes in equity indices, we enter into contracts to buy equity indexed options. The contracts are net settled in cash based on differentials in the indices at the time of exercise and the strike price.

Futures – Futures contracts are purchased to hedge the growth in interest credited to the customer as a direct result of increases in the related indices. We enter into exchange-traded futures with regulated futures commission clearing brokers who are members of a trading exchange. Under exchange-traded futures contracts, we agree to purchase a specified number of contracts with other parties and to post variation margin on a daily basis in an amount equal to the difference in the daily fair values of those contracts.

Total return swaps – We purchase total rate of return swaps to gain exposure and benefit from a reference asset or index without ownership. Total rate of return swaps are contracts in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of the underlying asset or index, which includes both the income it generates and any capital gains.

Interest rate swaps – We use interest rate swaps to reduce market risks from interest rate changes and to alter interest rate exposure arising from duration mismatches between assets and liabilities. With an interest rate swap, we agree with another party to exchange the difference between fixed-rate and floating-rate interest amounts tied to an agreed-upon notional principal amount at specified intervals.

Credit default swaps – Credit default swaps provide a measure of protection against the default of an issuer or allow us to gain credit exposure to an issuer or traded index. We use credit default swaps coupled with a bond to synthetically create the characteristics of a reference bond. These transactions have a lower cost and are generally more liquid relative to the cash market. We receive a periodic premium for these transactions as compensation for accepting credit risk.

Hedging credit risk involves buying protection for existing credit risk. The exposure resulting from the agreements, which is usually the notional amount, is equal to the maximum proceeds that must be paid by a counterparty for a defaulted security. If a credit event occurs on a reference entity, then a counterparty who sold protection is required to pay the buyer the trade notional amount less any recovery value of the security.

Embedded derivatives – We have embedded derivatives which are required to be separated from their host contracts and reported as derivatives. Host contracts include reinsurance agreements structured on a modified coinsurance (modco) or funds withheld basis and indexed annuity products.

The following is a summary of the gains (losses) related to derivatives not designated as hedges:

	Three months ended March 31,	
(In millions)	2020	2019
Equity options	$ (1,581)	$ 849
Futures	16	(11)
Swaps	(75)	18
Foreign currency forwards	67	6
Embedded derivatives on funds withheld	(1,446)	830
Amounts recognized in investment related gains (losses)	(3,019)	1,692
Embedded derivatives in indexed annuity products[1]	1,177	(1,017)
Total gains (losses) on derivatives not designated as hedges	$ (1,842)	$ 675

[1] *Included in interest sensitive contract benefits on the condensed consolidated statements of income (loss).*

Credit Risk—We may be exposed to credit-related losses in the event of counterparty nonperformance on derivative financial instruments. Generally, the current credit exposure of our derivative contracts is the fair value at the reporting date less any collateral received from the counterparty.

We manage credit risk related to over-the-counter derivatives by entering into transactions with creditworthy counterparties. Where possible, we maintain collateral arrangements and use master netting agreements that provide for a single net payment from one counterparty to another at each due date and upon termination. We have also established counterparty exposure limits, where possible, in order to evaluate if there is sufficient collateral to support the net exposure.

Collateral arrangements typically require the posting of collateral in connection with its derivative instruments. Collateral agreements often contain posting thresholds, some of which may vary depending on the posting party's financial strength ratings. Additionally, a decrease in our financial strength rating to a specified level can result in settlement of the derivative position.

The estimated fair value of our net derivative and other financial assets and liabilities after the application of master netting agreements and collateral were as follows:

		Gross amounts not offset on the condensed consolidated balance sheets				
(In millions)	Gross amount recognized[1]	Financial instruments[2]	Collateral (received)/pledged	Net amount	Off-balance sheet securities collateral[3]	Net amount after securities collateral
March 31, 2020						
Derivative assets	$ 1,610	$ (64)	$ (1,589)	$ (43)	$ (170)	$ (213)
Derivative liabilities	(222)	64	15	(143)	—	(143)
December 31, 2019						
Derivative assets	$ 2,888	$ (67)	$ (2,743)	$ 78	$ (145)	$ (67)
Derivative liabilities	(97)	67	31	1	—	1

[1] *The gross amounts of recognized derivative assets and derivative liabilities are reported on the condensed consolidated balance sheets. As of March 31, 2020 and December 31, 2019, amounts not subject to master netting or similar agreements were immaterial.*

[2] *Represents amounts offsetting derivative assets and derivative liabilities that are subject to an enforceable master netting agreement or similar agreement that are not netted against the gross derivative assets or gross derivative liabilities for presentation on the condensed consolidated balance sheets.*

[3] *For non-cash collateral received, we do not recognize the collateral on our balance sheet unless the obligor (transferor) has defaulted under the terms of the secured contract and is no longer entitled to redeem the pledged asset. Amounts do not include any excess of collateral pledged or received.*

4. Fair Value

Fair value is the price we would receive to sell an asset or pay to transfer a liability (exit price) in an orderly transaction between market participants. We determine fair value based on the following fair value hierarchy:

Level 1 – Unadjusted quoted prices for identical assets or liabilities in an active market.

Level 2 – Quoted prices for inactive markets or valuation techniques that require observable direct or indirect inputs for substantially the full term of the asset or liability. Level 2 inputs include the following:

- Quoted prices for similar assets or liabilities in active markets,
- Observable inputs other than quoted market prices, and
- Observable inputs derived principally from market data through correlation or other means.

Level 3 – Prices or valuation techniques with unobservable inputs significant to the overall fair value estimate. These valuations use critical assumptions not readily available to market participants. Level 3 valuations are based on market standard valuation methodologies, including discounted cash flows, matrix pricing or other similar techniques.

NAV – Investment funds are typically measured using NAV as a practical expedient in determining fair value and are not classified in the fair value hierarchy. The underlying investments of the investment funds may have significant unobservable inputs, which may include but are not limited to, comparable multiples and weighted average cost of capital rates applied in valuation models or a discounted cash flow model.

The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure fair value fall within different levels of the hierarchy, the category level is based on the lowest priority level input that is significant to the instrument's fair value measurement.

We use a number of valuation sources to determine fair values. Valuation sources can include quoted market prices; third-party commercial pricing services; third-party brokers; industry-standard, vendor modeling software that uses market observable inputs; and other internal modeling techniques based on projected cash flows. We periodically review the assumptions and inputs of third-party commercial pricing services through internal valuation price variance reviews, comparisons to internal pricing models, back testing to recent trades, or monitoring trading volumes.

The following represents the hierarchy for our assets and liabilities measured at fair value on a recurring basis:

	March 31, 2020				
(In millions)	Total	NAV	Level 1	Level 2	Level 3
Assets					
AFS securities					
U.S. government and agencies	$ 40	$ —	$ 40	$ —	$ —
U.S. state, municipal and political subdivisions	909	—	—	872	37
Foreign governments	291	—	—	291	—
Corporate	44,468	—	—	43,235	1,233
CLO	6,641	—	—	6,519	122
ABS	4,563	—	—	3,646	917
CMBS	2,291	—	—	2,246	45
RMBS	6,468	—	—	6,426	42
Total AFS securities	65,671	—	40	63,235	2,396
Trading securities					
U.S. government and agencies	11	—	8	3	—
U.S. state, municipal and political subdivisions	112	—	—	112	—
Corporate	1,425	—	—	1,393	32
CLO	3	—	—	—	3
ABS	94	—	—	80	14
CMBS	51	—	—	51	—
RMBS	283	—	—	213	70
Total trading securities	1,979	—	8	1,852	119
Equity securities	206	—	23	176	7
Mortgage loans	26	—	—	—	26
Investment funds	157	136	—	—	21
Funds withheld at interest – embedded derivative	(374)	—	—	—	(374)
Derivative assets	1,610	—	19	1,591	—
Short-term investments	393	—	42	284	67
Other investments	98	—	—	98	—
Cash and cash equivalents	5,419	—	5,419	—	—
Restricted cash	564	—	564	—	—
Investments in related parties					
AFS securities					
Corporate	19	—	—	19	—
CLO	1,040	—	—	1,040	—
ABS	2,487	—	—	600	1,887
Total AFS securities – related party	3,546	—	—	1,659	1,887
Trading securities					
CLO	42	—	—	10	32
ABS	676	—	—	—	676
Total trading securities – related party	718	—	—	10	708
Equity securities	49	—	—	—	49
Investment funds	1,097	118	—	—	979
Funds withheld at interest – embedded derivative	(15)	—	—	—	(15)
Reinsurance recoverable	2,115	—	—	—	2,115
Total assets measured at fair value	$ 83,259	$ 254	$ 6,115	$ 68,905	$ 7,985

(Continued)

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

	March 31, 2020				
(In millions)	Total	NAV	Level 1	Level 2	Level 3
Liabilities					
Interest sensitive contract liabilities					
Embedded derivative	$ 9,089	$ —	$ —	$ —	$ 9,089
Universal life benefits	1,322	—	—	—	1,322
Future policy benefits					
AmerUs Life Insurance Company (AmerUs) Closed Block	1,481	—	—	—	1,481
Indianapolis Life Insurance Company (ILICO) Closed Block and life benefits	778	—	—	—	778
Derivative liabilities	222	—	7	208	7
Funds withheld liability – embedded derivative	24	—	—	24	—
Total liabilities measured at fair value	$ 12,916	$ —	$ 7	$ 232	$ 12,677

(Concluded)

	December 31, 2019				
(In millions)	Total	NAV	Level 1	Level 2	Level 3
Assets					
AFS securities					
U.S. government and agencies	$ 36	$ —	$ 36	$ —	$ —
U.S. state, municipal and political subdivisions	1,541	—	—	1,501	40
Foreign governments	327	—	—	327	—
Corporate	47,228	—	—	46,503	725
CLO	7,349	—	—	7,228	121
ABS	5,118	—	—	3,744	1,374
CMBS	2,400	—	—	2,354	46
RMBS	7,375	—	—	7,375	—
Total AFS securities	71,374	—	36	69,032	2,306
Trading securities					
U.S. government and agencies	11	—	8	3	—
U.S. state, municipal and political subdivisions	135	—	—	135	—
Corporate	1,456	—	—	1,456	—
CLO	6	—	—	—	6
ABS	108	—	—	92	16
CMBS	51	—	—	51	—
RMBS	303	—	—	251	52
Total trading securities	2,070	—	8	1,988	74
Equity securities	247	—	43	201	3
Mortgage loans	27	—	—	—	27
Investment funds	154	132	—	—	22
Funds withheld at interest – embedded derivative	801	—	—	—	801
Derivative assets	2,888	—	10	2,878	—
Short-term investments	406	—	46	319	41
Other investments	93	—	—	93	—
Cash and cash equivalents	4,240	—	4,240	—	—
Restricted cash	402	—	402	—	—

(Continued)

	December 31, 2019				
(In millions)	Total	NAV	Level 1	Level 2	Level 3
Investments in related parties					
AFS securities					
Corporate	19	—	—	19	—
CLO	936	—	—	936	—
ABS	2,849	—	—	525	2,324
Total AFS securities – related party	3,804	—	—	1,480	2,324
Trading securities					
CLO	74	—	—	36	38
ABS	711	—	—	—	711
Total trading securities – related party	785	—	—	36	749
Equity securities	64	—	—	—	64
Investment funds	819	687	—	—	132
Funds withheld at interest – embedded derivative	594	—	—	—	594
Short-term investments	—	—	—	—	—
Reinsurance recoverable	1,821	—	—	—	1,821
Total assets measured at fair value	$ 90,589	$ 819	$ 4,785	$ 76,027	$ 8,958
Liabilities					
Interest sensitive contract liabilities					
Embedded derivative	$ 10,942	$ —	$ —	$ —	$ 10,942
Universal life benefits	1,050	—	—	—	1,050
Future policy benefits					
AmerUs Closed Block	1,546	—	—	—	1,546
ILICO Closed Block and life benefits	755	—	—	—	755
Derivative liabilities	97	—	1	93	3
Funds withheld liability – embedded derivative	31	—	—	31	—
Total liabilities measured at fair value	$ 14,421	$ —	$ 1	$ 124	$ 14,296

(Concluded)

Fair Value Valuation Methods—We used the following valuation methods and assumptions to estimate fair value:

AFS and trading securities – We obtain the fair value for most marketable securities without an active market from several commercial pricing services. These are classified as Level 2 assets. The pricing services incorporate a variety of market observable information in their valuation techniques, including benchmark yields, trading activity, credit quality, issuer spreads, bids, offers and other reference data. This category typically includes U.S. and non-U.S. corporate bonds, U.S. agency and government guaranteed securities, CLO, ABS, CMBS and RMBS.

We also have fixed maturity securities priced based on indicative broker quotes or by employing market accepted valuation models. For certain fixed maturity securities, the valuation model uses significant unobservable inputs and are included in Level 3 in our fair value hierarchy. Significant unobservable inputs used include: issue specific credit adjustments, material non-public financial information, estimation of future earnings and cash flows, default rate assumptions, liquidity assumptions and indicative quotes from market makers. These inputs are usually considered unobservable, as not all market participants have access to this data.

We value privately placed fixed maturity securities based on the credit quality and duration of comparable marketable securities, which may be securities of another issuer with similar characteristics. In some instances, we use a matrix-based pricing model. These models consider the current level of risk-free interest rates, corporate spreads, credit quality of the issuer and cash flow characteristics of the security. We also consider additional factors such as net worth of the borrower, value of collateral, capital structure of the borrower, presence of guarantees and our evaluation of the borrower's ability to compete in its relevant market. Privately placed fixed maturity securities are classified as Level 2 or 3.

Equity securities – Fair values of publicly traded equity securities are based on quoted market prices and classified as Level 1. Other equity securities, typically private equities or equity securities not traded on an exchange, we value based on other sources, such as commercial pricing services or brokers, and are classified as Level 2 or 3.

Mortgage loans – Mortgage loans for which we have elected the fair value option or those held for sale are carried at fair value. We estimate fair value on a monthly basis using discounted cash flow analysis and rates being offered for similar loans to borrowers with similar credit ratings. Loans with similar characteristics are aggregated for purposes of the calculations. The discounted cash flow model uses unobservable inputs, including estimates of discount rates and loan prepayments. Mortgage loans are classified as Level 3.

Investment funds – Certain investment funds for which we elected the fair value option are included in Level 3 and are priced based on market accepted valuation models. The valuation models use significant unobservable inputs, which include material non-public financial information, estimation of future distributable earnings and demographic assumptions. These inputs are usually considered unobservable, as not all market participants have access to this data.

Funds withheld at interest embedded derivative – We estimate the fair value of the embedded derivative based on the change in the fair value of the assets supporting the funds withheld payable under modco and funds withheld reinsurance agreements. As a result, the fair value of the embedded derivative is classified as Level 2 or 3 based on the valuation methods used for the assets held supporting the reinsurance agreements.

Derivatives – Derivative contracts can be exchange traded or over-the-counter. Exchange-traded derivatives typically fall within Level 1 of the fair value hierarchy depending on trading activity. Over-the-counter derivatives are valued using valuation models or an income approach using third-party broker valuations. Valuation models require a variety of inputs, including contractual terms, market prices, yield curves, credit curves, measures of volatility, prepayment rates and correlation of the inputs. We consider and incorporate counterparty credit risk in the valuation process through counterparty credit rating requirements and monitoring of overall exposure. We also evaluate and include our own nonperformance risk in valuing derivatives. The majority of our derivatives trade in liquid markets; therefore, we can verify model inputs and model selection does not involve significant management judgment. These are typically classified within Level 2 of the fair value hierarchy.

Cash and cash equivalents, including restricted cash – The carrying amount for cash equals fair value. We estimate the fair value for cash equivalents based on quoted market prices. These assets are classified as Level 1.

Interest sensitive contract liabilities embedded derivative – Embedded derivatives related to interest sensitive contract liabilities with fixed indexed annuity products are classified as Level 3. The valuations include significant unobservable inputs associated with economic assumptions and actuarial assumptions for policyholder behavior.

AmerUs Closed Block – We elected the fair value option for the future policy benefits liability in the AmerUs Closed Block. Our valuation technique is to set the fair value of policyholder liabilities equal to the fair value of assets. There is an additional component which captures the fair value of the open block's obligations to the closed block business. This component is the present value of the projected release of required capital and future earnings before income taxes on required capital supporting the AmerUs Closed Block, discounted at a rate which represents a market participant's required rate of return, less the initial required capital. Unobservable inputs include estimates for these items. The AmerUs Closed Block policyholder liabilities and any corresponding reinsurance recoverable are classified as Level 3.

ILICO Closed Block – We elected the fair value option for the ILICO Closed Block. Our valuation technique is to set the fair value of policyholder liabilities equal to the fair value of assets. There is an additional component which captures the fair value of the open block's obligations to the closed block business. This component uses the present value of future cash flows which include commissions, administrative expenses, reinsurance premiums and benefits, and an explicit cost of capital. The discount rate includes a margin to reflect the business and nonperformance risk. Unobservable inputs include estimates for these items. The ILICO Closed Block policyholder liabilities and corresponding reinsurance recoverable are classified as Level 3.

Universal life liabilities and other life benefits – We elected the fair value option for certain blocks of universal and other life business ceded to Global Atlantic. We use a present value of liability cash flows. Unobservable inputs include estimates of mortality, persistency, expenses, premium payments and a risk margin used in the discount rates that reflects the riskiness of the business. These universal life policyholder liabilities and corresponding reinsurance recoverable are classified as Level 3.

Fair Value Option—The following represents the gains (losses) recorded for instruments for which we have elected the fair value option, including related parties:

	Three months ended March 31,	
(In millions)	2020	2019
Trading securities	$ (223)	$ 56
Investment funds	(300)	(4)
Future policy benefits	65	(40)
Total gains (losses)	$ (458)	$ 12

Gains and losses on trading securities are recorded in investment related gains (losses) on the condensed consolidated statements of income (loss). For fair value option mortgage loans, we record interest income in net investment income and subsequent changes in fair value in investment related gains (losses) on the condensed consolidated statements of income (loss). Gains and losses related to investment funds, including related party investment funds, are recorded in net investment income on the condensed consolidated statements of income (loss). We record the change in fair value of future policy benefits to future policy and other policy benefits on the condensed consolidated statements of income (loss).

The following summarizes information for fair value option mortgage loans:

(In millions)	March 31, 2020	December 31, 2019
Unpaid principal balance	$ 23	$ 25
Mark to fair value	3	2
Fair value	$ 26	$ 27

There were no fair value option mortgage loans 90 days or more past due as of March 31, 2020 and December 31, 2019.

Level 3 Financial Instruments—The following tables are reconciliations for all Level 3 assets and liabilities measured at fair value on a recurring basis. All transfers in and out of Level 3 are based on changes in the availability of pricing sources, as described in the valuation methods above.

	Three months ended March 31, 2020							
		Total realized and unrealized gains (losses)						
(In millions)	Beginning balance	Included in income	Included in OCI	Net purchases, issuances, sales and settlements	Net transfers in (out)	Ending balance	Total gains (losses) included in income[1]	Total gains (losses) included in OCI[1]
Assets								
AFS securities								
U.S. state, municipal and political subdivisions	$ 40	$ —	$ (3)	$ —	$ —	$ 37	$ —	$ (3)
Corporate	725	(5)	(33)	33	513	1,233	—	(31)
CLO	121	—	(9)	30	(20)	122	—	(9)
ABS	1,374	22	(119)	(183)	(177)	917	—	(103)
CMBS	46	—	(5)	4	—	45	—	(5)
RMBS	—	—	—	—	42	42	—	—
Trading securities								
Corporate	—	—	—	—	32	32	—	—
CLO	6	(3)	—	—	—	3	(3)	—
ABS	16	—	—	(2)	—	14	—	—
RMBS	52	(1)	—	—	19	70	1	—
Equity securities	3	4	—	—	—	7	4	—
Mortgage loans	27	—	—	(1)	—	26	—	—
Investment funds	22	(1)	—	—	—	21	(1)	—
Funds withheld at interest – embedded derivative	801	(1,175)	—	—	—	(374)	—	—
Short-term investments	41	—	(1)	27	—	67	—	—
Investments in related parties								
AFS securities, ABS	2,324	(3)	(220)	(50)	(164)	1,887	—	(205)
Trading securities								
CLO	38	(16)	—	1	9	32	(24)	—
ABS	711	(101)	—	66	—	676	(101)	—
Equity securities	64	(10)	—	1	(6)	49	(10)	—
Investment funds	132	(300)	—	1,147	—	979	(300)	—
Funds withheld at interest – embedded derivative	594	(609)	—	—	—	(15)	—	—
Reinsurance recoverable	1,821	294	—	—	—	2,115	—	—
Total Level 3 assets	$ 8,958	$ (1,904)	$ (390)	$ 1,073	$ 248	$ 7,985	$ (434)	$ (356)
Liabilities								
Interest sensitive contract liabilities								
Embedded derivative	$ (10,942)	$ 1,177	$ —	$ 676	$ —	$ (9,089)	$ —	$ —
Universal life benefits	(1,050)	(272)	—	—	—	(1,322)	—	—
Future policy benefits								
AmerUs Closed Block	(1,546)	65	—	—	—	(1,481)	—	—
ILICO Closed Block and life benefits	(755)	(23)	—	—	—	(778)	—	—
Derivative liabilities	(3)	(4)	—	—	—	(7)	—	—
Total Level 3 liabilities	$ (14,296)	$ 943	$ —	$ 676	$ —	$ (12,677)	$ —	$ —

[1] *Related to instruments held at end of period.*

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

	Three months ended March 31, 2019							
		Total realized and unrealized gains (losses)						
(In millions)	Beginning balance	Included in income	Included in OCI	Net purchases, issuances, sales and settlements	Net transfers in (out)	Ending balance	Total gains (losses) included in earnings[1]	Total gains (losses) included in OCI[1]
Assets								
AFS securities								
Corporate	$ 898	$ (2)	$ 5	$ 165	$ (31)	$ 1,035	$ —	$ —
CLO	107	—	2	30	(29)	110	—	—
ABS	1,615	3	16	57	(77)	1,614	—	—
CMBS	187	—	2	(6)	(9)	174	—	—
RMBS	56	—	1	—	—	57	—	—
Trading securities								
Corporate	—	—	—	—	10	10	—	—
CLO	1	—	—	—	7	8	1	—
ABS	—	—	—	6	—	6	—	—
RMBS	134	(3)	—	—	(45)	86	2	—
Equity securities	3	—	—	—	—	3	—	—
Mortgage loans	32	—	—	—	—	32	—	—
Investment funds	29	(3)	—	(1)	—	25	(3)	—
Funds withheld at interest – embedded derivative	57	389	—	—	—	446	—	—
Investments in related parties								
AFS securities, ABS	328	—	—	169	—	497	—	—
Trading securities								
CLO	113	(1)	—	(1)	(22)	89	4	—
ABS	149	(11)	—	—	—	138	(11)	—
Equity securities	133	1	—	173	—	307	4	—
Investment funds	120	(1)	—	19	—	138	—	—
Funds withheld at interest – embedded derivative	(110)	324	—	—	—	214	—	—
Reinsurance recoverable	1,676	61	—	—	—	1,737	—	—
Total Level 3 assets	$ 5,528	$ 757	$ 26	$ 611	$ (196)	$ 6,726	$ (3)	$ —
Liabilities								
Interest sensitive contract liabilities								
Embedded derivative	$ (7,969)	$ (1,017)	$ —	$ (120)	$ —	$ (9,106)	$ —	$ —
Universal life benefits	(932)	(47)	—	—	—	(979)	—	—
Future policy benefits								
AmerUs Closed Block	(1,443)	(40)	—	—	—	(1,483)	—	—
ILICO Closed Block and life benefits	(730)	(13)	—	—	—	(743)	—	—
Derivative liabilities	(4)	—	—	—	—	(4)	—	—
Total Level 3 liabilities	$ (11,078)	$ (1,117)	$ —	$ (120)	$ —	$ (12,315)	$ —	$ —

[1] *Related to instruments held at end of period.*

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

The following represents the gross components of purchases, issuances, sales and settlements, net, and net transfers in (out) shown above:

	Three months ended March 31, 2020							
(In millions)	Purchases	Issuances	Sales	Settlements	Net purchases, issuances, sales and settlements	Transfers in	Transfers out	Net transfers in (out)
Assets								
AFS securities								
Corporate	$ 74	$ —	$ (10)	$ (31)	$ 33	$ 548	$ (35)	$ 513
CLO	33	—	—	(3)	30	3	(23)	(20)
ABS	73	—	(14)	(242)	(183)	13	(190)	(177)
CMBS	4	—	—	—	4	—	—	—
RMBS	—	—	—	—	—	42	—	42
Trading securities								
Corporate	—	—	—	—	—	32	—	32
ABS	—	—	(2)	—	(2)	—	—	—
RMBS	—	—	—	—	—	20	(1)	19
Mortgage loans	—	—	—	(1)	(1)	—	—	—
Short-term investments	41	—	—	(14)	27	—	—	—
Investments in related parties								
AFS securities, ABS	5	—	—	(55)	(50)	—	(164)	(164)
Trading securities								
CLO	13	—	(12)	—	1	9	—	9
ABS	66	—	—	—	66	—	—	—
Equity securities	3	—	—	(2)	1	—	(6)	(6)
Investment funds	1,147	—	—	—	1,147	—	—	—
Total Level 3 assets	$ 1,459	$ —	$ (38)	$ (348)	$ 1,073	$ 667	$ (419)	$ 248
Liabilities								
Interest sensitive contract liabilities – embedded derivative	$ —	$ (116)	$ —	$ 792	$ 676	$ —	$ —	$ —
Total Level 3 liabilities	$ —	$ (116)	$ —	$ 792	$ 676	$ —	$ —	$ —

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

	Three months ended March 31, 2019							
(In millions)	Purchases	Issuances	Sales	Settlements	Net purchases, issuances, sales and settlements	Transfers in	Transfers out	Net transfers in (out)
Assets								
AFS securities								
Corporate	$ 238	$ —	$ (1)	$ (72)	$ 165	$ —	$ (31)	$ (31)
CLO	30	—	—	—	30	—	(29)	(29)
ABS	189	—	(33)	(99)	57	19	(96)	(77)
CMBS	—	—	—	(6)	(6)	8	(17)	(9)
Trading securities								
Corporate	—	—	—	—	—	10	—	10
CLO	—	—	—	—	—	7	—	7
ABS	6	—	—	—	6	—	—	—
RMBS	—	—	—	—	—	38	(83)	(45)
Investment funds	—	—	—	(1)	(1)	—	—	—
Investments in related parties								
AFS securities, ABS	170	—	—	(1)	169	—	—	—
Trading securities, CLO	—	—	(1)	—	(1)	—	(22)	(22)
Equity securities	177	—	(4)	—	173	—	—	—
Investment funds	19	—	—	—	19	—	—	—
Total Level 3 assets	$ 829	$ —	$ (39)	$ (179)	$ 611	$ 82	$ (278)	$ (196)
Liabilities								
Interest sensitive contract liabilities – embedded derivative	$ —	$ (233)	$ —	$ 113	$ (120)	$ —	$ —	$ —
Total Level 3 liabilities	$ —	$ (233)	$ —	$ 113	$ (120)	$ —	$ —	$ —

Significant Unobservable Inputs—Significant unobservable inputs occur when we could not obtain or corroborate the quantitative detail of the inputs. This applies to fixed maturity securities, equity securities, mortgage loans and certain derivatives, as well as embedded derivatives in liabilities. Additional significant unobservable inputs are described below.

AFS and trading securities – For certain fixed maturity securities, internal models are used to calculate the fair value. We use a discounted cash flow approach. The discount rate is the significant unobservable input due to the determined credit spread being internally developed, illiquid, or as a result of other adjustments made to the base rate. The base rate represents a market comparable rate for securities with similar characteristics. This excludes assets for which significant unobservable inputs are not developed internally, primarily consisting of broker quotes.

Interest sensitive contract liabilities – embedded derivative – Significant unobservable inputs we use in the fixed indexed annuities embedded derivative of the interest sensitive contract liabilities valuation include:

1. Nonperformance risk – For contracts we issue, we use the credit spread, relative to the U.S. Department of the Treasury (Treasury) curve, based on our public credit rating as of the valuation date. This represents our credit risk for use in the estimate of the fair value of embedded derivatives.
2. Option budget – We assume future hedge costs in the derivative's fair value estimate. The level of option budgets determines the future costs of the options and impacts future policyholder account value growth.
3. Policyholder behavior – We regularly review the lapse and withdrawal assumptions (surrender rate). These are based on our initial pricing assumptions updated for actual experience. Actual experience may be limited for recently issued products.

The following summarizes the unobservable inputs for AFS and trading securities and the embedded derivatives of fixed indexed annuities:

	March 31, 2020						
(In millions, except for percentages)	Fair value	Valuation technique	Unobservable inputs	Minimum	Maximum	Weighted average	Impact of an increase in the input on fair value
AFS and trading securities	$ 3,522	Discounted cash flow	Discount	3.8%	19.0%	7.8% [1]	Decrease
Interest sensitive contract liabilities – fixed indexed annuities embedded derivatives	$ 9,089	Option budget method	Nonperformance risk	1.9%	2.5%	2.3% [2]	Decrease
			Option budget	0.7%	3.7%	1.9% [3]	Increase
			Surrender rate	5.0%	10.4%	7.2% [4]	Decrease

	December 31, 2019						
	Fair value	Valuation technique	Unobservable inputs	Minimum	Maximum	Weighted average	Impact of an increase in the input on fair value
AFS and trading securities	$ 1,289	Discounted cash flow	Discount	3.0%	9.0%	6.6% [1]	Decrease
Interest sensitive contract liabilities – fixed indexed annuities embedded derivatives	$ 10,942	Option budget method	Nonperformance risk	0.2%	1.1%	0.6% [2]	Decrease
			Option budget	0.7%	3.7%	1.9% [3]	Increase
			Surrender rate	3.5%	8.1%	7.1% [4]	Decrease

[1] *The discount weighted average is calculated based on the relative fair values of the securities.*

[2] *The nonperformance risk weighted average is based on the projected excess benefits of reserves used in the calculation of the embedded derivative.*

[3] *The option budget weighted average is calculated based on the indexed account values.*

[4] *The surrender rate weighted average is calculated based on projected account values.*

Fair Value of Financial Instruments Not Carried at Fair Value—The following represents our financial instruments not carried at fair value on the condensed consolidated balance sheets:

	March 31, 2020					
(In millions)	Carrying Value	Fair Value	NAV	Level 1	Level 2	Level 3
Financial assets						
Mortgage loans	$ 14,369	$ 14,948	$ —	$ —	$ —	$ 14,948
Investment funds	583	583	583	—	—	—
Policy loans	403	403	—	—	403	—
Funds withheld at interest	14,090	14,090	—	—	—	14,090
Short-term investments	190	190	—	—	—	190
Other investments	74	74	—	—	—	74
Investments in related parties						
Mortgage loans	623	648	—	—	—	648
Investment funds	3,534	3,534	3,534	—	—	—
Funds withheld at interest	12,467	12,467	—	—	—	12,467
Other investments	475	444	—	—	—	444
Total financial assets not carried at fair value	$ 46,808	$ 47,381	$ 4,117	$ —	$ 403	$ 42,861
Financial liabilities						
Interest sensitive contract liabilities	$ 58,277	$ 58,762	$ —	$ —	$ —	$ 58,762
Short-term debt	400	400	—	—	400	—
Long-term debt	986	903	—	—	903	—
Securities to repurchase	1,294	1,294	—	—	1,294	—
Funds withheld liability	372	372	—	—	372	—
Total financial liabilities not carried at fair value	$ 61,329	$ 61,731	$ —	$ —	$ 2,969	$ 58,762

	December 31, 2019					
(In millions)	Carrying Value	Fair Value	NAV	Level 1	Level 2	Level 3
Financial assets						
Mortgage loans	$ 14,279	$ 14,719	$ —	$ —	$ —	$ 14,719
Investment funds	596	596	596	—	—	—
Policy loans	417	417	—	—	417	—
Funds withheld at interest	14,380	14,380	—	—	—	14,380
Short-term investments	190	190	—	—	—	190
Other investments	65	65	—	—	—	65
Investments in related parties						
Mortgage loans	653	641	—	—	—	641
Investment funds	2,731	2,731	2,731	—	—	—
Funds withheld at interest	12,626	12,626	—	—	—	12,626
Other investments	487	537	—	—	—	537
Total financial assets not carried at fair value	$ 46,424	$ 46,902	$ 3,327	$ —	$ 417	$ 43,158
Financial liabilities						
Interest sensitive contract liabilities	$ 57,272	$ 58,027	$ —	$ —	$ —	$ 58,027
Short-term debt	475	475	—	—	475	—
Long-term debt	992	1,036	—	—	1,036	—
Securities to repurchase	512	512	—	—	512	—
Funds withheld liability	377	377	—	—	377	—
Total financial liabilities not carried at fair value	$ 59,628	$ 60,427	$ —	$ —	$ 2,400	$ 58,027

We estimate the fair value for financial instruments not carried at fair value using the same methods and assumptions as those we carry at fair value. The financial instruments presented above are reported at carrying value on the condensed consolidated balance sheets; however, in the case of policy loans, funds withheld at interest and liability, short-term investments, short-term debt, and securities to repurchase, the carrying amount approximates fair value.

Investment in related parties – Other investments – The fair value of related party other investments is determined using a discounted cash flow model using discount rates for similar investments.

Interest sensitive contract liabilities – The carrying and fair value of interest sensitive contract liabilities above includes fixed indexed and traditional fixed annuities without mortality or morbidity risks, funding agreements and payout annuities without life contingencies. The embedded derivatives within fixed indexed annuities without mortality or morbidity risks are excluded, as they are carried at fair value. The valuation of these investment contracts is based on discounted cash flow methodologies using significant unobservable inputs. The estimated fair value is determined using current market risk-free interest rates, adding a spread to reflect our nonperformance risk and subtracting a risk margin to reflect uncertainty inherent in the projected cash flows.

Long-term debt – We obtain the fair value of long-term debt from commercial pricing services. These are classified as Level 2. The pricing services incorporate a variety of market observable information in their valuation techniques including benchmark yields, trading activity, credit quality, issuer spreads, bids, offers and other reference data.

5. Deferred Acquisition Costs, Deferred Sales Inducements and Value of Business Acquired

The following represents a rollforward of deferred acquisition costs (DAC), deferred sales inducements (DSI) and value of business acquired (VOBA):

(In millions)	DAC	DSI	VOBA	Total
Balance at December 31, 2019	$ 3,274	$ 820	$ 914	$ 5,008
Adoption of accounting standard	12	5	5	22
Additions	112	38	—	150
Amortization	436	(10)	(23)	403
Impact of unrealized investment (gains) losses	489	139	181	809
Balance at March 31, 2020	$ 4,323	$ 992	$ 1,077	$ 6,392

(In millions)	DAC	DSI	VOBA	Total
Balance at December 31, 2018	$ 3,921	$ 799	$ 1,187	$ 5,907
Additions	173	60	—	233
Amortization	(226)	(5)	(5)	(236)
Impact of unrealized investment (gains) losses	(149)	(49)	(87)	(285)
Balance at March 31, 2019	$ 3,719	$ 805	$ 1,095	$ 5,619

6. Debt

Short-term Borrowing—As of March 31, 2020, we had $400 million of short-term debt outstanding with the Federal Home Loan Bank (FHLB) through their variable rate short-term federal funds program. As of March 31, 2020, the borrowings had maturity dates ranging from May 4, 2020 to May 11, 2020 and a weighted average interest rate of 1.80%, with interest due at maturity. In connection with short-term borrowings, the FHLB requires the borrower to purchase member stock and post sufficient collateral to secure the borrowing. See *Note 10 – Commitments and Contingencies* for further discussion regarding existing collateral posting with the FHLB.

Senior Notes—In the second quarter of 2020, AHL issued $500 million of senior unsecured notes due April 3, 2030. The senior notes have a 6.150% coupon rate, payable semi-annually. The senior notes are callable, in whole or in part, at any time prior to January 3, 2030 by AHL, at a price equal to the greater of (1) 100% of the principal and any accrued and unpaid interest and (2) an amount equal to the sum of the present values of remaining scheduled payments, discounted from the scheduled payment date to the redemption date at the Treasury Rate (as defined in the second supplemental indenture, dated April 3, 2020) plus 50 basis points, and any accrued and unpaid interest. Thereafter, the notes are callable, in whole or in part, by AHL at a price equal to 100% of the principal and any accrued and unpaid interest.

7. Earnings Per Share

The following represents our basic and diluted earnings per share (EPS) calculations, which are calculated using unrounded amounts:

	Three months ended March 31, 2020					
(In millions, except share and per share data)	Class A	Class B	Class M-1	Class M-2	Class M-3	Class M-4
Net loss available to Athene Holding Ltd. common shareholders – basic and diluted	$ (938)	$ (98)	$ (13)	$ (3)	$ (4)	$ (9)
Basic weighted average shares outstanding	161.4	25.4	3.3	0.8	1.0	2.4
Dilutive effect of stock compensation plans[1]	—	—	—	—	—	—
Diluted weighted average shares outstanding	161.4	25.4	3.3	0.8	1.0	2.4
Earnings per share						
Basic	$ (5.81)	$ (3.87)	$ (3.87)	$ (3.87)	$ (3.87)	$ (3.87)
Diluted	$ (5.81)	$ (3.87)	$ (3.87)	$ (3.87)	$ (3.87)	$ (3.87)

[1] *The dilutive effect of stock compensation plans is antidilutive as a result of the net loss available to Athene Holding Ltd. common shareholders for the three months ended March 31, 2020.*

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

	Three months ended March 31, 2019					
(In millions, except per share data)	Class A	Class B	Class M-1	Class M-2	Class M-3	Class M-4
Net income available to Athene Holding Ltd. common shareholders – basic and diluted	$ 589	$ 93	$ 12	$ 3	$ 3	$ 8
Basic weighted average shares outstanding	161.3	25.4	3.4	0.8	1.0	2.1
Dilutive effect of stock compensation plans	0.4	—	—	—	—	0.3
Diluted weighted average shares outstanding	161.7	25.4	3.4	0.8	1.0	2.4
Earnings per share						
Basic	$ 3.65	$ 3.65	$ 3.65	$ 3.65	$ 3.65	$ 3.65
Diluted	$ 3.64	$ 3.65	$ 3.65	$ 3.65	$ 3.65	$ 3.15

During the first quarter of 2020, as a result of the closing of the share transaction discussed further in *Note 9 – Related Parties*, we converted outstanding Class B shares to Class A shares and Class M shares were converted to Class A shares and warrants. As a result, the EPS calculation for the first quarter of 2020 uses the weighted average shares for the quarter for all classes to allocate net income; however, for Class B and Class M shares, the weighted average shares outstanding represents only that period of time that the shares were outstanding. The warrants issued as part of the conversion of the Class M shares are evaluated for dilution within the dilutive effect of stock compensation plans.

We use the two-class method for allocating net income available to Athene Holding Ltd. common shareholders to each class of our common stock. Dilutive shares are calculated using the treasury stock method. For Class A shares, this method takes into account shares that can be settled into Class A shares, net of a conversion price. The diluted EPS calculations for Class A shares excluded 11.1 million and 34.8 million shares, restricted stock units, options and warrants as of March 31, 2020 and 2019, respectively.

8. Equity

Preferred Stock—We have two series of preferred stock: 6.35% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, Series A (Series A) and 5.625% Fixed Rate Perpetual Non-Cumulative Preference Shares, Series B (Series B) as summarized below:

	Series A	Series B
Authorized, issued and outstanding	34,500	13,800
Liquidation preference per share	$ 25,000	$ 25,000
Dividends declared and paid per share during the period	$ 396.88	$ 351.56
Aggregate dividends declared and paid during the period (*in millions*)	$ 13	$ 5

Preferred stock dividends are payable on a non-cumulative basis only when, as and if declared, quarterly in arrears on the 30^{th} day of March, June, September and December of each year. Preferred stock ranks senior to our common stock with respect to dividends, to the extent declared, and in liquidation, to the extent of the liquidation preference.

Common Stock—During the first quarter of 2020, shareholders approved amendments to our bye-laws which eliminated our multi-class share structure at closing of the share transaction with Apollo. See *Note 9 – Related Parties* for further information on this transaction. On February 28, 2020, all Class B shares were converted to Class A shares on a one-to-one basis. Class M shares were converted to Class A shares representing 5% of the Class M value and warrants representing 95% of the Class M value. The warrants were issued with substantially the same terms, including the same economic terms, as the Class M shares.

Our bye-laws place certain restrictions on Class A shares such that a holder of Class A shares, except for shareholders permitted by our board of directors, which include members of the Apollo Group, as defined in our bye-laws, cannot control greater than 9.9% of the total outstanding vote and if a holder of Class A shares were to control greater than 9.9%, then a holder's voting power is automatically reduced to 9.9% and the other holders of Class A shares would vote the remainder on a prorated basis.

Share Repurchase Authorization

Our board of directors has approved authorizations of $1,567 million for the repurchase of our Class A shares under our repurchase program. We may repurchase shares in open market transactions, in privately negotiated transactions or otherwise. The size and timing of repurchases will depend on legal requirements, market and economic conditions and other factors, and are solely at our discretion. The program has no expiration date, but may be modified, suspended or terminated by the board at any time.

The following summarizes the activity on our share repurchase authorization:

	Three months ended March 31,	
(In millions)	2020	2019
Beginning balance at January 1	$ 640	$ 150
Repurchases	(319)	(47)
Ending balance at March 31	$ 321	$ 103

The table below shows the changes in each class of shares issued and outstanding:

(In millions)	Three months ended March 31, 2020
Class A	
Beginning balance	143.2
Issued shares	35.9
Forfeited shares	(0.1)
Repurchased shares	(10.4)
Converted from Class B shares	25.4
Converted from Class M shares	0.3
Ending balance	194.3
Class B	
Beginning balance	25.4
Converted to Class A shares	(25.4)
Ending balance	—
Class M-1	
Beginning balance	3.3
Converted to Class A shares	(0.2)
Converted to warrants	(3.1)
Ending balance	—
Class M-2	
Beginning balance	0.8
Converted to Class A shares	0.0
Converted to warrants	(0.8)
Ending balance	—
Class M-3	
Beginning balance	1.0
Converted to Class A shares	0.0
Converted to warrants	(1.0)
Ending balance	—
Class M-4	
Beginning balance	4.0
Converted to Class A shares	(0.1)
Converted to warrants	(3.6)
Repurchased shares	(0.3)
Ending balance	—

Accumulated Other Comprehensive Income (Loss)—The following provides the details of AOCI and changes in AOCI:

(In millions)	Unrealized investment gains (losses) on AFS securities without a credit allowance	Unrealized investment gains (losses) on AFS securities with a credit allowance	DAC, DSI, VOBA and future policy benefits adjustments on AFS securities	Unrealized gains (losses) on hedging instruments	Foreign currency translation and other adjustments	Accumulated other comprehensive income (loss)
Balance at December 31, 2019	$ 3,102	$ —	$ (879)	$ 61	$ (3)	$ 2,281
Adoption of accounting standards	4	(4)	(6)	—	—	(6)
Other comprehensive income (loss) before reclassifications	(5,762)	(273)	1,352	401	9	(4,273)
Less: Reclassification adjustments for gains (losses) realized in net income (loss)[1]	171	—	(15)	—	—	156
Less: Income tax expense (benefit)	(1,128)	(53)	287	97	—	(797)
Less: Other comprehensive income (loss) attributable to NCI	(159)	—	—	(30)	6	(183)
Balance at March 31, 2020	$ (1,540)	$ (224)	$ 195	$ 395	$ —	$ (1,174)

[1] *Recognized in investment related gains (losses) on the condensed consolidated statements of income (loss).*

(In millions)	Unrealized investment gains (losses) on AFS securities	DAC, DSI, VOBA and future policy benefits adjustments on AFS securities	Unrealized gains (losses) on hedging instruments	Foreign currency translation and other adjustments	Accumulated other comprehensive income (loss)
Balance at December 31, 2018	$ (628)	$ 121	$ 39	$ (4)	$ (472)
Other comprehensive income (loss) before reclassifications	1,981	(509)	(8)	—	1,464
Less: Reclassification adjustments for gains (losses) realized in net income (loss)[1]	(7)	2	—	—	(5)
Less: Income tax expense (benefit)	401	(108)	(2)	—	291
Balance at March 31, 2019	$ 959	$ (282)	$ 33	$ (4)	$ 706

[1] *Recognized in investment related gains (losses) on the condensed consolidated statements of income (loss).*

9. Related Parties

Apollo

Current fee structure – Substantially all of our investments are managed by Apollo, which provides direct investment management, asset allocation, mergers and acquisition asset diligence and certain operational support services for our investment portfolio, including investment compliance, tax, legal and risk management support.

During the second quarter of 2019, we entered into the Seventh Amended and Restated Fee Agreement, dated as of June 10, 2019, between us and AGM's subsidiary, Apollo Insurance Solutions Group LP (ISG) (Fee Agreement). Under the Fee Agreement, effective retroactive to January 1, 2019, we pay Apollo:

(1) a base management fee equal to the sum of (i) 0.225% per year of the lesser of (A) the aggregate market value of substantially all of the assets in substantially all of the investment accounts of or relating to us (collectively, the Accounts) on December 31, 2018 of $103.4 billion (Backbook Value) and (B) the aggregate market value of substantially all of the assets in the Accounts at the end of the respective month, plus (ii) 0.15% per year of the amount, if any (Incremental Value), by which the aggregate market value of substantially all of the assets in the Accounts at the end of the respective month exceeds the Backbook Value; plus

(2) with respect to each asset in an Account, subject to certain exceptions, that is managed by Apollo and that belongs to a specified asset class tier (Core, Core Plus, Yield, and High Alpha), a sub-allocation fee as follows, which will, in the case of assets acquired after January 1, 2019, be subject to a cap of 10% of the applicable asset's gross book yield:

(i) 0.065% of the market value of Core assets, which include public investment grade corporate bonds, municipal securities, agency RMBS or CMBS, and obligations of governmental agencies or government sponsored entities that are not expressly backed by the U.S. government;

(ii) 0.13% of the market value of Core Plus assets, which include private investment grade corporate bonds, fixed rate first lien commercial mortgage loans (CML), and certain obligations issued or assumed by financial institutions and determined by Apollo to be "Tier 2 Capital" under Basel III, a set of recommendations for international banking regulations developed by the Bank for International Settlements;

(iii) 0.375% of the market value of Yield assets, which include non-agency RMBS, investment grade CLO, CMBS and other ABS (other than RMBS and CLO), emerging market investments, below investment grade corporate bonds, subordinated debt obligations, hybrid securities or surplus notes issued or assumed by a financial institution, rated preferred equity, residential mortgage loans (RML), bank loans, investment grade infrastructure debt, and floating rate CMLs on slightly transitional or stabilized traditional real estate;

(iv) 0.70% of the market value of High Alpha assets, which include subordinated CML, below investment grade CLO, unrated preferred equity, debt obligations originated by MidCap, CMLs for redevelopment or construction loans or secured by non-traditional real estate, below investment grade infrastructure debt, certain loans originated directly by Apollo (other than MidCap loans), and agency mortgage derivatives; and

(v) 0.00% of the market value of cash and cash equivalents, U.S. treasuries, non-preferred equities and alternatives.

The following represents assets based on the above sub-allocation structure:

(In millions, except percentages)	March 31, 2020	Percent of Total	December 31, 2019	Percent of Total
Core	$ 28,858	23.8%	$ 32,474	25.5%
Core Plus	29,717	24.5%	30,155	23.6%
Yield	44,269	36.4%	48,557	38.0%
High Alpha	5,390	4.4%	5,062	4.0%
Other	13,290	10.9%	11,302	8.9%
Total sub-allocation assets	$ 121,524	100.0%	$ 127,550	100.0%

Additionally, the Fee Agreement provides for a possible payment by Apollo to us, or a possible payment by us to Apollo, equal to 0.025% of the Incremental Value as of the end of each year, beginning on December 31, 2019, depending upon the percentage of our investments that consist of Core and Core Plus assets. If more than 60% of our invested assets that are subject to the sub-allocation fees are invested in Core and Core Plus assets, we will receive a 0.025% fee reduction on the Incremental Value. If less than 50% of our invested assets that are subject to the sub-allocation fee are invested in Core and Core Plus assets, we will pay an additional fee of 0.025% on Incremental Value.

During the three months ended March 31, 2020 and 2019, we incurred management fees, inclusive of the base and sub-allocation fees, of $128 million and $92 million, respectively. Management fees are included within net investment income on the condensed consolidated statements of income (loss). As of March 31, 2020 and December 31, 2019, management fees payable were $43 million and $42 million, respectively, and are included in other liabilities on the condensed consolidated balance sheets.

Investment management agreement (IMA) termination – Our bye-laws currently provide that we may not, and will cause our subsidiaries not to, terminate any IMA among us or any of our subsidiaries, on the one hand, and a member of the Apollo Group (as defined in our bye-laws), on the other hand, other than on June 4, 2023 or any two year anniversary of such date (each such date, an IMA Termination Election Date) and any termination on an IMA Termination Election Date requires (i) the approval of two-thirds of our Independent Directors (as defined in the bye-laws) and (ii) prior written notice to the applicable Apollo subsidiary of such termination at least 30 days, but not more than 90 days, prior to an IMA Termination Election Date. If our Independent Directors make such election to terminate and notice of such termination is delivered, the termination will be effective no earlier than the second anniversary of the applicable IMA Termination Election Date (IMA Termination Effective Date). Notwithstanding the foregoing, (A) except as set forth in clause (B) below, our board of directors may only elect to terminate an IMA on an IMA Termination Election Date if two-thirds of our Independent Directors determine, in their sole discretion and acting in good faith, that either (i) there has been unsatisfactory long-term performance materially detrimental to us by the applicable Apollo subsidiary or (ii) the fees being charged by the applicable Apollo subsidiary are unfair and excessive compared to a comparable asset manager (provided, that in either case such Independent Directors must deliver notice of any such determination to the applicable Apollo subsidiary and the applicable Apollo subsidiary will have until the applicable IMA Termination Effective Date to address such concerns, and provided, further, that in the case of such a determination that the fees being charged by the applicable Apollo subsidiary are unfair and excessive, the applicable Apollo subsidiary has the right to lower its fees to match the fees of such comparable asset manager) and (B) upon the determination by two-thirds of our Independent Directors, we or our subsidiaries may also terminate an IMA with the applicable Apollo subsidiary, on a date other than an IMA Termination Effective Date, as a result of either (i) a material violation of law relating to the applicable Apollo subsidiary's advisory business, or (ii) the applicable Apollo subsidiary's gross negligence, willful misconduct or reckless disregard of its obligations under the relevant agreement, in each case of this clause (B), that is materially detrimental to us, and in either case of this clause (B), subject to the delivery of written notice at least 30 days prior to such termination; provided, that in connection with an event described in clause (B)(i) or (B)(ii), the applicable Apollo subsidiary shall have the right to dispute such determination of the Independent Directors within 30 days after receiving notice from us of such determination, in which case the matter will be submitted to binding arbitration and such IMA shall continue to remain in effect during the period of the arbitration (the events described in the foregoing clauses (A) and (B) are referred to in more detail in our bye-laws as "AHL Cause").

Governance – We have a management investment committee, which includes members of our senior management and reports to the risk committee of our board of directors. The committee focuses on strategic decisions involving our investment portfolio, such as approving investment limits, new asset classes and our allocation strategy, reviewing large asset transactions, as well as monitoring our credit risk, and the management of our assets and liabilities.

A significant voting interest in the Company is held by shareholders who are members of the Apollo Group. Also, James Belardi, our Chief Executive Officer, is an employee of ISG and receives remuneration from acting as Chief Executive Officer of ISG. Mr. Belardi also owns a 5% profit interest in ISG (Interest). It is expected that the Interest will be revised such that Mr. Belardi will receive a lesser interest in the equity of ISG and also receive a specified percentage of other fee streams earned by Apollo, potentially comprised of or including the sub-allocation fees. Additionally, six of the fifteen members of our board of directors are employees of or consultants to Apollo (including Mr. Belardi). In order to protect against potential conflicts of interest resulting from transactions into which we have entered and will continue to enter into with the Apollo Group, our bye-laws require us to maintain a conflicts committee comprised solely of directors who are not officers or employees of any member of the Apollo Group. The conflicts committee reviews and approves material transactions between us and the Apollo Group, subject to certain exceptions.

Other related party transactions

A-A Mortgage Opportunities, L.P. (*A-A Mortgage)* – We have an equity method investment of $508 million and $487 million as of March 31, 2020 and December 31, 2019, respectively, in A-A Mortgage, which has an investment in AmeriHome. We have a loan purchase agreement with AmeriHome. The agreement allows us to purchase residential mortgage loans which AmeriHome has purchased from correspondent sellers and pooled for sale in the secondary market. AmeriHome retains the servicing rights to the sold loans. We purchased $169 million and $0 million of residential mortgage loans under this agreement during the three months ended March 31, 2020 and 2019, respectively. Additionally, we hold ABS securities issued by AmeriHome affiliates of $164 million and $170 million as of March 31, 2020 and December 31, 2019, respectively, which are included in related party AFS securities on the condensed consolidated balances sheets. We also have commitments to make additional equity investments in A-A Mortgage of $169 million as of March 31, 2020.

MidCap – AAA Investment (Co Invest VII), L.P. (CoInvest VII) holds a significant investment in MidCap, which was $508 million and $547 million as of March 31, 2020 and December 31, 2019, respectively. CoInvest VII is included in related party investment funds on the condensed consolidated balance sheets and was reflected as a consolidated VIE in prior periods. We have also advanced amounts under a subordinated debt facility to Midcap and, as of March 31, 2020 and December 31, 2019, the principal balance was $345 million and, net of discounts and allowances, was $330 million and $339 million, respectively, which is included in other related party investments on the condensed consolidated balance sheets. Our total investment in MidCap, including amounts advanced under credit facilities, was $838 million and $886 million as of March 31, 2020 and December 31, 2019, respectively. Additionally, we hold ABS and CLO securities issued by MidCap affiliates of $524 million and $624 million as of March 31, 2020 and December 31, 2019, respectively, which are included in related party AFS securities on the condensed consolidated balance sheets.

Athora – We have a cooperation agreement with Athora, pursuant to which, among other things, (1) for a period of 30 days from the receipt of notice of a cession, we have the right of first refusal to reinsure (i) up to 50% of the liabilities ceded from Athora's reinsurance subsidiaries to Athora Life Re Ltd. and (ii) up to 20% of the liabilities ceded from a third party to any of Athora's insurance subsidiaries, subject to a limitation in the aggregate of 20% of Athora's liabilities, (2) Athora agreed to cause its insurance subsidiaries to consider the purchase of certain funding agreements and/or other spread instruments issued by our insurance subsidiaries, subject to a limitation that the fair market value of such funding agreements purchased by any of Athora's insurance subsidiaries may generally not exceed 3% of the fair market value of such subsidiary's total assets, (3) we provide Athora with a right of first refusal to pursue acquisition and reinsurance transactions in Europe (other than the UK) and (4) Athora provides us and our subsidiaries with a right of first refusal to pursue acquisition and reinsurance transactions in North America and the UK. Notwithstanding the foregoing, pursuant to the cooperation agreement, Athora is only required to use its reasonable best efforts to cause its subsidiaries to adhere to the provisions set forth in the cooperation agreement and therefore Athora's ability to cause its subsidiaries to act pursuant to the cooperation agreement may be limited by, among other things, legal prohibitions or the inability to obtain the approval of the board of directors or other applicable governing body of the applicable subsidiary, which approval is solely at the discretion of such governing body. As of March 31, 2020, we have not exercised our right of first refusal to reinsure liabilities ceded to Athora's insurance or reinsurance subsidiaries.

Our investment in Athora, which is included in related party investment funds on the condensed consolidated balance sheets, was $130 million and $132 million as of March 31, 2020 and December 31, 2019, respectively. Additionally, as of March 31, 2020 and December 31, 2019, we had $110 million and $146 million, respectively, of funding agreements outstanding to Athora. During the first quarter of 2020, Athora called capital and we remitted $361 million to Athora. We did not receive shares from Athora until April 1, 2020; therefore, we recorded a receivable in other assets on the consolidated balance sheets as of March 31, 2020 for the capital funding. We also have commitments to make additional equity investments in Athora of $364 million as of March 31, 2020.

Venerable – We have coinsurance and modco agreements with Venerable Insurance and Annuity Company (VIAC, formerly Voya Insurance and Annuity Company). VIAC is a related party due to our minority equity investment in its holding company's parent, VA Capital Company LLC (VA Capital), which was $110 million and $99 million as of March 31, 2020 and December 31, 2019, respectively. The minority equity investment in VA Capital is included in related party investment funds on the condensed consolidated balance sheets and accounted for as an equity method investment. VA Capital is owned by a consortium of investors, led by affiliates of AGM, Crestview Partners and Reverence Capital Partners, and is the parent of Venerable, which is the parent of VIAC. Additionally, we have a 15-year term loan receivable from Venerable due in 2033, which is included in related party other investments on the condensed consolidated balance sheets. The loan is held at the principal balance less allowances and was $145 million and $148 million as of March 31, 2020 and December 31, 2019, respectively. While management views the overall transactions with Venerable as favorable to us, the stated interest rate of 6.257% on the term loan to Venerable represents a below-market interest rate, and management considered such rate as part of its evaluation and pricing of the reinsurance transactions.

Strategic Partnership – On October 24, 2018, we entered into an agreement pursuant to which we may invest up to $2.5 billion over three years in funds managed by Apollo entities (Strategic Partnership). This arrangement is intended to permit us to invest across the Apollo alternatives platform into credit-oriented, strategic and other alternative investments in a manner and size that is consistent with our existing investment strategy. Fees for such investments payable by us to Apollo would be more favorable to us than market rates, and consistent with our existing alternative investments, investments made under the Strategic Partnership require approval of ISG and remain subject to our existing governance processes, including approval by our conflicts committee where applicable. As of March 31, 2020 and December 31, 2019, we had $162 million and $97 million, respectively, of investments under the Strategic Partnership and these investments are included in related party investment funds on the condensed consolidated balance sheets and were reflected as consolidated VIEs in prior periods.

PK AirFinance – During the fourth quarter of 2019, we and Apollo purchased PK AirFinance (PK), an aviation lending business, including PK's in force loan portfolio (Aviation Loans), from the Aviation Services Unit of GE Capital (GE). The Aviation Loans are generally fully secured by aircraft leases and aircraft. In connection with such transaction, Apollo acquired the PK loan origination platform, including personnel and systems and, pursuant to certain agreements entered into between us, Apollo, and certain entities managed by Apollo (collectively, PK Transaction Agreements), the existing Aviation Loans were acquired and securitized by a newly formed SPV for which Apollo acts as ABS manager (ABS-SPV). The ABS-SPV issued tranches of senior notes and subordinated notes, which are secured by the Aviation Loans.

In connection with the acquisition of the existing Aviation Loans by the ABS-SPV (i) a tranche of senior notes was acquired by third-party investors and (ii) we purchased mezzanine tranches of the senior notes and the subordinated notes. As of March 31, 2020 and December 31, 2019, our investment in securitizations of loans originated by PK was $1,141 million and $1,282 million, respectively, and are included in related party AFS or trading securities on the condensed consolidated balance sheets.

In addition to the investment in the senior notes and subordinated notes, we also have a right to acquire, whether directly, through the ABS-SPV or through a similar vehicle, all Aviation Loans originated by PK (Forward Flow Loans). All servicing and administrative costs and expenses of Apollo (determined at cost, without mark-up) that are incurred in connection with the sourcing, origination, servicing and maintaining the Forward Flow Loans, net of any service fees and servicing and administrative cost and expense reimbursement amounts received directly from the ABS-SPV or other entities investing in the Forward Flow Loans are allocated to, and reimbursed by the ABS-SPV or us, as applicable, subject to an agreed-upon annual cap.

In addition to the payment of the expenses described in the preceding paragraph and the base management fee paid to Apollo on all assets managed by Apollo, we have paid or expect to pay the following fees to Apollo or certain service providers that are affiliates of, or are companies managed by, Apollo in connection with the PK Transaction Agreements:

(A) To Apollo, sub-allocation fees on the senior notes based on the rates applicable to Yield assets and sub-allocation fees on the subordinated notes based on the rates applicable to High Alpha assets.

(B) To Redding Ridge Asset Management LLC, a company in which certain funds managed by Apollo have an interest, as consideration for assistance with the structuring, monitoring, support and maintenance of the securitization transactions, a one-time structuring fee, as well as ongoing support fees equal to 1.5 bps on the total capitalization amount and certain other fees, which may become due upon the occurrence of certain events; and

(C) To Merx Aviation Servicing Limited, a company externally managed by Apollo Investment Management, L.P., with respect to certain diligence, technical support and enforcement, remarketing and restructuring services with respect to the existing Aviation Loans and the Forward Flow Loans, a one-time servicing fee, as well as certain special situations fees, which may become due upon the occurrence of certain events.

Apollo/Athene Dedicated Investment Program (ADIP) – Our subsidiary, Athene Co-Invest Reinsurance Affiliate 1A Ltd. (together with its subsidiaries, ACRA) is partially owned by ADIP, which is managed by AGM. As of March 31, 2020, ADIP owned 67% of the equity interests, while we retained 100% of the voting power and 33% of the equity interests in ACRA. During the first quarter of 2020, we received capital of $240 million from and paid a dividend of $46 million to ADIP. On April 1, 2020, ALRe purchased 14,000 newly issued ACRA shares for $66 million, which resulted in ALRe holding 36.55% of the economic interests in ACRA. The remaining 63.45% of the economic interests in ACRA are held by ADIP.

Apollo Share Exchange and Related Transactions – On February 28, 2020, we closed a strategic transaction with AGM and certain affiliates of AGM which collectively comprise the Apollo Operating Group (AOG), pursuant to which we sold 27,959,184 newly issued Class A common shares to the AOG for an investment in Apollo of 29,154,519 newly issued AOG units valued at $1.1 billion and we sold 7,575,758 newly issued Class A common shares to the AOG for $350 million. Pursuant to the underlying transaction agreements, among other things (1) AGM has the right to purchase additional Class A common shares until August 26, 2020 to the extent AOG and certain affiliates, employees and consultants of AGM do not beneficially own at least 35% of the issued and outstanding Class A common shares (inclusive of Class A common shares over which any such persons have a valid proxy), on a fully diluted basis, in a number to achieve such 35% ownership level at a price based upon a weighted average price during the 30 days prior to the exercise of the purchase right and (2) Apollo Management Holdings, L.P. (AMH) has the right to purchase up to that number of Class A common shares that would increase by 5 percentage points the percentage of the issued and outstanding Class A common shares beneficially owned by the AOG and certain affiliates, employees and consultants of AGM (inclusive of Class A common shares over which any such persons have a valid proxy), calculated on a fully diluted basis. In connection with the closing of the transaction, we made certain amendments to our bye-laws which, among other things, eliminated our current multi-class share structure.

Concurrently with our entry into the transaction agreements, AMH, James Belardi, our Chief Executive Officer, and William Wheeler, our President (each an “Other Shareholder”), entered into a voting agreement, pursuant to which each Other Shareholder irrevocably appointed AMH as its proxy and attorney-in-fact (Proxy) to vote all of such Other Shareholder’s Class A common shares at any meeting of our shareholders occurring following the closing date and in connection with any written consent of our shareholders following the closing date. The Proxy will be of no force and effect if Apollo and certain affiliates thereof cease to hold some minimum level of ownership not to exceed 7.5% of our Class A common shares.

AA Infrastructure Fund 1 LLC (AA Infrastructure) – We have an investment in preferred shares of AA Infrastructure, which is a fund managed by ISG. As of March 31, 2020 and December 31, 2019, we held $49 million and $58 million, respectively, of preferred shares, which are included in related party equity securities on the consolidated balance sheets and also held AA Infrastructure ABS securities of $284 million and $267 million, respectively, which are included in related party trading securities on the consolidated balance sheets.

10. Commitments and Contingencies

Contingent Commitments—We had commitments to make investments, primarily capital contributions to investment funds, inclusive of related party commitments discussed previously, of $4,939 million and $4,793 million as of March 31, 2020 and December 31, 2019, respectively. We expect most of our current commitments will be invested over the next five years; however, these commitments could become due any time upon counterparty request.

Funding Agreements—We are a member of the FHLB and, through membership, we have issued funding agreements to the FHLB in exchange for cash advances. As of March 31, 2020 and December 31, 2019, we had $1,426 million and $1,226 million, respectively, of FHLB funding agreements outstanding. We are required to provide collateral in excess of the funding agreement amounts outstanding, considering any discounts to the securities posted and prepayment penalties.

We have a funding agreement backed notes (FABN) program, which allows Athene Global Funding, a special-purpose, unaffiliated statutory trust, to offer its senior secured medium-term notes. Athene Global Funding uses the net proceeds from each sale to purchase one or more funding agreements from us. As of March 31, 2020 and December 31, 2019, we had $4,325 million and $3,700 million, respectively, of FABN funding agreements outstanding. We had $5,375 million of remaining FABN capacity as of March 31, 2020.

Pledged Assets and Funds in Trust (Restricted Assets)—The total restricted assets included on the condensed consolidated balance sheets are as follows:

(In millions)	March 31, 2020	December 31, 2019
AFS securities	$ 8,877	$ 9,369
Trading securities	46	45
Equity securities	16	22
Mortgage loans	2,964	2,535
Investment funds	7	84
Derivative assets	60	105
Short-term investments	101	92
Other investments	93	88
Restricted cash	564	402
Total restricted assets	$ 12,728	$ 12,742

The restricted assets are primarily related to reinsurance trusts established in accordance with coinsurance agreements, and the FHLB funding agreements described above.

Letter of Credit—We have an undrawn letter of credit for $188 million as of March 31, 2020. This letter of credit was issued for our reinsurance program and expires by December 31, 2020.

Litigation, Claims and Assessments

Corporate-owned Life Insurance (COLI) Matter – In 2000 and 2001, two insurance companies, which were subsequently merged into Athene Annuity and Life Company (AAIA), purchased broad based variable COLI policies from American General Life Insurance Company (American General) that, as of March 31, 2020, had an asset value of $382 million, and is included in other assets on the condensed consolidated balance sheets. In January 2012, the COLI policy administrator delivered to AAIA a supplement to the existing COLI policies and advised that American General and ZC Resource Investment Trust (ZC Trust) had unilaterally implemented changes set forth in the supplement that, if effective, would: (1) potentially negatively impact the crediting rate for the policies and (2) change the exit and surrender protocols set forth in the policies. In March 2013, AAIA filed suit against American General, ZC Trust, and ZC Resource LLC in Chancery Court in Delaware, seeking, among other relief, a declaration that the changes set forth in the supplement were ineffectual and in breach of the parties' agreement. The parties filed cross motions for judgment as a matter of law, and the court granted defendants' motion and dismissed without prejudice on ripeness grounds. The issue that negatively impacts the crediting rate for one of the COLI policies has subsequently been triggered and, on April 3, 2018, we filed suit against the same defendants in Chancery Court in Delaware seeking substantially similar relief. Defendants moved to dismiss and the court heard oral arguments on February 13, 2019. The court issued an opinion on July 31, 2019 that did not address the merits, but found that the Chancery Court did not have jurisdiction over our claims and directed us to either amend our complaint or transfer the matter to Delaware Superior Court. The matter has been transferred to the Delaware Superior Court. Defendants renewed their motion to dismiss and the Superior Court heard oral arguments on December 18, 2019. The Superior Court took the matter under advisement and we expect an opinion in the next few months. If the supplement is ultimately deemed to be effective, the purported changes to the policies could impair AAIA's ability to access the value of guarantees associated with the policies. The value of the guarantees included within the asset value reflected above is $202 million as of March 31, 2020.

Regulatory Matters – Beginning in 2015, our U.S. insurance subsidiaries have experienced increased complaints related to the conversion and administration of the block of life insurance business acquired in connection with our acquisition of Aviva USA and reinsured to affiliates of Global Atlantic. The life insurance policies included in this block have been and are currently being administered by AllianceOne Inc. (AllianceOne), a subsidiary of DXC Technology Company, which was retained by such Global Atlantic affiliates to provide third party administration services on such policies. AllianceOne also administers a small block of annuity policies that were on Aviva USA's legacy policy administration systems that were also converted in connection with the acquisition of Aviva USA and have experienced some similar service and administration issues, but on a reduced scale.

As a result of the difficulties experienced with respect to the administration of such policies, we have received notifications from several state regulators, including but not limited to New York State Department of Financial Services (NYSDFS), the California Department of Insurance (CDI) and the Texas Department of Insurance, indicating, in each case, that the respective regulator planned to undertake a market conduct examinations or enforcement proceeding of the applicable U.S. insurance subsidiary relating to the treatment of policyholders subject to our reinsurance agreements with affiliates of Global Atlantic and the conversion of the life and annuity policies, including the administration of such blocks by AllianceOne. We have entered into consent orders with several states, including the NYSDFS, to resolve underlying matters in those states. All fines and costs, including those associated with remediation plans, paid in connection with the consent orders are subject to indemnification by Global Atlantic or affiliates of Global Atlantic. Global Atlantic is currently in negotiation with the CDI to resolve the pending joint action related to the converted life insurance policies.

In addition to the examinations and proceedings initiated to date, it is possible that other regulators may pursue similar formal examinations, inquiries or enforcement proceedings and that any examinations, inquiries and/or enforcement proceedings may result in fines, administrative penalties and payments to policyholders. While we do not expect the amount of any such fines, penalties or payments arising from these matters to be material to our financial condition, results of operations or cash flows, it is possible that such amounts could be material.

Pursuant to the terms of the reinsurance agreements between us and the relevant affiliates of Global Atlantic, the applicable affiliates of Global Atlantic have financial responsibility for the ceded life block and are subject to significant administrative service requirements, including compliance with applicable law. The agreements also provide for indemnification to us, including for administration issues.

On January 23, 2019, we received a letter from the NYSDFS, with respect to a pension risk transfer (PRT) transaction, which expressed concerns with our interpretation and reliance upon certain exemptions from licensing in New York in connection with certain activities performed by employees in our PRT channel, including specific activities performed within New York. On April 13, 2020, we entered into a consent order with the NYSDFS to resolve this matter. Pursuant to the consent order, the NYSDFS imposed a fine of $45 million, which was accrued in other liabilities on the consolidated balance sheets as of December 31, 2019.

Caldera Matters – On May 3, 2018, AHL filed a writ commencing litigation in the Supreme Court of Bermuda against a former officer of AHL, a former director of AHL (who is also considered a former officer pursuant to Bermuda law), and Caldera Holdings, Ltd. (Caldera). AHL alleges in the writ, among other things, that the defendants breached various duties owed to AHL under Bermuda law by using AHL's confidential information in their attempted acquisition of a company referred to in the litigation as Company A. AHL is seeking injunctive relief and damages. Athene amended its writ on October 16, 2018. The trial court denied two separate motions to dismiss made by defendant Caldera on June 28, 2018 and by the former officer and former director defendants on January 14, 2019. On September 20, 2019, the Bermuda Court of Appeal affirmed both trial court rulings and dismissed the defendants' appeal. Defendants have not further pursued an appeal of this decision to the Judicial Committee of the Privy Council, the court of final appeal for matters litigated in Bermuda. On March 17, 2020, we filed an application for leave to amend the complaint to more broadly assert defendants' breaches of duties.

On May 3, 2018, following AHL's filing of the writ in Bermuda described above, Caldera, Caldera Life Reinsurance Company, and Caldera Shareholder, L.P., commenced an action in the Supreme Court of the State of New York, County of New York, by filing a Summons with Notice against AHL, Apollo, certain affiliates of Apollo and Leon Black, a founder of Apollo. On July 12, 2018, plaintiffs filed a complaint alleging claims for tortious interference with prospective business relations, defamation, and unfair competition related to plaintiffs' attempt to purchase Company A and seeking alleged damages of "no less than $1.5 billion." AHL has moved to dismiss the complaint. On January 21, 2019, plaintiffs filed an amended complaint, which revised certain allegations about jurisdiction, venue and the merits of the plaintiffs' claims. We have renewed our motion to dismiss and, on December 20, 2019, the court granted our motion to dismiss. Plaintiffs have filed an appeal. We believe we have meritorious defenses to the claims and intend to vigorously defend the litigation. In light of the inherent uncertainties involved in this matter, reasonably possible losses, if any, cannot be estimated at this time.

11. Segment Information

We operate our core business strategies out of one reportable segment, Retirement Services. In addition to Retirement Services, we report certain other operations in Corporate and Other.

Retirement Services—Retirement Services is comprised of our U.S. and Bermuda operations, which issue and reinsure retirement savings products and institutional products. Retirement Services has retail operations, which provide annuity retirement solutions to our policyholders. Retirement Services also has reinsurance operations, which reinsure multi-year guaranteed annuities, fixed indexed annuities, traditional one-year guarantee fixed deferred annuities, immediate annuities and institutional products from our reinsurance partners. In addition, our institutional operations, including funding agreements and group annuities, are included in our Retirement Services segment.

Corporate and Other—Corporate and Other includes certain other operations related to our corporate activities such as corporate allocated expenses, merger and acquisition costs, debt costs, preferred stock dividends, certain integration and restructuring costs, certain stock-based compensation and intersegment eliminations. In addition, we also hold capital in excess of the level of capital we hold in Retirement Services to support our operating strategy.

Financial Measures—Segment adjusted operating income available to common shareholders is an internal measure used by the chief operating decision maker to evaluate and assess the results of our segments.

Adjusted operating revenue is a component of adjusted operating income available to common shareholders and excludes market volatility and adjustments for other non-operating activity. Our adjusted operating revenue equals our total revenue, adjusted to eliminate the impact of the following non-operating adjustments:

- Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets;
- Investment gains (losses), net of offsets; and
- VIE expenses, noncontrolling interests and other adjustments to revenues.

The table below reconciles segment adjusted operating revenues to total revenues presented on the condensed consolidated statements of income (loss):

	Three months ended March 31,	
(In millions)	2020	2019
Retirement Services	$ 2,469	$ 3,306
Corporate and Other	(330)	32
Non-operating adjustments		
Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets	(1,671)	940
Investment gains (losses), net of offsets	(1,685)	713
VIE expenses, noncontrolling interest and other adjustments to revenues	(332)	4
Total revenues	$ (1,549)	$ 4,995

ATHENE HOLDING LTD.
Notes to Condensed Consolidated Financial Statements *(Unaudited)*

Adjusted operating income available to common shareholders is an internal measure used to evaluate our financial performance excluding market volatility and expenses related to integration, restructuring, stock compensation and certain other expenses. Our adjusted operating income available to common shareholders equals net income available to Athene Holding Ltd. common shareholders adjusted to eliminate the impact of the following non-operating adjustments:

- Investment gains (losses), net of offsets;
- Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets;
- Integration, restructuring and other non-operating expenses;
- Stock-based compensation, excluding the long-term incentive plan (LTIP); and
- Income tax (expense) benefit – non-operating.

The table below reconciles segment adjusted operating income available to common shareholders to net income available to Athene Holding Ltd. common shareholders presented on the condensed consolidated statements of income (loss):

	Three months ended March 31,	
(In millions)	2020	2019
Retirement Services	$ 204	$ 286
Corporate and Other	(312)	1
Non-operating adjustments		
Investment gains (losses), net of offsets	(1,139)	458
Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets	65	(27)
Integration, restructuring and other non-operating expenses	(4)	(1)
Stock-based compensation, excluding LTIP	(10)	(3)
Income tax (expense) benefit – non-operating	131	(6)
Net income (loss) available to Athene Holding Ltd. common shareholders	$ (1,065)	$ 708

The following represents total assets by segment:

(In millions)	March 31, 2020	December 31, 2019
Retirement Services	$ 139,097	$ 143,881
Corporate and Other	3,082	2,994
Total assets	$ 142,179	$ 146,875

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Index to Management’s Discussion and Analysis of Financial Condition and Results of Operations

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

We are a leading retirement services company that issues, reinsures and acquires retirement savings products designed for the increasing number of individuals and institutions seeking to fund retirement needs. We generate attractive financial results for our policyholders and shareholders by combining our two core competencies of (1) sourcing long-term, generally illiquid liabilities and (2) investing in a high-quality investment portfolio, which takes advantage of the illiquid nature of our liabilities. Our steady and significant base of earnings generates capital that we opportunistically invest across our business to source attractively-priced liabilities and capitalize on opportunities.

We have established a significant base of earnings and, as of March 31, 2020, have an expected annual net investment spread for our Retirement Services segment, which measures our investment performance less the total cost of our liabilities, of 1–2% over the 9.3 year weighted-average life of our reserve liabilities. The weighted-average life includes deferred annuities, PRT group annuities, funding agreements, payout annuities and other products.

We operate our core business strategies out of one reportable segment, Retirement Services. In addition to Retirement Services, we report certain other operations in Corporate and Other. Retirement Services is comprised of our U.S. and Bermuda operations which issue and reinsure retirement savings products and institutional products. Corporate and Other includes certain other operations related to our corporate activities.

Our consolidated annualized ROE for the three months ended March 31, 2020 and the year ended December 31, 2019 was (36.5)% and 19.7%, respectively, and our consolidated annualized adjusted operating ROE was (4.4)% and 14.1%, respectively. For the three months ended March 31, 2020 and the year ended December 31, 2019, in our Retirement Services segment, we generated an annualized net investment spread of 1.03% and 1.50%, respectively, and an annualized adjusted operating ROE of 10.6% and 17.3%, respectively. Our Retirement Services segment generated an annualized investment margin on deferred annuities of 2.13% and 2.46% for the three months ended March 31, 2020 and the year ended December 31, 2019, respectively. As of March 31, 2020, our deferred annuities had a weighted-average life of 8.7 years and made up a significant portion of our reserve liabilities.

The following table presents the deposits generated from our organic and inorganic channels:

	Three months ended March 31,	
(In millions)	2020	2019
Retail sales	$ 1,246	$ 1,816
Flow reinsurance	861	1,020
Funding agreements	823	—
Pension risk transfer	1,017	1,923
Net deposits	$ 3,947	$ 4,759

Our organic channels, including retail, flow reinsurance and institutional products, provided deposits of $3.9 billion and $4.8 billion in the three months ended March 31, 2020 and 2019, respectively. Withdrawals on our deferred annuities, maturities of our funding agreements, payments on payout annuities and pension risk benefit payments (collectively, liability outflows), in the aggregate, were $2.7 billion and $2.8 billion for the three months ended March 31, 2020 and 2019, respectively. We believe that our credit profile, our current product offerings and product design capabilities as well as our growing reputation as both a seasoned funding agreement issuer and a reliable PRT counterparty will continue to enable us to grow our existing organic channels and allow us to source additional volumes of profitably underwritten liabilities in various market environments. We plan to continue to grow organically by expanding each of our retail, flow reinsurance and institutional distribution channels. We believe that we have the right people, infrastructure and scale to position us for continued growth.

Within our retail channel, we had fixed annuity sales of $1.2 billion and $1.8 billion for the three months ended March 31, 2020 and 2019, respectively. The decrease in our retail channel was primarily driven by competitive positioning and our disciplined approach to pricing and maintaining targets in a low interest rate environment. We aim to grow our retail channel by deepening our relationships with our approximately 50 independent marketing organizations (IMO); approximately 51,000 independent agents; and our growing network of 92 small and mid-sized banks and 13 regional broker-dealers. Our strong financial position and capital efficient products allow us to be dependable partners with IMOs, banks and broker-dealers as well as consistently write new business. We expect our retail channel to continue to benefit from our credit profile and recent product launches. We believe this should support growth in sales at our desired cost of funds through increased volumes via current IMOs, while also allowing us to continue to expand our bank and broker-dealer channels. Additionally, we are focusing on hiring and training a specialized sales force and creating products to capture new potential distribution opportunities.

In our flow reinsurance channel, we target reinsurance business consistent with our preferred liability characteristics and, as such, flow reinsurance provides another opportunistic channel for us to source liabilities with attractive crediting rates. We generated deposits through our flow reinsurance channel of $861 million and $1.1 billion for the three months ended March 31, 2020 and 2019, respectively. The decrease in our flow reinsurance channel from prior year was driven by the competitive positioning while maintaining rate discipline in a low interest rate environment, while prior year benefited from a rising interest rate environment. We expect that our credit profile and our reputation as a solutions provider will help us continue to source additional reinsurance partners, which will further diversify our flow reinsurance channel.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Within our institutional channel, we generated deposits of $1.8 billion and $1.9 billion for the three months ended March 31, 2020 and 2019, respectively. The slight decrease in our institutional channel is driven by lower PRT deposits being largely offset by higher funding agreement deposits. During the three months ended March 31, 2020, we closed one PRT transaction and issued group annuity contracts in the aggregate principal amount of $1.0 billion, compared to $1.9 billion during the three months ended March 31, 2019. Since entering the PRT channel in 2017 through March 31, 2020, we have closed 17 deals involving more than 178,000 plan participants resulting in the issuance of group annuities of $11.9 billion. We issued funding agreements in the aggregate principal amount of $823 million and $0 million for the three months ended March 31, 2020 and three months ended March 31, 2019, respectively. We expect to grow our institutional channel by continuing to engage in PRT transactions and opportunistic issuances of funding agreements.

Our inorganic channel has contributed significantly to our growth through both acquisitions and block reinsurance transactions. We expect that our inorganic channels will continue to be important sources of profitable growth in the future. We believe our internal transactions team, with support from Apollo, has an industry-leading ability to source, underwrite and expeditiously close transactions. With support from Apollo, we are a solutions provider with a proven track record of closing transactions, which we believe makes us the ideal partner to insurance companies seeking to restructure their business.

Executing our growth strategy requires that we have sufficient capital available to deploy. We believe that we have significant capital available to us to support our growth aspirations. As of March 31, 2020, we estimate that we have $7.4 billion in capital available to deploy, consisting of approximately $2.7 billion in excess capital, $2.3 billion in untapped debt capacity (assuming a peer average adjusted debt to capitalization ratio of 25%) and $2.4 billion in uncalled capital at ACRA, subject, in the case of debt capacity, to favorable market conditions and general availability. Excess capital includes the capital from the $500 million debt issuance completed in early April, while the untapped debt capacity includes the impact of the debt issuance and excludes the short-term debt with repayment due in the second quarter.

In order to support our growth strategies and capital deployment opportunities, we established ACRA as a long-duration, on-demand capital vehicle. As of March 31, 2020, we owned 33% of the economic interests and 100% of the voting interests of ACRA, with the remaining 67% of the economic interests being owned by ADIP, a series of funds managed by an affiliate of Apollo. ACRA is expected to participate in qualifying transactions and certain other transactions by drawing a portion of the required capital for such transactions from third-party investors equal to ADIP's proportionate economic interest in ACRA. This shareholder-friendly, strategic capital solution is expected to allow us the flexibility to simultaneously deploy capital across multiple accretive avenues, while maintaining a strong financial position.

Strategic Transaction with Apollo

On February 28, 2020, we closed a transaction with Apollo in which Apollo acquired an incremental stake in us for AOG units valued at approximately $1.1 billion, upon close, and approximately $350 million of cash. Additionally, we converted our Class B common shares to Class A common shares and our Class M common shares to Class A common shares and warrants, eliminating our multi-class share structure. The AOG units are reflected within the change in fair value of Apollo investment, net of tax line item and may present future volatility in our results of operations due to changes in the valuation of the AOG units. See *Note 9 – Related Parties* to the consolidated financial statements for further discussion.

Industry Trends and Competition

Market Conditions

On March 3, 2020, the U.S. Federal Reserve (Federal Reserve) decreased interest rates by 50 basis points in its first emergency rate cut since 2008. That action was quickly followed by a 100 basis point emergency rate cut on March 15, 2020, bringing the target federal funds rate range to 0% – 0.25%. The emergency rate cuts were in response to economic uncertainty resulting from the spread of COVID-19 and follows three separate 25 basis point rate cuts that occurred during 2019. The economic uncertainty has created considerable volatility in both the credit and equity markets, which has been amplified by a recently concluded price war among major oil producing countries, which when combined with a collapse in demand for oil and storage capacity constraints, has resulted in significant declines in oil prices. Unprecedented fiscal and monetary measures have been undertaken in the form of the Coronavirus Aid, Relief and Economic Security Act (CARES Act) and Federal Reserve programs implemented with funding provided by the CARES Act, respectively. The programs implemented by the Federal Reserve have provided significant liquidity to the capital markets and together with the broader CARES Act have reduced the volatility experienced in the credit and equity markets. It is unclear whether current fiscal and monetary policy or measures adopted in the future will be effective at continuing to abate the market volatility brought about by the spread of COVID-19.

To the extent that it has not already been so affected, current market volatility may be exacerbated by a number of factors, including market illiquidity, an inability to curtail the advancement of COVID-19, changes in the political environment or a lack thereof, uncertainty about future fiscal policy, further changes in oil prices or the factors impacting oil prices, changes in tax policy, the scope of potential deregulation or increased regulation, the imposition of additional tariffs or other barriers to international trade and levels of global trade, the future path of the Federal Reserve’s quantitative tightening or easing and uncertainty about the Federal Reserve’s ability to manage its normalization process and the impact on inflation and wage growth. In particular, equity market volatility has and may further place upward pressure on the hedging costs of our liability policy hedging program. Decreases in the risk-free rate have offset some of this upward pressure in the near-term, but this offsetting impact is not likely to persist into future periods. In addition, equity market volatility has and may further result in increases in rider reserves as we are required to fund more of the interest credited. Credit market volatility, which has and may further widen credit spreads, generally benefits our investment purchases but may negatively affect the valuations of our in-force investment portfolio.

A volatile market environment, such as the one brought about by the spread of COVID-19, may affect our ability to produce liability products that are profitable, have our desired risk profile, and are desirable to consumers. We continue to monitor the behavior of our customers and other factors that react to market conditions, including annuitization rates and lapse rates, in order to best serve our customers and generate strong profitability to our shareholders.

Interest Rate Environment

As a retirement services company focused on issuing and reinsuring fixed annuities, we are affected by the monetary policy of the Federal Reserve in the United States as well as other central banks around the world. The Federal Reserve aggressively cut rates during March 2020 after cutting rates on a more normalized basis on three separate occasions in 2019. Consequently, most treasury tenors, except the 30 year, are trading below 1%. Increased demand for treasury securities as a source of security amidst economic uncertainty has driven a decrease in the ten-year yield to below 1%, which is unprecedented. With the Federal Reserve undertaking extraordinary market intervention measures, it is anticipated that treasury yields will remain low in the near term.

Our investment portfolio consists predominantly of fixed maturity investments. See *–Consolidated Investment Portfolio*. If prevailing interest rates were to rise, we believe the yield on our new investment purchases may also rise and our investment income from floating rate investments would increase, while the value of our existing investments may decline. If prevailing interest rates were to decline, it is likely that the yield on our new investment purchases may decline and our investment income from floating rate investments would decrease, while the value of our existing investments may increase. Recent trends have entailed decreasing interest rates leading to a decrease in our investment income from floating rate investments, whereas widening credit spreads have resulted in an overall increase in asset yields, which we expect would result in an increase in the yield on our new investment purchases and a decline in the value of our existing investments.

We address interest rate risk through managing the duration of the liabilities we source with assets we acquire through ALM modeling. As part of our investment strategy, we purchase floating rate investments, which we expect would perform well in a rising interest rate environment and which we expect would underperform in a declining rate environment, such as has been experienced during the first quarter of 2020. Our investment portfolio includes $22.0 billion of floating rate investments, or 18% of our net invested assets as of March 31, 2020.

If prevailing interest rates were to rise, we believe our products would be more attractive to consumers and our sales would likely increase. If prevailing interest rates were to decline, it is likely that our products would be less attractive to consumers and our sales would likely decrease. In periods of prolonged low interest rates, the net investment spread may be negatively impacted by reduced investment income to the extent that we are unable to adequately reduce policyholder crediting rates due to policyholder guarantees in the form of minimum crediting rates or otherwise due to market conditions. As of March 31, 2020, most of our products were fixed annuities with 22% of our FIAs at the minimum guarantees and 39% of our fixed rate annuities at the minimum crediting rates. As of March 31, 2020, minimum guarantees on all of our deferred annuities, including those with crediting rates already at their minimum guarantees, were, on average, greater than 100 basis points below the crediting rates on such deferred annuities, allowing us room to reduce rates before reaching the minimum guarantees. Our remaining liabilities are associated with immediate annuities, pension risk transfer obligations, funding agreements and life contracts for which we have little to no discretionary ability to change the rates of interest payable to the respective policyholder. A significant majority of our deferred annuity products have crediting rates that we may reset annually upon renewal, following the expiration of the current guaranteed period. While we have the contractual ability to lower these crediting rates to the guaranteed minimum levels, our willingness to do so may be limited by competitive pressures.

See *Part I—Item 3. Quantitative and Qualitative Disclosures About Market Risks* to this report and *Part II—Item 7A. Quantitative and Qualitative Disclosures About Market Risks* in our 2019 Annual Report, which includes a discussion regarding interest rate and other significant risks and our strategies for managing these risks.

COVID-19

The spread of COVID-19 has resulted in significant volatility in the financial markets. The extent to which COVID-19 and the resulting impact on economic conditions and the financial markets may impact our business will depend on future developments and represents a material uncertainty to our business.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Risks and Mitigation Measures

The spread of COVID-19 presents three principal risks to our business: 1) business continuity risk; 2) market risk and 3) liquidity risk, including that resulting from policyholder behavior.

Business Continuity Risk. The spread of COVID-19 threatens the health and safety of our most valuable asset, our people. To mitigate the risk that the virus infects members of our workforce, to ensure the continuity of our operations throughout the duration of this pandemic and to ensure uninterrupted servicing of the policyholders who have entrusted us for their retirement needs, we have implemented our business continuity plan. Pursuant to that plan, as of May 8, 2020, the significant majority of our employees were working remotely, with only certain operationally essential employees working at our facilities, to the extent lawfully permitted. The essential employees who continue to work at our facilities are required to adhere to social distancing and other Center for Disease Control guidelines and government mandates, and we have designed certain operational redundancies and sterilization protocols to minimize the risk of disruption in the event that certain critical facilities, such as our mailroom, become contaminated. We have been successful in implementing our business continuity plan and to date have experienced no material impairment to our business operations. We have commenced planning for the return of non-operationally essential employees to our facilities. Currently, we expect that these employees will return in several separate phases. The timeframe over which these phases will occur is uncertain at this time and is subject to national and local orders, recommendations and guidelines.

Market Risk. The effects of the spread of COVID-19 on economic conditions and the financial markets may trigger or increase the market risks to which we are subject, namely interest rate risk, credit risk and public equity risk. The spread of COVID-19 and the Federal Reserve's responsive measures have resulted in abrupt and significant decreases in interest rates and abrupt and significant increases in credit spreads. Changes in interest rates and credit spreads may result in a decrease in the value of our invested assets. To the extent that we needed to sell assets at these decreased values in order to satisfy our obligations, we would realize losses. However, approximately 78% of our deferred annuities have surrender charges, and 63% have market value adjustment features, which we believe greatly reduce the livelihood and magnitude of unexpected withdrawals. Further, our PRT and funding agreement obligations are predominantly non-surrenderable. In addition, we mitigate interest rate risk by managing the effective duration of our assets and liabilities. In doing so, we closely monitor and manage our net duration mismatch as well as our cash inflows and outflows. Decreases in interest rates impact the interest income that we receive on our floating rate assets. For the three months ended March 31, 2020, we recognized $15 million less in floating rate income than we recognized for the three months ended December 31, 2019, primarily as a result of the declines in interest rates occurring during the three months ended March 31, 2020.

A greater proportion of the companies that issued the securities that we hold in our investment portfolio are more likely to experience financial hardship as a result of the economic effects of COVID-19. We mitigate such risk by actively managing our investment portfolio and attempting to exit or reduce exposures we deem to carry disproportionate risk when compared to their return profile. For the three months ended March 31, 2020, we recognized increased intent to sell impairments of $13 million when compared to the three months ended March 31, 2019, as a result of our active portfolio management.

We are exposed to public equity risk through the index crediting on our FIA products, our AOG unit holdings and our common stock holdings in OneMain Holdings, Inc. (OneMain). We effectively eliminate the public equity risk arising from the index crediting on our FIA products by hedging the relevant index performance over the crediting period. Though this results in an effective hedge for economic purposes, because the instruments used to hedge the index crediting period are for a shorter term than the FIA contract, the hedge is not deemed effective for accounting purposes and results in the recognition of gains and losses from period to period. The public equity volatility arising from our holdings of AOG Units and OneMain stock is unhedged. During the three months ended March 31, 2020, we recognized an income statement impact of $(289) million resulting from our FIA products (net of offsets) and declines in the market value of our AOG and OneMain holdings.

Liquidity Risk. In the current market environment, liquidity risk can arise in several areas of our business, including but not limited to asset-liability mismatch and policyholder behavior risk. As noted above, most of our deferred annuities have surrender charges and market value adjustments, which reduce the likelihood and magnitude of expected withdrawals, and our PRT and funding agreement obligations are predominantly non-surrenderable.

To be prepared to capitalize on growth opportunities that may arise in the current market environment as well as to manage any near-term liquidity risk, we have strategically increased our available liquidity. As of April 30, 2020, we had approximately $6.3 billion of available liquidity comprised of $5.1 billion of cash and $1.25 billion of undrawn capacity under our credit agreement. We intend to further increase our available liquidity to approximately $10 billion. We have taken measures to achieve this objective, including negotiating new committed lending facilities and retaining a portion of the proceeds received from our organic channels in cash and other highly liquid assets. We have also entered into several new securities repurchase arrangements with different financial institutions to provide access to additional short-term liquidity, to the extent available.

With a record number of individuals finding themselves abruptly out of work and searching for sources of liquidity, we face policyholder behavior risk in the form of increased withdrawal levels and lapse rates may be elevated. We have been closely monitoring policyholder behavior on a daily basis. As of April 30, 2020, we had noticed no material adverse change in policyholder behavior. We mitigate policyholder behavior risk by monitoring and projecting cash inflows and outflows and by maintaining greater levels of available liquidity.

Emerging Trends

As a result of the spread of COVID-19, the resulting impact on economic conditions and the financial markets and the mitigation efforts we have undertaken in response, we expect to see several trends impacting our future operating results.

First, we could hold a greater proportion of our invested assets in cash and other liquid assets which could impact our net investment earned rates and net spread.

Second, we expect that the current market environment will cause certain issuers of securities held in our investment portfolio to experience financial hardship, resulting in recognition of credit losses or impairments. During the three months ended March 31, 2020, we recorded a provision for credit losses of $284 million, post-adoption of the new accounting standard regarding accounting for current expected credit losses, more commonly referred to as "CECL." While we cannot predict the duration or severity of the current economic downturn, we regularly perform stress testing of our investment portfolio under two hypothetical scenarios: a baseline recession scenario and a deep recession scenario. The assumptions for each hypothetical scenario and past experience are included in the chart below.

	Athene Assumptions		*Sample Historical Recession Data Peak to Trough for Calendar Year*			
	Baseline Recession Scenario	**Deep Recession Scenario**	**1990**	**2001**	**2008**	**Euro 2016**
10 Yr US Treasury Yield	Down 60%	Down 83%	Up 4%	Down 21%	Down 43%	Down 84%[1]
Absolute Spreads (BBB / B)	279bps / 802bps	636bps / 1,789bps	240bps / NA	318bps / 1,083bps	642bps / 1,913bps	317bps / 876bps
Equity Markets[2]	(25)%	(49)%	(20)%	(30)%	(49)%	(12)%
FI Defaults (BBB / B)	0.70% / 12.9%	1.4% / 13.7%	0.30% / 13.7%	1.01% / 9.2%	0.9% / 7.1%	0.0% / 2.4%
Housing Price (Peak to Trough)	(3)%	(27)%	(3)%	No Decline	(33)%	No Decline

[1] German 10-year bund yield.

[2] Primarily for representative purposes. Stress scenarios apply customized stresses as relevant for Alternatives sub-categories.

In March 2020, we evaluated our investment portfolio under these hypothetical stress scenarios and estimated that absent any management intervention, we would recognize credit losses and impairments, net of DAC and tax offsets, as well as losses in our alternatives portfolio, of approximately $1 billion and $2 billion under the baseline recession scenario and deep recession scenario, respectively. These scenarios are hypothetical and are not representative of the current economic environment and even if representative, actual results may differ materially from estimates.

Third, we have experienced downward pressure on the valuation of our alternatives portfolio. During the three months ended March 31, 2020, we experienced a decrease in net income of $37 million attributed to mark-to-market performance of our alternative investments. With approximately 60% of our alternatives portfolio accounted for on a one to three month lag, we expect to see any adverse impact of the economic environment during the three months ended March 31, 2020 largely reflected in our second quarter performance for those alternatives reported on a lag.

Fourth, the substantial and sudden decrease in interest rates during March 2020 will have a negative impact on adjusted operating income if the current rates persist for a prolonged period. Currently, we estimate that a 25 basis point decrease in interest rates that persists for a 12-month period will result in an approximate $30 – $35 million decrease in adjusted operating income.

The spread of COVID-19, the resulting impact on economic conditions and the financial markets and the mitigating efforts we have and will undertake may have consequences to our business that are unforeseen at this time. The emerging trends identified above do not purport to be complete and actual experience may differ materially from our current expectations.

Discontinuation of LIBOR

The UK Financial Conduct Authority (FCA) has announced that it intends to stop persuading or compelling banks to submit LIBOR rates after 2021. It is expected that a number of private-sector banks currently reporting information used to set LIBOR will stop doing so after 2021 when their current reporting commitment ends, which could either cause LIBOR to stop publication immediately or cause the FCA to determine that the quality of LIBOR has degraded to the degree that LIBOR is no longer representative of its underlying market. With an estimated $200 trillion in notional transactions referencing USD LIBOR in the cash and derivatives markets, including more than $35 trillion extending past 2021, the discontinuation of LIBOR could have a significant impact on the financial markets and represents a material uncertainty to our business.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

To manage the uncertainty surrounding the discontinuation of LIBOR we have established a plan, which involves the following six phases: (1) identify and quantify our exposure to LIBOR; (2) establish a counterparty communication strategy; (3) evaluate the specific risks to our business arising as a result of the transition; (4) identify actions that we can take to mitigate the risks identified in phase 3; (5) monitor market developments regarding the adoption of a replacement rate; and (6) transition to the market consensus rate or rates once such rate or rates emerge and are operational.

The phases of our plan are not discrete and need not occur in chronological order. Our plan is subject to change as we gain additional information. We have created an Executive Steering Committee composed of senior executives to coordinate and oversee the execution of our plan.

As of March 31, 2020, we had contracts tied to LIBOR in the notional amounts set forth in the table below:

(In millions)	Total Exposure	Extending Beyond 2021
Investments	$ 21,402	$ 18,103
"Excess Return" Product Liabilities	7,671	880
Derivatives Hedging "Excess Return" Product Liabilities	7,456	—
Other Derivatives	1,886	453
Other Contracts	2,963	2,663
Total notional of contracts tied to LIBOR	$ 41,378	$ 22,099

Investments

As of March 31, 2020, our investments tied to LIBOR were in the following asset classes:

(In millions)	Total Exposure	Extending Beyond 2021
Multi-lateral Arrangements		
Corporates	$ 1,014	$ 495
RMBS	4,168	3,864
CMBS	274	30
CLO	10,521	10,448
ABS	1,402	1,324
Bank Loans	402	277
Total Multi-lateral Arrangements	17,781	16,438
Bi-lateral Arrangements		
CML	3,479	1,523
RML	142	142
Total Bi-lateral Arrangements	3,621	1,665
Total investments tied to LIBOR	$ 21,402	$ 18,103

Of the total notional value of investment-related contracts tied to LIBOR, extending beyond 2021, $16.4 billion or 90.8% relate to multi-lateral arrangements. These arrangements are typically characterized by a large, diverse set of unrelated holders, the majority or all of whom must consent to amendments to the terms of the underlying investment instrument. Generally, when the amendments concern a material term such as the determination of interest, consent must be unanimous. Given the collective action issues inherent in such structures, such consent is impracticable and beyond our control. To the extent that such legacy arrangements do not contemplate the permanent discontinuation of LIBOR, we would look to some broad-based solution, such as the Alternative Reference Rates Committee's proposed New York law amendment, to rectify such deficiency. To the extent that the fallback rates ultimately used to determine interest payable on such investments do not align with the fallback rates used to determine interest payable on the underlying assets, economic losses could be sustained on the overall structure.

The remaining notional value of investment-related contracts tied to LIBOR extending beyond 2021 of $1.7 billion or 9.2% relates to bi-lateral arrangements for which we, or some party acting on our behalf, such as a mortgage servicer, are able to negotiate directly with the applicable counterparty for amendments to the terms of the arrangement. For these arrangements, we will evaluate the need for amendments to legacy contracts.

"Excess Return" Product Liabilities and Associated Hedging Instruments

As of March 31, 2020, we had product liabilities with a notional value of approximately $7.7 billion for which interest credited is computed on "excess return" indices (return of index in excess of LIBOR) and for which we expect product liabilities with a notional value of approximately $880 million to extend beyond 2021. The "excess return" indices to which these products are tied are primarily proprietary indices for which key inputs are determined by the index sponsor. The index sponsor has the right to unilaterally change the reference rate upon the discontinuation of LIBOR. As a result, we do not anticipate any administrative concerns in connection with the transition from LIBOR to a replacement rate with respect to these products.

As of March 31, 2020, we held derivatives with a notional value of approximately $7.5 billion to hedge our exposure to these product liabilities. As these derivatives are primarily purchased to hedge the current crediting period, we expect that substantially all of such derivatives will expire before the end of 2021. We will be required to purchase new derivatives in future periods to hedge future crediting periods associated with existing product liabilities, which will expose us to potential basis mismatch to the extent that the reference rate for the product liability is not the same as the reference rate for the derivative instrument.

Other Derivatives

Our other derivative contracts tied to LIBOR are generally entered into pursuant to an ISDA Master Agreement. We believe that fallbacks contemplating a permanent discontinuation of LIBOR will be integrated into the ISDA Master Agreement and applied to our outstanding obligations via standard protocol counterparty consent. To the extent that the fallbacks ultimately incorporated into our other derivative contracts result in the use of a replacement rate that differs from that employed in the contract being hedged, we will experience basis mismatch. We will continue to evaluate this risk as fallbacks become better defined.

Other Contracts

Other contracts is comprised of our credit agreement, floating rate funding agreements and fixed-to-float Series A preference shares, all of which contemplate the permanent discontinuation of LIBOR.

We can provide no assurance that we will be successful at completing all the phases of our plan prior to the discontinuation of LIBOR. Completion of certain phases of our plan are contingent upon market developments and are therefore not fully within our control. To the extent management effort and attention is focused on other matters, such as responding to the risks posed by COVID-19, the timely completion of our plan could become more difficult. Failure to complete all phases of our plan prior to the discontinuation of LIBOR may have a material adverse effect on our business, financial position, results of operations and cash flows.

Demographics

Over the next four decades, the retirement-age population is expected to experience unprecedented growth. Technological advances and improvements in healthcare are projected to continue to contribute to increasing average life expectancy, and aging individuals must be prepared to fund retirement periods that will last longer than ever before. Further, many working households in the United States do not have adequate retirement savings. As a tool for addressing the unmet need for retirement planning, we believe that many Americans have begun to look to tax-efficient savings products with low-risk or guaranteed return features and potential equity market upside. Our tax-efficient savings products are well positioned to meet this increasing customer demand.

Competition

We operate in highly competitive markets. We face a variety of large and small industry participants, including diversified financial institutions and insurance and reinsurance companies. These companies compete in one form or another for the growing pool of retirement assets driven by a number of external factors such as the continued aging of the population and the reduction in safety nets provided by governments and private employers. In the markets in which we operate, scale and the ability to provide value-added services and build long-term relationships are important factors to compete effectively. We believe that our leading presence in the retirement market, diverse range of capabilities and broad distribution network uniquely position us to effectively serve consumers' increasing demand for retirement solutions, particularly in the FIA market.

According to LIMRA, total fixed annuity market sales in the United States were $139.8 billion for the year ended December 31, 2019, a 4.7% increase from the same time period in 2018. In the total fixed annuity market, for the year ended December 31, 2019 (the most recent period for which specific market share data is available), we were the 5th largest company based on sales of $6.8 billion, translating to a 4.8% market share. For the year ended December 31, 2018, our market share was 5.6% with sales of $7.5 billion.

FIAs have been one of the fastest growing annuity products, having grown from $27.3 billion in sales for the year ended December 31, 2005 to $73.5 billion in sales for the year ended December 31, 2019. FIA sales grew $3.9 billion in the one year period from December 31, 2018 to December 31, 2019. According to LIMRA data, for the year ended December 31, 2019 (the most recent period for which specific market share data is available), we were the 2nd largest provider of FIAs based on sales of $6.1 billion, and our market share for the same period was 8.3%. For the year ended December 31, 2018, we were the 2nd largest provider of FIAs based on sales of $6.6 billion, translating to a 9.4% market share.

Key Operating and Non-GAAP Measures

In addition to our results presented in accordance with GAAP, we present certain financial information that includes non-GAAP measures. Management believes the use of these non-GAAP measures, together with the relevant GAAP measures, provides information that may enhance an investor's understanding of our results of operations and the underlying profitability drivers of our business. The majority of these non-GAAP measures are intended to remove from the results of operations the impact of market volatility (other than with respect to alternative investments) as well as integration, restructuring and certain other expenses which are not part of our underlying profitability drivers, as such items fluctuate from period to period in a manner inconsistent with these drivers. These measures should be considered supplementary to our results in accordance with GAAP and should not be viewed as a substitute for the corresponding GAAP measures.

Adjusted Operating Income (Loss) Available to Common Shareholders

Adjusted operating income (loss) available to common shareholders is a non-GAAP measure used to evaluate our financial performance excluding market volatility and expenses related to integration, restructuring, stock compensation and other expenses. Our adjusted operating income (loss) available to common shareholders equals net income (loss) available to AHL common shareholders adjusted to eliminate the impact of the following (collectively, the non-operating adjustments):

- **Investment Gains (Losses), Net of Offsets—**Consists of the realized gains and losses on the sale of AFS securities, the change in fair value of reinsurance assets, unrealized gains and losses, allowances, and other investment gains and losses. Unrealized, allowances and other investment gains and losses are comprised of the fair value adjustments of trading securities (other than CLOs) and investments held under the fair value option, derivative gains and losses not hedging FIA index credits, and the change in credit loss allowances recognized in operations net of the change in AmerUs Closed Block fair value reserve related to the corresponding change in fair value of investments and the change in unit-linked reserves related to the corresponding trading securities. Investment gains and losses are net of offsets related to DAC, DSI, and VOBA amortization and changes to guaranteed lifetime withdrawal benefit (GLWB) and guaranteed minimum death benefit (GMDB) reserves (together, GLWB and GMDB reserves represent rider reserves) as well as the market value adjustments (MVA) associated with surrenders or terminations of contracts.

- **Change in Fair Values of Derivatives and Embedded Derivatives – FIAs, Net of Offsets—**Consists of impacts related to the fair value accounting for derivatives hedging the FIA index credits and the related embedded derivative liability fluctuations from period to period. The index reserve is measured at fair value for the current period and all periods beyond the current policyholder index term. However, the FIA hedging derivatives are purchased to hedge only the current index period. Upon policyholder renewal at the end of the period, new FIA hedging derivatives are purchased to align with the new term. The difference in duration between the FIA hedging derivatives and the index credit reserves creates a timing difference in earnings. This timing difference of the FIA hedging derivatives and index credit reserves is included as a non-operating adjustment, net of offsets related to DAC, DSI, and VOBA amortization and changes to rider reserves.

  We primarily hedge with options that align with the index terms of our FIA products (typically 1–2 years). From an economic basis, we believe this is suitable because policyholder accounts are credited with index performance at the end of each index term. However, because the term of an embedded derivative in an FIA contract is longer-dated, there is a duration mismatch which may lead to mismatches for accounting purposes.

- **Integration, Restructuring, and Other Non-operating Expenses—**Consists of restructuring and integration expenses related to acquisitions and block reinsurance costs as well as certain other expenses, which are not predictable or related to our underlying profitability drivers.

- **Stock Compensation Expense—**Consists of stock compensation expenses associated with our share incentive plans, excluding our long-term incentive plan, which are not related to our underlying profitability drivers and fluctuate from time to time due to the structure of our plans.

- **Bargain Purchase Gain—**Consists of adjustments to net income (loss) available to AHL common shareholders as they are not related to our underlying profitability drivers.

- **Income Tax (Expense) Benefit – Non-operating—**Consists of the income tax effect of non-operating adjustments and is computed by applying the appropriate jurisdiction's tax rate to the non-operating adjustments that are subject to income tax.

We consider these non-operating adjustments to be meaningful adjustments to net income (loss) available to AHL common shareholders for the reasons discussed in greater detail above. Accordingly, we believe using a measure which excludes the impact of these items is useful in analyzing our business performance and the trends in our results of operations. Together with net income (loss) available to AHL common shareholders, we believe adjusted operating income (loss) available to common shareholders provides a meaningful financial metric that helps investors understand our underlying results and profitability. Adjusted operating income (loss) available to common shareholders should not be used as a substitute for net income (loss) available to AHL common shareholders.

Adjusted Operating ROE

Adjusted operating ROE is a non-GAAP measure used to evaluate our financial performance excluding the impacts of AOCI and the cumulative change in fair value of funds withheld and modco reinsurance assets, net of DAC, DSI, rider reserve and tax offsets. Adjusted AHL common shareholders’ equity is calculated as the ending AHL shareholders’ equity excluding AOCI, the cumulative change in fair value of funds withheld and modco reinsurance assets and preferred stock. Adjusted operating ROE is calculated as the adjusted operating income (loss) available to common shareholders, divided by average adjusted AHL common shareholders’ equity. These adjustments fluctuate period to period in a manner inconsistent with our underlying profitability drivers as the majority of such fluctuation is related to the market volatility of the unrealized gains and losses associated with our AFS securities. Except with respect to reinvestment activity relating to acquired blocks of businesses, we typically buy and hold AFS investments to maturity throughout the duration of market fluctuations, therefore, the period-over-period impacts in unrealized gains and losses are not necessarily indicative of current operating fundamentals or future performance. Accordingly, we believe using measures which exclude AOCI and the cumulative change in fair value of funds withheld and modco reinsurance assets are useful in analyzing trends in our operating results. To enhance the ability to analyze these measures across periods, interim periods are annualized. Adjusted operating ROE should not be used as a substitute for ROE. However, we believe the adjustments to net income (loss) available to AHL common shareholders and equity are significant to gaining an understanding of our overall financial performance.

Adjusted Operating Earnings (Loss) Per Common Share, Weighted Average Common Shares Outstanding – Adjusted Operating and Adjusted Book Value Per Common Share

Adjusted operating earnings (loss) per common share, weighted average common shares outstanding – adjusted operating and adjusted book value per common share are non-GAAP measures used to evaluate our financial performance and financial condition. The non-GAAP measures adjust the number of shares included in the corresponding GAAP measures to reflect the conversion or settlement of all shares and other stock-based awards outstanding. We believe using these measures represent an economic view of our share counts and provide a simplified and consistent view of our outstanding shares. Adjusted operating earnings (loss) per common share is calculated as the adjusted operating income (loss) available to common shareholders, over the weighted average common shares outstanding – adjusted operating. Adjusted book value per common share is calculated as the adjusted AHL common shareholders’ equity divided by the adjusted operating common shares outstanding. Effective February 28, 2020, all Class B common shares were converted into Class A common shares and all Class M common shares were converted into warrants and Class A common shares. Our Class B common shares were economically equivalent to Class A common shares and could have been converted to Class A common shares on a one-for-one basis at any time. Our Class M common shares were in the legal form of shares but economically functioned as options as they were convertible into Class A common shares after vesting and settlement of the conversion price. In calculating Class A diluted earnings per share on a GAAP basis, we are required to apply sequencing rules to determine the dilutive impacts, if any, of our Class B common shares, Class M common shares and any other stock-based awards. To the extent our Class B common shares, Class M common shares and/or any other stock-based awards were not dilutive, after considering the dilutive effects of the more dilutive securities in the sequence, they were excluded. Weighted average common shares outstanding – adjusted operating and adjusted operating common shares outstanding assume conversion or settlement of all outstanding items that are able to be converted to or settled in Class A common shares, including the impacts of Class B common shares on a one-for-one basis, the impacts of all Class M common shares net of the conversion price and any other stock-based awards, but excluding any awards for which the exercise or conversion price exceeds the market value of our Class A common shares on the applicable measurement date. For certain historical periods, Class M shares were not included due to issuance restrictions which were contingent upon our IPO. Adjusted operating earnings (loss) per common share, weighted average common shares outstanding – adjusted operating and adjusted book value per common share should not be used as a substitute for basic earnings (loss) per share – Class A common shares, basic weighted average common shares outstanding – Class A or book value per common share. However, we believe the adjustments to the shares and equity are significant to gaining an understanding of our overall results of operations and financial condition.

Adjusted Debt to Capital Ratio

Adjusted debt to capital ratio is a non-GAAP measure used to evaluate our capital structure excluding the impacts of AOCI and the cumulative change in fair value of funds withheld and modco reinsurance assets, net of DAC, DSI, rider reserve and tax offsets. Adjusted debt to capital ratio is calculated as total debt divided by adjusted AHL shareholders’ equity. Adjusted debt to capital ratio should not be used as a substitute for the debt to capital ratio. However, we believe the adjustments to total debt and shareholders’ equity are significant to gaining an understanding of our capitalization, debt utilization and debt capacity.

Retirement Services Net Investment Spread, Investment Margin on Deferred Annuities and Operating Expenses

Net investment spread is a key measurement of the profitability of our Retirement Services segment. Net investment spread measures our investment performance less the total cost of our liabilities. Net investment earned rate is a key measure of our investment performance, while cost of funds is a key measure of the cost of our policyholder benefits and liabilities. Investment margin on our deferred annuities measures our investment performance less the cost of crediting for our deferred annuities, which make up a significant portion of our net reserve liabilities.

Net investment earned rate is a non-GAAP measure we use to evaluate the performance of our net invested assets that does not correspond to GAAP net investment income. Net investment earned rate is computed as the income from our net invested assets divided by the average net invested assets, excluding the impacts of our investment in Apollo, for the relevant period. To enhance the ability to analyze these measures across periods, interim periods are annualized. The adjustments to arrive at our net investment earned rate add (a) alternative investment gains and losses, (b) gains and losses related to trading securities for CLOs, (c) net VIE impacts (revenues, expenses and noncontrolling interest), (d) forward points gains and losses on foreign exchange derivative hedges and (e) the change in fair value of reinsurance assets, and removes the proportionate share of the ACRA net investment income associated with the ACRA noncontrolling interest as well as the gain or loss on our investment in Apollo. We include the income and assets supporting our change in fair value of reinsurance assets by evaluating the underlying investments of the funds withheld at interest receivables and we include the net investment income from those underlying investments which does not correspond to the GAAP presentation of change in fair value of reinsurance assets. We exclude the income and assets supporting business that we have exited through ceded reinsurance including funds withheld agreements. We believe the adjustments for reinsurance provide a net investment earned rate on the assets for which we have economic exposure.

Cost of funds includes liability costs related to cost of crediting on both deferred annuities and institutional products as well as other liability costs, but does not include the proportionate share of the ACRA cost of funds associated with the noncontrolling interest. Cost of funds is computed as the total liability costs divided by the average net invested assets, excluding our investment in Apollo, for the relevant period. To enhance the ability to analyze these measures across periods, interim periods are annualized.

Cost of crediting includes the costs for both deferred annuities and institutional products. Cost of crediting on deferred annuities is the interest credited to the policyholders on our fixed strategies as well as the option costs on the indexed annuity strategies. With respect to FIAs, the cost of providing index credits includes the expenses incurred to fund the annual index credits, and where applicable, minimum guaranteed interest credited. Cost of crediting on institutional products is comprised of PRT costs including interest credited, benefit payments and other reserve changes, net of premiums received when issued, as well as funding agreement costs including the interest payments and other reserve changes. Cost of crediting is computed as the cost of crediting for deferred annuities and institutional products divided by the average net invested assets, excluding the investment in Apollo, for the relevant periods. Cost of crediting on deferred annuities is computed as the net interest credited on fixed strategies and option costs on indexed annuity strategies divided by the average net account value of our deferred annuities. Cost of crediting on institutional products is computed as the PRT and funding agreement costs divided by the average net institutional reserve liabilities. Our average net invested assets, excluding our investment in Apollo, net account values and net institutional reserve liabilities are averaged over the number of quarters in the relevant period to obtain our associated cost of crediting for such period. To enhance the ability to analyze these measures across periods, interim periods are annualized.

Other liability costs include DAC, DSI and VOBA amortization, change in rider reserves, the cost of liabilities on products other than deferred annuities and institutional products, excise taxes, premiums, product charges and other revenues. We believe a measure like other liability costs is useful in analyzing the trends of our core business operations and profitability. While we believe other liability costs is a meaningful financial metric and enhances our understanding of the underlying profitability drivers of our business, it should not be used as a substitute for total benefits and expenses presented under GAAP.

Net investment earned rate, cost of funds, net investment spread and investment margin on deferred annuities are non-GAAP measures we use to evaluate the profitability of our business. We believe these metrics are useful in analyzing the trends of our business operations, profitability and pricing discipline. While we believe each of these metrics are meaningful financial metrics and enhance our understanding of the underlying profitability drivers of our business, they should not be used as a substitute for net investment income, interest sensitive contract benefits or total benefits and expenses presented under GAAP.

Operating expenses excludes integration, restructuring and other non-operating expenses, stock compensation expense, interest expense and policy acquisition expenses. We believe a measure like operating expenses is useful in analyzing the trends of our core business operations and profitability. While we believe operating expenses is a meaningful financial metric and enhances our understanding of the underlying profitability drivers of our business, it should not be used as a substitute for policy and other operating expenses presented under GAAP.

Net Invested Assets

In managing our business, we analyze net invested assets, which does not correspond to total investments, including investments in related parties, as disclosed in our consolidated financial statements and notes thereto. Net invested assets represents the investments that directly back our net reserve liabilities as well as surplus assets. Net invested assets, excluding our investment in Apollo, is used in the computation of net investment earned rate, which allows us to analyze the profitability of our investment portfolio. Net invested assets includes (a) total investments on the consolidated balance sheets with AFS securities at cost or amortized cost, excluding derivatives, (b) cash and cash equivalents and restricted cash, (c) investments in related parties, (d) accrued investment income, (e) VIE assets, liabilities and noncontrolling interest adjustments, (f) net investment payables and receivables, (g) policy loans ceded (which offset the direct policy loans in total investments) and (h) an allowance for credit losses. Net invested assets also excludes assets associated with funds withheld liabilities related to business exited through reinsurance agreements and derivative collateral (offsetting the related cash positions). We include the underlying investments supporting our assumed funds withheld and modco agreements in our net invested assets calculation in order to match the assets with the income received. We believe the adjustments for reinsurance provide a view of the assets for which we have economic exposure. Net invested assets includes our proportionate share of ACRA investments, based on our economic ownership, but does not include the proportionate share of investments associated with the noncontrolling interest. Net invested assets also includes our investment in Apollo. Our net invested assets, excluding our investment in Apollo, are averaged over the number of quarters in the relevant period to compute our net investment earned rate for such period. While we believe net invested assets is a meaningful financial metric and enhances our understanding of the underlying drivers of our investment portfolio, it should not be used as a substitute for total investments, including related parties, presented under GAAP.

Net Reserve Liabilities

In managing our business, we also analyze net reserve liabilities, which does not correspond to total liabilities as disclosed in our consolidated financial statements and notes thereto. Net reserve liabilities represent our policyholder liability obligations net of reinsurance and is used to analyze the costs of our liabilities. Net reserve liabilities include (a) the interest sensitive contract liabilities, (b) future policy benefits, (c) dividends payable to policyholders, and (d) other policy claims and benefits, offset by reinsurance recoverable, excluding policy loans ceded. Net reserve liabilities include our proportionate share of ACRA reserve liabilities, based on our economic ownership, but does not include the proportionate share of reserve liabilities associated with the noncontrolling interest. Net reserve liabilities is net of the ceded liabilities to third-party reinsurers as the costs of the liabilities are passed to such reinsurers and, therefore, we have no net economic exposure to such liabilities, assuming our reinsurance counterparties perform under our agreements. The majority of our ceded reinsurance is a result of reinsuring large blocks of life business following acquisitions. For such transactions, GAAP requires the ceded liabilities and related reinsurance recoverables to continue to be recorded in our consolidated financial statements despite the transfer of economic risk to the counterparty in connection with the reinsurance transaction. While we believe net reserve liabilities is a meaningful financial metric and enhances our understanding of the underlying profitability drivers of our business, it should not be used as a substitute for total liabilities presented under GAAP.

Sales

Sales statistics do not correspond to revenues under GAAP but are used as relevant measures to understand our business performance as it relates to deposits generated during a specific period of time. Our sales statistics include deposits for fixed rate annuities and FIAs and align with the LIMRA definition of all money paid into an individual annuity, including money paid into new contracts with initial purchase occurring in the specified period and existing contracts with initial purchase occurring prior to the specified period (excluding internal transfers). While we believe sales is a meaningful metric and enhances our understanding of our business performance, it should not be used as a substitute for premiums presented under GAAP.

Consolidated Results of Operations

The following summarizes the consolidated results of operations:

	Three months ended March 31,	
(In millions, except percentages)	2020	2019
Revenues	$ (1,549)	$ 4,995
Benefits and expenses	(167)	4,255
Income (loss) before income taxes	(1,382)	740
Income tax expense (benefit)	(166)	32
Net income (loss)	(1,216)	708
Less: Net loss attributable to noncontrolling interests	(169)	—
Net income (loss) attributable to Athene Holding Ltd.	(1,047)	708
Less: Preferred stock dividends	18	—
Net income (loss) available to AHL common shareholders	$ (1,065)	$ 708
ROE	(36.5)%	30.8%

Three Months Ended March 31, 2020 Compared to the Three Months Ended March 31, 2019

In this section, references to 2020 refer to the three months ended March 31, 2020 and references to 2019 refer to the three months ended March 31, 2019.

Net Income (Loss) Available to AHL Common Shareholders

Net income (loss) available to AHL common shareholders decreased by $1.8 billion, or 250%, to $(1.1) billion in 2020 from $708 million in 2019. ROE decreased to (36.5)% from 30.8% in 2019. The decrease in net income (loss) available to AHL common shareholders was driven by a $6.5 billion decrease in revenues, partially offset by a decrease of $4.4 billion in benefits and expenses and a $198 million decrease in income tax expenses.

Revenues

Revenues decreased by $6.5 billion to $(1.5) billion in 2020 from $5.0 billion in 2019. The decrease was driven by a decrease in investment related gains and losses, a decrease in premiums, and a decrease in net investment income.

Investment related gains and losses decreased by $5.3 billion to $(3.6) billion in 2020 from $1.8 billion in the prior year, primarily due to the change in fair value of FIA hedging derivatives, the change in fair value of reinsurance assets, the provision for credit losses, the change in fair value of trading securities and a decrease in equity securities reflecting the decline in financial markets. The change in fair value of FIA hedging derivatives decreased $2.4 billion driven by the unfavorable performance of the indices upon which our call options are based. The majority of our call options are based on the S&P 500 index which decreased 20.0% in 2020, compared to an increase of 13.1% in 2019. The change in fair value of reinsurance assets decreased $2.3 billion primarily driven by the change in the value of the underlying assets related to credit spreads widening, partially offset by the decrease in U.S. Treasury rates. The unfavorable provision for credit losses of $284 million was primarily a result of the forecasted economic downturn from the spread of COVID-19. The unfavorable change in fair value of trading securities of $279 million was comprised primarily of a decrease in AmerUs Closed Block assets of $97 million, CLO equity securities, non-redeemable preferred stock and other trading securities primarily due to credit spreads widening, partially offset by the decrease in U.S. Treasury rates.

Premiums decreased by $860 million to $1.1 billion in 2020 from $2.0 billion in the prior year, driven by lower PRT premiums compared to prior year.

Net investment income decreased by $337 million to $745 million in 2020 from $1.1 billion in the prior year, primarily driven by an unrealized loss on our investment in Apollo of $297 million due to the decrease in share price and an increase in the liquidity discount, alternative investment losses, higher investment management fees due primarily to increased invested assets compared to the prior year and lower floating rate income due to the lower interest rate environment.

Benefits and Expenses

Benefits and expenses decreased by $4.4 billion to $(167) million in 2020 from $4.3 billion in 2019. The decrease was driven by a decrease in interest sensitive contract benefits, a decrease in future policy and other policy benefits and a decrease in DAC, DSI and VOBA amortization.

Interest sensitive contract benefits decreased by $2.8 billion to $(1.3) billion in 2020 from $1.5 billion in 2019, driven by a decrease in FIA fair value embedded derivatives of $2.8 billion. The change in the FIA fair value embedded derivatives was primarily due the performance of the equity indices to which our FIA policies are linked, primarily the S&P 500 index, which experienced a decrease of 20.0% in 2020, compared to an increase of 13.1% in 2019, as well as a favorable change in discount rates used in our embedded derivative calculations as the current year experienced an increase in discount rates compared to 2019, which experienced a decrease in discount rates.

Future policy and other policy benefits decreased by $973 million to $1.4 billion in 2020 from $2.3 billion in 2019, primarily attributable to lower PRT obligations, a decrease in the change in AmerUs Closed Block fair value liability and a decrease in the change in rider reserves. The favorable change in the AmerUs Closed Block fair value liability of $105 million was primarily driven by the increase in unrealized losses on the underlying investments related to credit spreads widening, partially offset by the decrease in U.S. Treasury rates compared to prior year. The change in rider reserve of $46 million was primarily due to the unfavorable change in reinsurance embedded derivatives, partially offset by the favorable net change in FIA derivatives, unfavorable impacts from equity market performance and growth in the block of business.

DAC, DSI and VOBA amortization decreased by $639 million to $(403) million in 2020 from $236 million in 2019, primarily due to the unfavorable change in investment related gains and losses as a result of an unfavorable change in reinsurance embedded derivatives, partially offset by the favorable net change in FIA derivatives, unfavorable impacts from equity market performance and growth in the block of business.

Taxes

Income tax expense (benefit) decreased by $198 million to $(166) million in 2020 from $32 million in 2019. The income tax benefit for 2020 was primarily driven by lower income before tax resulting from the unfavorable change in reinsurance embedded derivatives and unrealized losses on our investment in Apollo.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Our effective tax rate in the first quarter of 2020 was (12%) and 4% in 2019. Our effective tax rates may vary period to period depending upon the relationship of income and loss subject to tax compared to consolidated income and loss before income taxes.

Noncontrolling Interest

Noncontrolling interest decreased by $169 million to $(169) million in 2020 from $0 million in 2019, driven by a net loss related to noncontrolling interests in ACRA following the sale of a 67% interest in ACRA to ADIP on October 1, 2019. There was no significant noncontrolling interest prior to the ACRA sale to ADIP.

Preferred Stock Dividends

Preferred stock dividends increased by $18 million to $18 million in 2020 from $0 million in 2019, driven by our issuance of preferred stock in in June and September of 2019.

Results of Operations by Segment

The following summarizes our adjusted operating income (loss) available to common shareholders by segment:

	Three months ended March 31,	
(In millions, except percentages)	2020	2019
Net income (loss) available to AHL common shareholders	$ (1,065)	$ 708
Non-operating adjustments		
Realized gains (losses) on sale of AFS securities	12	12
Unrealized, allowances and other investment gains (losses)	(369)	29
Change in fair value of reinsurance assets	(1,277)	616
Offsets to investment gains (losses)	495	(199)
Investment gains (losses), net of offsets	(1,139)	458
Change in fair values of derivatives and embedded derivatives – FIAs, net of offsets	65	(27)
Integration, restructuring and other non-operating expenses	(4)	(1)
Stock compensation expense	(10)	(3)
Income tax (expense) benefit – non-operating	131	(6)
Less: Total non-operating adjustments	(957)	421
Adjusted operating income (loss) available to common shareholders	$ (108)	$ 287
Adjusted operating income (loss) available to common shareholders by segment		
Retirement Services	$ 204	$ 286
Corporate and Other	(312)	1
Adjusted operating income (loss) available to common shareholders	$ (108)	$ 287
Adjusted operating ROE	(4.4)%	12.8%
Retirement Services adjusted operating ROE	10.6 %	14.4%

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Three Months Ended March 31, 2020 Compared to the Three Months Ended March 31, 2019

Adjusted Operating Income (Loss) Available to Common Shareholders

Adjusted operating income (loss) available to common shareholders decreased by $395 million, or 138%, to $(108) million in 2020 from $287 million in 2019. Adjusted operating ROE was (4.4)%, down from 12.8% in 2019. Adjusted operating income (loss) available to common shareholders excluding the investment in Apollo, net of tax was $131 million for the three months ended March 31, 2020. The decrease in adjusted operating income (loss) available to common shareholders was primarily driven by a decrease in our Corporate and Other segment of $313 million, as well as a decrease in our Retirement Services segment of $82 million.

Our consolidated net investment earned rate was 3.87% in 2020, a decrease from 4.28% in 2019, primarily due to the unfavorable performance in our alternative portfolio as well as less favorable performance of our fixed and other investment portfolio. Alternative net investment earned rate was (2.58)% in 2020, a decrease from 4.36% in 2019, driven by a decrease in the market value of the equity position in OneMain as well as decreases in credit fund and MidCap returns. Fixed and other net investment earned rate was 4.20% in 2020, a decrease from 4.28% in 2019, driven by lower floating rate investment income and higher investment management fees due primarily to increased invested assets compared to the prior year, partially offset by higher bond call income and mortgage prepayments.

Non-operating Adjustments

Non-operating adjustments decreased by $1.4 billion to $(957) million in 2020 from $421 million in 2019. The decrease in non-operating adjustments was primarily driven by the unfavorable changes in fair value of reinsurance assets and credit loss allowances, partially offset by the favorable change in net FIA derivatives. The change in fair value of reinsurance assets were unfavorable by $1.9 billion due to credit spreads widening, partially offset by a decrease in U.S. Treasury rates. The change in provision for credit loss in 2020 of $284 million was primarily a result of the forecasted economic downturn from the spread of COVID-19. Net FIA derivatives were favorable by $92 million primarily due to the favorable change in discount rates used in our embedded derivative calculations, partially offset by the unfavorable performance of the equity indices to which our FIA policies are linked, primarily the S&P 500 index.

Retirement Services

Retirement Services is comprised of our United States and Bermuda operations which issue and reinsure retirement savings products and institutional products. Retirement Services has retail operations, which provide annuity retirement solutions to our policyholders. Retirement Services also has reinsurance operations, which reinsure FIAs, MYGAs, traditional one year guarantee fixed deferred annuities, immediate annuities and institutional products from our reinsurance partners. In addition, our institutional operations, including funding agreements and PRT obligations, are included in our Retirement Services segment.

Three Months Ended March 31, 2020 Compared to the Three Months Ended March 31, 2019

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income available to common shareholders decreased by $82 million, or 29%, to $204 million in 2020, from $286 million in 2019. Adjusted operating ROE was 10.6%, down from 14.4% in the prior period. The decrease in adjusted operating income available to common shareholders was driven by higher cost of funds, partially offset by higher net investment earnings. Cost of funds were $87 million higher primarily related to unfavorable rider reserves and DAC amortization related to unfavorable impacts from equity market performance and higher k-factors, partially offset by lower gross profits. Net investment earnings increased $13 million primarily driven by $5.9 billion of growth in our average net invested assets from prior year attributed to a strong growth in deposits as well as higher bond call income and mortgage prepayments, partially offset by lower floating rate investment income, alternative investment losses and higher investment management fees due primarily to increased invested assets compared to the prior year.

Net Investment Spread

	Three months ended March 31,	
	2020	2019
Net investment earned rate	4.04%	4.21%
Cost of funds	3.01%	2.85%
Net investment spread	1.03%	1.36%

Net investment spread, which measures the spread on our investment performance less the total cost of our liabilities, decreased 33 basis points to 1.03% in 2020 from 1.36% in 2019. Net investment earned rate decreased due to a decline in alternative net investment earned rate and fixed and other net investment earned rate. The alternative net investments earned rate decreased in 2020 to 0.56% from 2.13% in 2019, driven by lower credit fund returns, mainly PK AirFinance equities, as well as a lower MidCap return mainly due to a decrease in valuation reflecting an increase in loan loss assumptions and lower origination volumes due to the current interest rate environment. The fixed and other net investment earned rate decreased in 2020 to 4.20% from 4.28% in 2019, primarily attributed to lower floating rate income and higher investment management fees due primarily to increased invested assets compared to the prior year, partially offset by higher bond call income and mortgage prepayments.

Cost of funds increased by 16 basis points to 3.01% in 2020, from 2.85% in 2019, primarily driven by unfavorable rider reserves and DAC amortization due to unfavorable impacts from equity market performance and higher k-factors, partially offset by lower gross profits and lower cost of crediting. Cost of crediting decreased 8 basis points primarily driven by favorable rate actions on deferred annuities, a decrease in floating rate funding agreement rates and a decrease in PRT rates.

Investment Margin on Deferred Annuities

	Three months ended March 31,	
	2020	2019
Net investment earned rate	4.04%	4.21%
Cost of crediting on deferred annuities	1.91%	1.98%
Investment margin on deferred annuities	2.13%	2.23%

Investment margin on deferred annuities, which measures our investment performance less the cost of crediting for our deferred annuities, decreased by 10 basis points to 2.13% in 2020, from 2.23% in 2019, driven by a decrease in the net investment earned rate, partially offset by a decrease in the cost of crediting on deferred annuities from the prior year as we continue to focus on pricing discipline, managing interest rates credited to policyholders and managing the cost of options to fund the annual index credits on our FIA products.

Corporate and Other

Corporate and Other includes certain other operations related to our corporate activities such as corporate allocated expenses, merger and acquisition costs, debt costs, preferred stock dividends, certain integration and restructuring costs, certain stock-based compensation and intersegment eliminations. In addition, we also hold capital in excess of the level of capital we hold in Retirement Services to support our operating strategy.

Adjusted Operating Income (Loss) Available to Common Shareholders

Adjusted operating income (loss) available to common shareholders decreased by $313 million to $(312) million in 2020, from $1 million in 2019. The decrease in adjusted operating income (loss) available to common shareholders was primarily driven by a $239 million loss on the strategic investment in Apollo, net of tax, alternative investment losses attributed to a decrease in market value of the equity position in OneMain and lower credit fund income related to CLO equity declines, as well as preferred stock dividends.

Consolidated Investment Portfolio

We had consolidated investments, including related parties, of $122.0 billion and $130.6 billion as of March 31, 2020 and December 31, 2019, respectively. Our investment strategy seeks to achieve sustainable risk-adjusted returns through the disciplined management of our investment portfolio against our long-duration liabilities, coupled with the diversification of risk. The investment strategies utilized by our investment managers focus primarily on a buy and hold asset allocation strategy that may be adjusted periodically in response to changing market conditions and the nature of our liability profile. Substantially all of our investment portfolio is managed by Apollo, which provides a full suite of services, including direct investment management, asset allocation, mergers and acquisition asset diligence, and certain operational support services, including investment compliance, tax, legal and risk management support. Our relationship with Apollo allows us to take advantage of our generally illiquid liability profile by identifying investment opportunities with an emphasis on earning incremental yield by taking liquidity and complexity risk rather than assuming solely credit risk. Apollo's investment team and credit portfolio managers utilize their deep experience to assist us in sourcing and underwriting complex asset classes. Apollo has selected a diverse array of corporate bonds and more structured, but highly rated asset classes. We also maintain holdings in floating rate and less rate-sensitive instruments, including CLOs, non-agency RMBS and various types of structured products. In addition to our fixed income portfolio, we opportunistically allocate 5–10% of our portfolio to alternative investments where we primarily focus on fixed income-like, cash flow-based investments.

Our net invested assets, which are those that directly back our net reserve liabilities as well as surplus assets, were $121.2 billion and $117.5 billion as of March 31, 2020 and December 31, 2019, respectively. Apollo's knowledge of our funding structure and regulatory requirements allows it to design customized strategies and investments for our portfolio. Apollo manages our asset portfolio within the limits and constraints set forth in our Investment and Credit Risk Policy. Under this policy, we set limits on investments in our portfolio by asset class, such as corporate bonds, emerging markets securities, municipal bonds, non-agency RMBS, CMBS, CLOs, commercial mortgage whole loans and mezzanine loans and investment funds. We also set credit risk limits for exposure to a single issuer that vary based on the issuer's ratings. In addition, our investment portfolio is constrained by its scenario-based capital ratio limit and its stressed liquidity limit.

The following table presents the carrying values of our total investments and investments in related parties:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Carrying Value	Percent of Total	Carrying Value	Percent of Total
AFS securities, at fair value	$ 65,671	53.9%	$ 71,374	54.7%
Trading securities, at fair value	1,979	1.6%	2,070	1.6%
Equity securities, at fair value	206	0.2%	247	0.2%
Mortgage loans, net of allowances	14,395	11.8%	14,306	11.0%
Investment funds	740	0.6%	750	0.6%
Policy loans	403	0.3%	417	0.3%
Funds withheld at interest	13,716	11.3%	15,181	11.6%
Derivative assets	1,610	1.3%	2,888	2.2%
Short-term investments	583	0.5%	596	0.5%
Other investments	172	0.1%	158	0.1%
Total investments	99,475	81.6%	107,987	82.8%
Investments in related parties				
AFS securities, at fair value	3,546	2.9%	3,804	2.9%
Trading securities, at fair value	718	0.6%	785	0.6%
Equity securities, at fair value	49	—%	64	0.0%
Mortgage loans, net of allowances	623	0.5%	653	0.5%
Investment funds	4,631	3.8%	3,550	2.7%
Funds withheld at interest	12,452	10.2%	13,220	10.1%
Other investments, net of allowances	475	0.4%	487	0.4%
Total related party investments	22,494	18.4%	22,563	17.2%
Total investments including related party	$ 121,969	100.0%	$ 130,550	100.0%

The decrease in our total investments, including related party, as of March 31, 2020 of $8.6 billion compared to December 31, 2019 was mainly driven by unrealized losses on AFS securities of $6.0 billion attributed to significant widening of credit spreads, partially offset by a decrease in U.S. Treasury rates, a decrease in derivative assets due to unfavorable equity market performance and a decrease in asset purchases from the prior quarter driven by the low interest rate environment as well as an effort to increase liquidity. The decrease was partially offset by growth from organic deposits of $3.9 billion in excess of liability outflows of $2.7 billion as well as an increase in investment funds driven by our investment in Apollo of $850 million.

Our investment portfolio consists largely of high quality fixed maturity securities, loans and short-term investments, as well as additional opportunistic holdings in investment funds and other instruments, including equity holdings. Fixed maturity securities and loans include publicly issued corporate bonds, government and other sovereign bonds, privately placed corporate bonds and loans, mortgage loans, CMBS, RMBS, CLOs, and ABS.

While the substantial majority of our investment portfolio has been allocated to corporate bonds and structured credit products, a key component of our investment strategy is the opportunistic acquisition of investment funds with attractive risk and return profiles. Our investment fund portfolio consists of funds that employ various strategies including real estate and other real asset funds, credit funds and private equity funds. We have a strong preference for assets that have some or all of the following characteristics, among others: (1) investments that constitute a direct investment or an investment in a fund with a high degree of co-investment; (2) investments with credit- or debt-like characteristics (for example, a stipulated maturity and par value), or alternatively, investments with reduced volatility when compared to pure equity; or (3) investments that we believe have less downside risk.

We hold derivatives for economic hedging purposes to reduce our exposure to the cash flow variability of assets and liabilities, equity market risk, interest rate risk, credit risk and foreign exchange risk. Our primary use of derivative instruments relates to providing the income needed to fund the annual indexed credits on our FIA products. We primarily use fixed indexed options to economically hedge FIA products that guarantee the return of principal to the policyholder and credit interest based on a percentage of the gain in a specific market index.

With respect to derivative positions, we transact with highly rated counterparties, and expect the counterparties to fulfill their obligations under the contracts. We generally use industry standard agreements and annexes with bilateral collateral provisions to further reduce counterparty credit exposure.

AFS Securities

We invest in AFS securities with the intent to hold investments to maturity. In selecting investments we attempt to source investments that match our future cash flow needs. However, we may sell any of our investments in advance of maturity in order to timely satisfy our liabilities as they become due or in order to respond to a change in the credit profile or other characteristics of the particular investment.

AFS securities are carried at fair value on our condensed consolidated balance sheets. Changes in fair value of our AFS securities, net of related DAC, DSI and VOBA amortization and the change in rider reserves, are charged or credited to other comprehensive income, net of tax. All changes in the allowance for expected credit losses, whether due to passage of time, change in expected cash flows, or change in fair value are recorded through credit loss expense within investment related gains (losses) on the condensed consolidated statements of income (loss).

The distribution of our AFS securities, including related parties, by type is as follows:

	March 31, 2020					
(In millions, except percentages)	Amortized Cost	Allowance for Credit Losses	Unrealized Gains	Unrealized Losses	Fair Value	Percent of Total
AFS securities						
U.S. government and agencies	$ 37	$ —	$ 3	$ —	$ 40	0.1%
U.S. state, municipal and political subdivisions	815	—	102	(8)	909	1.3%
Foreign governments	278	—	14	(1)	291	0.4%
Corporate	44,315	(15)	2,138	(1,970)	44,468	64.3%
CLO	8,057	—	4	(1,420)	6,641	9.6%
ABS	4,970	(5)	32	(434)	4,563	6.6%
CMBS	2,431	(4)	65	(201)	2,291	3.3%
RMBS	6,673	(54)	116	(267)	6,468	9.3%
Total AFS securities	67,576	(78)	2,474	(4,301)	65,671	94.9%
AFS securities – related party						
Corporate	18	—	1	—	19	—%
CLO	1,226	—	—	(186)	1,040	1.5%
ABS	2,760	—	1	(274)	2,487	3.6%
Total AFS securities – related party	4,004	—	2	(460)	3,546	5.1%
Total AFS securities including related party	$ 71,580	$ (78)	$ 2,476	$ (4,761)	$ 69,217	100.0%

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

(In millions, except percentages)	December 31, 2019				
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Percent of Total
AFS securities					
U.S. government and agencies	$ 35	$ 1	$ —	$ 36	0.0%
U.S. state, municipal and political subdivisions	1,322	220	(1)	1,541	2.1%
Foreign governments	298	29	—	327	0.4%
Corporate	44,106	3,332	(210)	47,228	62.8%
CLO	7,524	21	(196)	7,349	9.8%
ABS	5,018	124	(24)	5,118	6.8%
CMBS	2,304	104	(8)	2,400	3.2%
RMBS	6,872	513	(10)	7,375	9.8%
Total AFS securities	67,479	4,344	(449)	71,374	94.9%
AFS securities – related party					
Corporate	18	1	—	19	0.0%
CLO	951	3	(18)	936	1.3%
ABS	2,814	37	(2)	2,849	3.8%
Total AFS securities – related party	3,783	41	(20)	3,804	5.1%
Total AFS securities including related party	$ 71,262	$ 4,385	$ (469)	$ 75,178	100.0%

We maintain a diversified AFS portfolio of corporate fixed maturity securities across industries and issuers, and a diversified portfolio of structured securities. The composition of our AFS securities, including related parties, is as follows:

(In millions, except percentages)	March 31, 2020		December 31, 2019	
	Fair Value	Percent of Total	Fair Value	Percent of Total
Corporate				
Industrial other[1]	$ 14,483	20.9%	$ 14,956	19.9%
Financial	14,243	20.6%	15,286	20.3%
Utilities	10,255	14.8%	11,217	14.9%
Communication	2,592	3.8%	2,739	3.7%
Transportation	2,914	4.2%	3,049	4.1%
Total corporate	44,487	64.3%	47,247	62.9%
Other government-related securities				
U.S. state, municipal and political subdivisions	909	1.3%	1,541	2.1%
Foreign governments	291	0.4%	327	0.4%
U.S. government and agencies	40	0.1%	36	—%
Total non-structured securities	45,727	66.1%	49,151	65.4%
Structured securities				
CLO	7,681	11.1%	8,285	11.0%
ABS	7,050	10.2%	7,967	10.6%
CMBS	2,291	3.3%	2,400	3.2%
RMBS				
Agency	10	—%	3	—%
Non-agency	6,458	9.3%	7,372	9.8%
Total structured securities	23,490	33.9%	26,027	34.6%
Total AFS securities including related party	$ 69,217	100.0%	$ 75,178	100.0%

[1] *Includes securities within various industry segments including capital goods, basic industry, consumer cyclical, consumer non-cyclical, industrial and technology.*

The fair value of our AFS securities, including related parties, was $69.2 billion and $75.2 billion as of March 31, 2020 and December 31, 2019, respectively. The decrease was mainly driven by the change in unrealized losses on AFS securities. The decrease in unrealized losses on AFS securities was attributed to the significant widening of credit spreads, partially offset by a decrease in U.S. Treasury rates. The overall decrease in AFS securities was partially offset by growth in deposits over liability outflows.

The Securities Valuation Office (SVO) of the NAIC is responsible for the credit quality assessment and valuation of securities owned by state regulated insurance companies. Insurance companies report ownership of securities to the SVO when such securities are eligible for filing on the relevant schedule of the NAIC Financial Statement. The SVO conducts credit analysis on these securities for the purpose of assigning an NAIC designation and/or unit price. Generally, the process for assigning an NAIC designation varies based upon whether a security is considered “filing exempt” (General Designation Process). Subject to certain exceptions, a security is typically considered “filing exempt” if it has been rated by a Nationally Recognized Statistical Rating Organization (NRSRO). For securities that are not “filing exempt,” insurance companies assign temporary designations based upon a subjective evaluation of credit quality. The insurance company must then submit the securities to the SVO within 120 days of acquisition to receive an NAIC designation. For securities considered “filing exempt,” the SVO utilizes the NRSRO rating and assigns an NAIC designation based upon the following system:

NAIC designation	NRSRO equivalent rating
1	AAA/AA/A
2	BBB
3	BB
4	B
5	CCC
6	CC and lower

An important exception to the General Designation Process occurs in the case of certain loan-backed and structured securities (LBaSS). The NRSRO ratings methodology is focused on the likelihood of recovery of all contractual payments, including principal at par, regardless of an investor’s carrying value. In effect, the NRSRO rating assumes that the holder is the original purchaser at par. In contrast, the SVO’s LBaSS methodology is focused on determining the risk associated with the recovery of the amortized cost of each security. Because the NAIC’s methodology explicitly considers amortized cost and the likelihood of recovery of such amount, we view the NAIC’s methodology as the most appropriate means of evaluating the credit quality of our fixed maturity portfolio since a large portion of our holdings were purchased and are carried at significant discounts to par.

The SVO has developed a designation process and provides instruction on both modeled and non-modeled LBaSS. For modeled LBaSS, the process is specific to the non-agency RMBS and CMBS asset classes. In order to establish ratings at the individual security level, the SVO obtains loan-level analysis of each RMBS and CMBS using a selected vendor’s proprietary financial model. The SVO ensures that the vendor has extensive internal quality-control processes in place and the SVO conducts its own quality-control checks of the selected vendor’s valuation process. The SVO has retained the services of Blackrock, Inc. (Blackrock) to model non-agency RMBS and CMBS owned by U.S. insurers for all years presented herein. Blackrock provides five prices (breakpoints), based on each U.S. insurer’s statutory book value price, to utilize in determining the NAIC designation for each modeled LBaSS.

Prior to January 1, 2019, certain non-modeled LBaSS (including CLOs and ABS, other than RMBS and CMBS) underwent ratings evaluation by an NAIC credit rating provider (CRP). Such securities were subject to an exemption from the General Designation Process (MFE Exemption) and received NAIC designations through a prescribed process (MFE Process). Pursuant to the MFE Process, CRP ratings were translated to an NAIC designation equivalent. If the translation process resulted in an NAIC designation equivalent of NAIC 1 or NAIC 6, then such designation was considered the final NAIC designation. If the translation process resulted in an NAIC designation equivalent of NAIC 2 through NAIC 5, then the NAIC designation equivalent was used to select the appropriate breakpoint from a pricing matrix and such breakpoint was applied to the amortized cost or fair value (in each instance, as a percentage of par), as applicable, to determine the final NAIC designation. Effective January 1, 2019, the MFE Exemption was eliminated, and as a result, NAIC designations for all non-modeled LBaSS are thereafter determined through the General Designation Process.

The NAIC designation determines the associated level of risk-based capital (RBC) that an insurer is required to hold for all securities owned by the insurer. In general, under the modeled LBaSS process and, prior to January 1, 2019, the non-modeled LBaSS process, the larger the discount to par value at the time of determination, the higher the NAIC designation the LBaSS will have.

A summary of our AFS securities, including related parties, by NAIC designation is as follows:

	March 31, 2020			December 31, 2019		
(In millions, except percentages)	Amortized Cost	Fair Value	Percent of Total	Amortized Cost	Fair Value	Percent of Total
NAIC designation						
1	$ 36,068	$ 35,844	51.8%	$ 36,392	$ 38,667	51.4%
2	30,894	29,432	42.5%	30,752	32,336	43.0%
Total investment grade	66,962	65,276	94.3%	67,144	71,003	94.4%
3	3,677	3,117	4.5%	3,237	3,300	4.4%
4	805	710	1.0%	740	740	1.0%
5	93	72	0.1%	102	94	0.1%
6	43	42	0.1%	39	41	0.1%
Total below investment grade	4,618	3,941	5.7%	4,118	4,175	5.6%
Total AFS securities including related party	$ 71,580	$ 69,217	100.0%	$ 71,262	$ 75,178	100.0%

A significant majority of our AFS portfolio, 94.3% and 94.4% as of March 31, 2020 and December 31, 2019, respectively, was invested in assets considered investment grade with a NAIC designation of 1 or 2.

A summary of our AFS securities, including related parties, by NRSRO ratings is set forth below:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
NRSRO rating agency designation				
AAA/AA/A	$ 26,515	38.3%	$ 28,299	37.7%
BBB	25,198	36.4%	29,032	38.6%
Non-rated[1]	10,268	14.8%	10,014	13.3%
Total investment grade	61,981	89.5%	67,345	89.6%
BB	3,193	4.6%	3,403	4.5%
B	810	1.2%	813	1.1%
CCC	1,722	2.5%	1,981	2.6%
CC and lower	918	1.3%	1,076	1.4%
Non-rated[1]	593	0.9%	560	0.8%
Total below investment grade	7,236	10.5%	7,833	10.4%
Total AFS securities including related party	$ 69,217	100.0%	$ 75,178	100.0%

[1] *Securities denoted as non-rated by the NRSRO were classified as investment or non-investment grade according to the security's respective NAIC designation. With respect to modeled LBaSS, and prior to January 1, 2019, non-modeled LBaSS, the NAIC designation methodology differs in significant respects from the NRSRO rating methodology.*

Consistent with the NAIC Process and Procedures Manual, an NRSRO rating was assigned based on the following criteria: (a) the equivalent S&P rating when the security is rated by one NRSRO; (b) the equivalent S&P rating of the lowest NRSRO when the security is rated by two NRSROs; and (c) the equivalent S&P rating of the second lowest NRSRO when the security is rated by three or more NRSROs. If the lowest two NRSRO ratings are equal, then such rating will be the assigned rating. NRSRO ratings available for the periods presented were S&P, Fitch, Moody's Investor Service, DBRS, and Kroll Bond Rating Agency, Inc.

The portion of our AFS portfolio that was considered below investment grade based on NRSRO ratings was 10.5% and 10.4% as of March 31, 2020 and December 31, 2019, respectively. The primary driver of the difference in the percentage of securities considered below investment grade by NRSROs as compared to the securities considered below investment grade by the NAIC is the difference in methodologies between the NRSRO and NAIC for RMBS due to investments acquired and/or carried at a discount to par value, as discussed above.

As of March 31, 2020 and December 31, 2019, non-rated securities were comprised 64% and 61%, respectively, of corporate private placement securities for which we have not sought individual ratings from the NRSRO, and 21% and 24%, respectively, were comprised of RMBS, many of which were acquired at a significant discount to par. We rely on internal analysis and designations assigned by the NAIC to evaluate the credit risk of our portfolio. As of March 31, 2020 and December 31, 2019, 95% and 95%, respectively, of the non-rated securities were designated NAIC 1 or 2.

Asset-backed Securities – We invest in ABS which are securitized by pools of assets such as consumer loans, automobile loans, student loans, insurance-linked securities, operating cash flows of corporations and cash flows from various types of business equipment. Our ABS holdings were $7.1 billion and $8.0 billion as of March 31, 2020 and December 31, 2019, respectively. The decrease in our ABS portfolio is mainly driven by sales and maturities in excess of new purchases in an effort to increase liquidity as well as unrealized losses due to credit spreads widening, partially offset by the lower interest rate environment. As of March 31, 2020 and December 31, 2019, our ABS portfolio included $6.6 billion (94% of the total) and $7.4 billion (92% of the total), respectively, of securities that are considered investment grade based on NAIC designations, while $6.6 billion (93% of the total) and $7.4 billion (92% of the total), respectively, of securities were considered investment grade based on NRSRO ratings.

Collateralized Loan Obligations – We also invest in CLOs which pay principal and interest from cash flows received from underlying corporate loans. These holdings were $7.7 billion and $8.3 billion as of March 31, 2020 and December 31, 2019, respectively.

A summary of our AFS CLO portfolio, including related parties, by NAIC designations and NRSRO quality ratings is as follows:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
NAIC designation				
1	$ 4,888	63.6%	$ 4,626	55.9%
2	2,738	35.7%	3,499	42.2%
Total investment grade	7,626	99.3%	8,125	98.1%
3	48	0.6%	133	1.6%
4	7	0.1%	20	0.2%
5	—	—%	7	0.1%
6	—	—%	—	—%
Total below investment grade	55	0.7%	160	1.9%
Total AFS CLO including related party	$ 7,681	100.0%	$ 8,285	100.0%
NRSRO rating agency designation				
AAA/AA/A	$ 4,888	63.6%	$ 4,626	55.9%
BBB	2,738	35.7%	3,499	42.2%
Non-rated	—	—%	—	—%
Total investment grade	7,626	99.3%	8,125	98.1%
BB	48	0.6%	133	1.6%
B	7	0.1%	20	0.2%
CCC	—	—%	7	0.1%
CC and lower	—	—%	—	—%
Non-rated	—	—%	—	—%
Total below investment grade	55	0.7%	160	1.9%
Total AFS CLO including related party	$ 7,681	100.0%	$ 8,285	100.0%

As of March 31, 2020 and December 31, 2019, a substantial majority of our AFS CLO portfolio, 99.3% and 98.1%, respectively, was invested in assets considered to be investment grade based upon application of the NAIC's methodology and based on NRSRO ratings. The decrease in our CLO portfolio is mainly driven by unrealized losses due to credit spreads widening, partially offset by the lower interest rate environment.

Commercial Mortgage-backed Securities – A portion of our AFS portfolio is invested in CMBS. CMBS are constructed from pools of commercial mortgages. These holdings were $2.3 billion and $2.4 billion as of March 31, 2020 and December 31, 2019. As of March 31, 2020 and December 31, 2019, our CMBS portfolio included $2.1 billion (90% of the total) and $2.1 billion (89% of the total), respectively, of securities that are considered investment grade based on NAIC designations, while $1.7 billion (74% of the total) and $1.7 billion (72% of the total), respectively, of securities were considered investment grade based on NRSRO ratings.

Residential Mortgage-backed Securities – A portion of our AFS portfolio is invested in RMBS, which are securities constructed from pools of residential mortgages. These holdings were $6.5 billion and $7.4 billion as of March 31, 2020 and December 31, 2019, respectively.

A summary of our AFS RMBS portfolio by NAIC designations and NRSRO quality ratings is as follows:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
NAIC designation				
1	$ 5,915	91.4%	$ 6,701	90.9%
2	239	3.7%	330	4.5%
Total investment grade	6,154	95.1%	7,031	95.4%
3	258	4.0%	289	3.9%
4	49	0.8%	52	0.7%
5	5	0.1%	3	—%
6	2	—%	—	—%
Total below investment grade	314	4.9%	344	4.6%
Total AFS RMBS	$ 6,468	100.0%	$ 7,375	100.0%
NRSRO rating agency designation				
AAA/AA/A	$ 668	10.3%	$ 715	9.7%
BBB	507	7.8%	606	8.2%
Non-rated[1]	2,116	32.7%	2,428	32.9%
Total investment grade	3,291	50.8%	3,749	50.8%
BB	266	4.1%	281	3.8%
B	217	3.4%	232	3.2%
CCC	1,643	25.4%	1,890	25.6%
CC and lower	918	14.2%	1,074	14.6%
Non-rated[1]	133	2.1%	149	2.0%
Total below investment grade	3,177	49.2%	3,626	49.2%
Total AFS RMBS	$ 6,468	100.0%	$ 7,375	100.0%

[1] *Securities denoted as non-rated by the NRSRO were classified as investment or non-investment grade according to the security's respective NAIC designations. The NAIC designation methodology differs in significant respects from the NRSRO rating methodology.*

A significant majority of our RMBS portfolio, 95.1% and 95.4% as of March 31, 2020 and December 31, 2019, respectively, was invested in assets considered to be investment grade based upon an application of the NAIC designations. The NAIC's methodology with respect to RMBS gives explicit effect to the amortized cost at which an insurance company carries each such investment. Because we invested in RMBS after the stresses related to U.S. housing had caused significant downward pressure on prices of RMBS, we carry most of our investments in RMBS at significant discounts to par value, which results in an investment grade NAIC designation. In contrast, our understanding is that in setting ratings, NRSROs focus on the likelihood of recovering all contractual payments including principal at par value. As a result of a fundamental difference in approach, as of March 31, 2020 and December 31, 2019, NRSRO characterized 50.8% and 50.8%, respectively, of our RMBS portfolio as investment grade. The decrease in our RMBS portfolio is mainly driven by unrealized losses due to credit spreads widening, partially offset by the lower interest rate environment.

Unrealized Losses

Our investments in AFS securities, including related parties, are reported at fair value with changes in fair value recorded in other comprehensive income. Certain of our AFS securities, including related parties, have experienced declines in fair value that we consider temporary in nature. As of March 31, 2020, our AFS securities, including related party, had a fair value of $69.2 billion, which was 3.3% below amortized cost of $71.6 billion. As of December 31, 2019, our AFS securities, including related party, had a fair value of $75.2 billion, which was 5.5% above amortized cost of $71.3 billion. These investments are held to support our product liabilities, and we currently have the intent and ability to hold these securities until sale or maturity, and believe the securities will recover the amortized cost basis prior to sale or maturity.

The following tables reflect the unrealized losses on the AFS portfolio, including related parties, for which an allowance for credit losses has not been recorded, by NAIC designations:

	March 31, 2020					
(In millions, except percentages)	Amortized Cost of AFS Securities with Unrealized Loss	Gross Unrealized Losses	Fair Value of AFS Securities with Unrealized Loss	Fair Value to Amortized Cost Ratio	Fair Value of Total AFS Securities	Gross Unrealized Losses to Total AFS Fair Value
NAIC designation						
1	$ 17,205	$ (1,595)	$ 15,610	90.7%	$ 35,844	(4.4)%
2	17,337	(2,358)	14,979	86.4%	29,432	(8.0)%
Total investment grade	34,542	(3,953)	30,589	88.6%	65,276	(6.1)%
3	3,027	(554)	2,473	81.7%	3,117	(17.8)%
4	671	(88)	583	86.9%	710	(12.4)%
5	66	(16)	50	75.8%	72	(22.2)%
6	39	(2)	37	94.9%	42	(4.8)%
Total below investment grade	3,803	(660)	3,143	82.6%	3,941	(16.7)%
Total	$ 38,345	$ (4,613)	$ 33,732	88.0%	$ 69,217	(6.7)%

The following tables reflect the unrealized losses on the AFS portfolio, including related parties, by NAIC designations:

	December 31, 2019					
(In millions, except percentages)	Amortized Cost of AFS Securities with Unrealized Loss	Gross Unrealized Losses	Fair Value of AFS Securities with Unrealized Loss	Fair Value to Amortized Cost Ratio	Fair Value of Total AFS Securities	Gross Unrealized Losses to Total AFS Fair Value
NAIC designation						
1	$ 5,672	$ (160)	$ 5,512	97.2%	$ 38,667	(0.4)%
2	5,252	(223)	5,029	95.8%	32,336	(0.7)%
Total investment grade	10,924	(383)	10,541	96.5%	71,003	(0.5)%
3	945	(41)	904	95.7%	3,300	(1.2)%
4	338	(34)	304	89.9%	740	(4.6)%
5	79	(11)	68	86.1%	94	(11.7)%
6	1	—	1	100.0%	41	— %
Total below investment grade	1,363	(86)	1,277	93.7%	4,175	(2.1)%
Total	$ 12,287	$ (469)	$ 11,818	96.2%	$ 75,178	(0.6)%

The gross unrealized losses on AFS securities, including related parties, were $4.6 billion and $469 million as of March 31, 2020 and December 31, 2019, respectively. The increase in unrealized losses was driven by credit spreads widening, partially offset by the decrease in U.S. Treasury rates during the three months ended March 31, 2020.

As of March 31, 2020 and December 31, 2019, we held $4.4 billion and $5.6 billion, respectively in energy sector fixed maturity securities, or 6% and 7% of the total fixed maturity securities, respectively, including related parties for each period. The gross unrealized capital losses on these securities were $839 million and $65 million, or 18% and 14% of the total unrealized losses, respectively.

Provision for Credit Losses

For our credit loss accounting policies and the assumptions used in the allowances, see *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* and *Note 2 – Investments* to the condensed consolidated financial statements, as well as *Critical Accounting Estimates and Judgments.*

During the three months ended March 31, 2020, we recorded a change in provision for credit losses on AFS securities of $61 million, which were primarily driven by an increase in RMBS and corporate allowances. The intent-to-sell impairments for the three months ended March 31, 2020 were $13 million primarily related to corporates. During the three months ended March 31, 2019, we recorded $1 million of OTTI impairments. The annualized intent-to-sell impairments we experienced for the three months ended March 31, 2020 translate into 4 basis points of average net invested assets, which exclude the ACRA noncontrolling interest. The annualized OTTI losses we experienced for the three months ended March 31, 2019 translate into less than 1 basis point of average net invested assets.

International Exposure

A portion of our AFS securities are invested in securities with international exposure. As of March 31, 2020 and December 31, 2019, 32% of the carrying value of our AFS securities, including related parties, was comprised of securities of issuers based outside of the United States and debt securities of foreign governments. These securities are either denominated in U.S. dollars or do not expose us to significant foreign currency risk as a result of foreign currency swap arrangements.

The following table presents our international exposure in our AFS portfolio, including related parties, by country or region:

	March 31, 2020			December 31, 2019		
(In millions, except percentages)	Amortized Cost	Fair Value	Percent of Total	Amortized Cost	Fair Value	Percent of Total
Country of risk						
Ireland	$ 1,242	$ 1,076	4.8%	$ 1,109	$ 1,137	4.7%
Italy	6	7	—%	6	7	—%
Spain	66	67	0.3%	66	71	0.2%
Total Ireland, Italy, Greece, Spain and Portugal[1]	1,314	1,150	5.1%	1,181	1,215	4.9%
Other Europe	7,245	7,044	31.7%	7,333	7,711	32.1%
Total Europe	8,559	8,194	36.8%	8,514	8,926	37.0%
Non-U.S. North America	12,326	10,736	48.3%	11,650	11,670	48.5%
Australia & New Zealand	1,821	1,842	8.3%	1,853	1,966	8.2%
Central & South America	487	460	2.1%	473	501	2.1%
Africa & Middle East	411	402	1.8%	350	379	1.6%
Asia/Pacific	610	598	2.7%	580	616	2.6%
Total	$ 24,214	$ 22,232	100.0%	$ 23,420	$ 24,058	100.0%

[1] *As of each of the respective periods, we had no holdings in Greece or Portugal.*

Approximately 96.2% and 95.8% of these securities are investment grade by NAIC designation as of March 31, 2020 and December 31, 2019, respectively. As of March 31, 2020, 10% of our AFS securities, including related parties, were invested in CLOs of Cayman Islands issuers (included in Non-U.S. North America for which underlying investments are largely loans to U.S. issuers) and 22% were invested in securities of other non-U.S. issuers.

Portugal, Ireland, Italy, Greece and Spain continue to represent credit risk as economic conditions in these countries continue to be volatile, especially within the financial and banking sectors. We had $1.2 billion of exposure in these countries as of March 31, 2020 and December 31, 2019.

As of March 31, 2020, we held United Kingdom and Channel Islands AFS securities of $2.9 billion, or 4.2% of our AFS securities, including related parties. As of March 31, 2020, these securities were in a net unrealized loss position of $141 million. Our investment managers analyze each holding for credit risk by economic and other factors of each country and industry.

Trading Securities

Trading securities, including related parties, were $2.7 billion and $2.9 billion as of March 31, 2020 and December 31, 2019, respectively. Trading securities are primarily comprised of AmerUs Closed Block securities for which we have elected the fair value option valuation, CLO equity tranche securities, structured securities with embedded derivatives, and investments which support various reinsurance arrangements.

Mortgage Loans

The following is a summary of our mortgage loan portfolio by collateral type:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Net Carrying Value	Percent of Total	Net Carrying Value	Percent of Total
Property type				
Office building	$ 3,465	23.1%	$ 2,899	19.3%
Retail	2,117	14.1%	2,182	14.6%
Apartment	2,333	15.5%	2,142	14.3%
Hotels	1,062	7.1%	1,104	7.4%
Industrial	1,402	9.3%	1,448	9.7%
Other commercial[1]	699	4.7%	730	4.9%
Total net commercial mortgage loans	11,078	73.8%	10,505	70.2%
Residential loans	3,940	26.2%	4,454	29.8%
Total mortgage loans, net of allowances	$ 15,018	100.0%	$ 14,959	100.0%

[1] *Other commercial loans include investments in nursing homes, other healthcare institutions, parking garages, storage facilities and other commercial properties.*

We invest a portion of our investment portfolio in mortgage loans, which are generally comprised of high quality commercial first lien and mezzanine real estate loans. Our mortgage loan holdings were $15.0 billion as of both March 31, 2020 and December 31, 2019. This included $2.0 billion and $1.9 billion of mezzanine mortgage loans as of March 31, 2020 and December 31, 2019, respectively. We have acquired mortgage loans through acquisitions and reinsurance arrangements, as well as through an active program to invest in new mortgage loans. We invest in CMLs on income producing properties including hotels, apartments, retail and office buildings, and other commercial and industrial properties. Our RML portfolio primarily consists of first lien RMLs collateralized by properties located in the U.S. Loan-to-value ratios at the time of loan approval are generally 75% or less.

Our mortgage loans are primarily stated at unpaid principal balance, adjusted for any unamortized premium or discount, and net of credit loss allowances. Interest income is accrued on the principal amount of the loan based on the loan's contractual interest rate. Amortization of premiums and discounts is recorded using the effective interest method. Interest income, amortization of premiums and discounts, and prepayment fees are reported in net investment income.

It is our policy to cease to accrue interest on loans that are over 90 days delinquent. For loans less than 90 days delinquent, interest is accrued unless it is determined that the accrued interest is not collectible. If a loan becomes over 90 days delinquent, it is our general policy to initiate foreclosure proceedings unless a workout arrangement to bring the loan current is in place. As of March 31, 2020 and December 31, 2019, we had $75 million and $67 million, respectively, of mortgage loans that were 90 days past due, of which $36 million and $33 million, respectively, were in the process of foreclosure. We will continue to evaluate these policies with regard to the economic downturn brought about by the spread of COVID-19.

See *Note 2 – Investments* to the condensed consolidated financial statements for information regarding credit loss allowance for collection loss, loan-to-value, and debt service coverage.

As of March 31, 2020, we had valuation allowances of $424 million comprising of $343 million of CML and $81 million of RML allowances. During the three months ended March 31, 2020, we recorded a change in provision for credit losses on CMLs of $166 million and RMLs of $37 million. The increase in provision for credit losses was primarily a result of the economic downturn experienced from the spread of COVID-19. As of December 31, 2019, we had a valuation allowance of $11 million.

Investment Funds

Our investment funds investment strategy primarily focuses on funds with core holdings of credit assets, real assets, real estate, preferred equity and income producing assets. Our investment funds generally meet the definition of a VIE, and in certain cases these investment funds are consolidated in our financial statements because we meet the criteria of the primary beneficiary.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following table illustrates our investment funds, including related party:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Carrying Value	Percent of Total	Carrying Value	Percent of Total
Investment funds				
Real estate	$ 284	5.3%	$ 277	6.4%
Credit funds	122	2.3%	153	3.6%
Private equity	244	4.5%	236	5.5%
Real assets	89	1.7%	83	2.0%
Natural resources	1	—%	1	—%
Total investment funds	740	13.8%	750	17.5%
Investment funds – related parties				
Differentiated investments				
MidCap	508	9.5%	547	12.7%
AmeriHome	508	9.5%	487	11.3%
Catalina	296	5.5%	271	6.3%
Athora	130	2.4%	132	3.1%
Venerable	110	2.1%	99	2.3%
Other	281	5.2%	222	5.2%
Total differentiated investments	1,833	34.2%	1,758	40.9%
Real estate	775	14.4%	853	19.8%
Credit funds	446	8.3%	370	8.6%
Private equity	227	4.2%	105	2.4%
Real assets	256	4.8%	182	4.2%
Natural resources	200	3.7%	163	3.8%
Public equities	44	0.8%	119	2.8%
Investment in Apollo	850	15.8%	—	—%
Total investment funds – related parties	4,631	86.2%	3,550	82.5%
Total investment funds including related parties	$ 5,371	100.0%	$ 4,300	100.0%

Overall, the total investment funds, including related party, were $5.4 billion and $4.3 billion, respectively, as of March 31, 2020 and December 31, 2019. See *Note 2 – Investments* to the condensed consolidated financial statements for further discussion regarding how we account for our investment funds. Our investment fund portfolio is subject to a number of market related risks including interest rate risk and equity market risk. Interest rate risk represents the potential for changes in the investment fund's net asset values resulting from changes in the general level of interest rates. Equity market risk represents potential for changes in the investment fund's net asset values resulting from changes in equity markets or from other external factors which influence equity markets. These risks expose us to potential volatility in our earnings period-over-period. We actively monitor our exposure to these risks. The increase in investment funds, including related party, was primarily driven by our investment in Apollo of $850 million at March 31, 2020.

Funds Withheld at Interest

Funds withheld at interest represents a receivable for amounts contractually withheld by ceding companies in accordance with modco and funds withheld reinsurance agreements in which we act as the reinsurer. Generally, assets equal to statutory reserves are withheld and legally owned by the ceding company. We hold funds withheld at interest receivables, including those held with VIAC and Lincoln. As of March 31, 2020, the significant majority of the ceding companies holding the assets pursuant to such reinsurance agreements had a financial strength rating of B+ or better (based on an A.M. Best scale).

The funds withheld at interest is comprised of the host contract and an embedded derivative. We are subject to the investment performance on the withheld assets with the total return directly impacting the host contract and the embedded derivative. Interest accrues at a risk-free rate on the host receivable and is recorded as net investment income in the condensed consolidated statements of income (loss). The embedded derivative in our reinsurance agreements is similar to a total return swap on the income generated by the underlying assets held by the ceding companies. The change in the embedded derivative is recorded in investment related gains (losses). Although we do not directly control the underlying investments in the funds withheld at interest, in each instance the ceding company has hired Apollo to manage the withheld assets in accordance with our investment guidelines.

The following summarizes the underlying investment composition of the funds withheld at interest, including related parties:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Carrying Value	Percent of Total	Carrying Value	Percent of Total
Fixed maturity securities				
U.S. government and agencies	$ 15	0.1 %	$ 15	0.1 %
U.S. state, municipal and political subdivisions	324	1.2 %	482	1.7 %
Foreign governments	134	0.5 %	143	0.5 %
Corporate	13,156	50.3 %	14,590	51.4 %
CLO	2,283	8.7 %	2,586	9.1 %
ABS	2,149	8.2 %	2,510	8.8 %
CMBS	475	1.8 %	756	2.7 %
RMBS	1,302	5.0 %	1,482	5.2 %
Equity securities	61	0.2 %	74	0.3 %
Mortgage loans	4,411	16.9 %	4,357	15.3 %
Investment funds	927	3.6 %	807	2.8 %
Derivative assets	65	0.2 %	224	0.8 %
Short-term investments	127	0.5 %	157	0.6 %
Cash and cash equivalents	807	3.1 %	239	0.8 %
Other assets and liabilities	(68)	(0.3)%	(21)	(0.1)%
Total funds withheld at interest including related party	$ 26,168	100.0 %	$ 28,401	100.0 %

As of March 31, 2020 and December 31, 2019, we held $26.2 billion and $28.4 billion, respectively, of funds withheld at interest receivables, including related party. Approximately 94.1% and 94.4% of the fixed maturity securities within the funds withheld at interest are investment grade by NAIC designation as of March 31, 2020 and December 31, 2019, respectively. The decrease in funds withheld at interest receivables, including related party, was primarily driven by unrealized losses on fixed maturity securities due to credit spreads widening, partially offset by the decrease in U.S. Treasury rates, as well as run-off in the underlying blocks of business.

Derivative Instruments

We hold derivative instruments for economic hedging purposes to reduce our exposure to cash flow variability of assets and liabilities, equity market risk, interest rate risk, credit risk and foreign exchange risk. The types of derivatives we may use include interest rate swaps, foreign currency swaps and forward contracts, total return swaps, credit default swaps, variance swaps, futures and fixed indexed options.

A discussion regarding our derivative instruments and how such instruments are used to manage risk is included in *Note 3 – Derivative Instruments* to the condensed consolidated financial statements.

As part of our risk management strategies, management continually evaluates our derivative instrument holdings and the effectiveness of such holdings in addressing risks identified in our operations.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Net Invested Assets

The following summarizes our net invested assets:

(In millions, except percentages)	March 31, 2020 Net Invested Asset Value[1]	March 31, 2020 Percent of Total	December 31, 2019 Net Invested Asset Value[1]	December 31, 2019 Percent of Total
Corporate	$ 54,666	45.1%	$ 55,077	46.9%
CLO	11,118	9.2%	10,223	8.7%
Credit	65,784	54.3%	65,300	55.6%
RMBS	8,123	6.7%	8,394	7.1%
CML	14,954	12.3%	14,038	12.0%
RML	4,112	3.4%	4,490	3.8%
CMBS	2,846	2.3%	2,930	2.5%
Real estate	30,035	24.7%	29,852	25.4%
ABS	10,292	8.5%	10,317	8.8%
Alternative investments	5,787	4.8%	5,586	4.8%
State, municipal, political subdivisions and foreign government	1,557	1.3%	2,260	1.9%
Equity securities	369	0.3%	365	0.3%
Short-term investments	604	0.5%	624	0.5%
U.S. government and agencies	51	—%	49	—%
Other investments	18,660	15.4%	19,201	16.3%
Cash and equivalents	4,718	3.9%	1,958	1.7%
Policy loans and other	1,153	1.0%	1,175	1.0%
Net invested assets excluding investment in Apollo	120,350	99.3%	117,486	100.0%
Investment in Apollo	850	0.7%	—	—%
Net invested assets	$ 121,200	100.0%	$ 117,486	100.0%

[1] *See Key Operating and Non-GAAP Measures for the definition of net invested assets.*

Our net invested assets were $121.2 billion and $117.5 billion as of March 31, 2020 and December 31, 2019, respectively. As of March 31, 2020, our net invested assets were mainly comprised of 45.1% of corporate securities, 26.7% of structured securities, 15.7% of mortgage loans and 4.8% of alternative investments. Corporate securities included $16.0 billion of private placements, which represented 13.2% of our net invested assets. The increase in net invested assets as of March 31, 2020 from December 31, 2019 was primarily driven by growth in deposits over liability outflows, and our investment in Apollo of $850 million and reinvestment of earnings.

In managing our business we utilize net invested assets as presented in the above table. Net invested assets do not correspond to total investments, including related parties, on our condensed consolidated balance sheets, as discussed previously in *Key Operating and Non-GAAP Measures*. Net invested assets represent the investments that directly back our net reserve liabilities and surplus assets. We believe this view of our portfolio provides a view of the assets for which we have economic exposure. We adjust the presentation for funds withheld and modco transactions to include or exclude the underlying investments based upon the contractual transfer of economic exposure to such underlying investments. We also adjust for VIEs in order to show the net investment in the funds, which are included in the alternative investments line above as well as adjust for the allowance for credit losses. Net invested assets includes our proportionate share of ACRA investments, based on our economic ownership, but excludes the proportionate share of investments associated with the noncontrolling interest.

Net invested assets is utilized by management to evaluate our investment portfolio. Net invested assets, excluding our strategic investment in Apollo, is used in the computation of net investment earned rate, which allows us to analyze the profitability of our investment portfolio. Net invested assets is also used in our risk management processes for asset purchases, product design and underwriting, stress scenarios, liquidity, and ALM.

Net Alternative Investments

The following summarizes our alternative investments:

	March 31, 2020		December 31, 2019	
(In millions, except percentages)	Net Invested Asset Value	Percent of Total	Net Invested Asset Value	Percent of Total
Retirement Services				
Differentiated investments				
AmeriHome	$ 621	10.7%	$ 595	10.7%
MidCap	508	8.8%	547	9.8%
Catalina	296	5.1%	271	4.9%
Venerable	110	1.9%	99	1.8%
Other	332	5.7%	208	3.7%
Total differentiated investments	1,867	32.2%	1,720	30.9%
Real estate	1,410	24.4%	1,430	25.6%
Credit	950	16.4%	968	17.3%
Private equity	495	8.6%	378	6.8%
Real assets	385	6.6%	349	6.2%
Natural resources	61	1.1%	51	0.9%
Other	58	1.0%	58	1.0%
Total Retirement Services alternative investments	5,226	90.3%	4,954	88.7%
Corporate and Other				
Athora	140	2.4%	140	2.5%
Credit	88	1.5%	128	2.3%
Natural resources	289	5.0%	245	4.4%
Public equities[1]	44	0.8%	119	2.1%
Total Corporate and Other alternative investments	561	9.7%	632	11.3%
Net alternative investments	$ 5,787	100.0%	$ 5,586	100.0%

[1] *As of March 31, 2020, public equities is exclusively comprised of an investment in OneMain Holdings, Inc. (ticker: OMF).*

Net alternative investments were $5.8 billion and $5.6 billion as of March 31, 2020 and December 31, 2019, respectively, representing 4.8% of our net invested assets portfolio as of both March 31, 2020 and December 31, 2019, respectively.

Net alternative investments do not correspond to the total investment funds, including related parties and VIEs, on our condensed consolidated balance sheets. As discussed above in the net invested assets section, we adjust the GAAP presentation for funds withheld, modco and VIEs. The investment in Apollo is excluded from our alternative investments, while we include CLO equity tranche securities in alternative investments due to their underlying characteristics and equity-like features.

Through our relationship with Apollo, we have indirectly invested in companies that meet the key characteristics we look for in net alternative investments. Two of our largest alternative investments are in asset originators, MidCap and AmeriHome, both of which, from time to time, provide us with access to assets for our investment portfolio.

MidCap

Our equity investment in MidCap is held indirectly through CoInvest VII, of which MidCap constitutes substantially all of the fund's investments. MidCap is a commercial finance company that provides various financial products to middle-market businesses in multiple industries, primarily located in the U.S. MidCap primarily originates and invests in commercial and industrial loans, including senior secured corporate loans, working capital loans collateralized mainly by accounts receivable and inventory, senior secured loans collateralized by portfolios of commercial and consumer loans and related products and secured loans to highly capitalized pharmaceutical and medical device companies, and commercial real estate loans, including multifamily independent-living properties, assisted living, skilled nursing and medical office properties, warehouse, office building, hotel and other commercial use properties and multifamily properties. MidCap originates and acquires loans using borrowings under financing arrangements that it has in place with numerous financial institutions. MidCap's earnings are primarily driven by the difference between the interest earned on its loan portfolio and the interest accrued under its outstanding borrowings. As a result, MidCap is primarily exposed to the credit risk of its loan counterparties and prepayment risk. Additionally, financial results are influenced by related levels of middle-market business investment and interest rates.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Our alternative investment in CoInvest VII is substantially comprised of its investment in MidCap, which had a carrying value of $508 million and $547 million as of March 31, 2020 and December 31, 2019, respectively. Our investment in CoInvest VII largely reflects any contributions to and distributions from CoInvest VII and the fair value of MidCap. CoInvest VII returned a net investment earned rate of (16.06)% and 9.50% for the three months ended March 31, 2020 and 2019, respectively. Alternative investment income (loss) from CoInvest VII was $(21) million and $14 million for the three months ended March 31, 2020 and 2019, respectively. The decrease in alternative investment income for the three months ended March 31, 2020 compared to 2019 was mainly due to a decrease in valuation reflecting an increase in loan loss assumptions and lower origination volumes due to the current interest rate environment.

AmeriHome

Our equity investment in AmeriHome is held indirectly through A-A Mortgage, of which AmeriHome is currently the fund's only investment. AmeriHome is a mortgage origination platform and an aggregator of mortgage servicing rights. AmeriHome acquires mortgage loans from retail originators and re-sells the loans to the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association and other investors. AmeriHome retains the mortgage servicing rights on the loans that it sells and employs a subservicer to perform servicing operations, including payment collection. AmeriHome's earnings are primarily driven by two sources: gains or losses on the sale of mortgage loans and the difference between the fee that it charges for mortgage servicing and the fee charged by the subservicer. As a result, AmeriHome's financial results are influenced by interest rates and related housing demand. AmeriHome is primarily exposed to credit risk related to the accuracy of the representations and warranties in the loans that AmeriHome acquires and prepayment risk, which prematurely terminates fees related to mortgage servicing.

Our alternative investment in A-A Mortgage had a carrying value of $621 million and $595 million as of March 31, 2020 and December 31, 2019, respectively. Our investment in A-A Mortgage represents our proportionate share of its net asset value, which largely reflects any contributions to and distributions from A-A Mortgage and the fair value of AmeriHome. A-A Mortgage returned a net investment earned rate of 16.93% and 14.27% for the three months ended March 31, 2020 and 2019, respectively. Alternative investment income from A-A Mortgage was $26 million and $20 million for the three months ended March 31, 2020 and 2019, respectively.

Public Equities

We indirectly hold public equity positions through our equity investments in a few alternative investments. Although the net invested asset value of these securities is minor, such securities have resulted in volatility in our statements of income (loss) in recent periods. As of March 31, 2020 and December 31, 2019, we indirectly held public equity positions of $44 million and $119 million, respectively. As of March 31, 2020 and December 31, 2019, we held approximately 2.8 million shares of OneMain with a market value of $44 million and $119 million, respectively. The decrease in market value is driven by the decline in share price, partially offset by dividend received in 2020.

Non-GAAP Measure Reconciliations

The reconciliations to the nearest GAAP measure for adjusted operating income (loss) available to common shareholders is included in the *Consolidated Results of Operations* section.

The reconciliation of total AHL shareholders' equity to total adjusted AHL common shareholders' equity, which is included in adjusted book value per common share, adjusted debt to capital ratio and adjusted operating ROE, is as follows:

(In millions)	March 31, 2020	December 31, 2019
Total AHL shareholders' equity	$ 9,940	$ 13,391
Less: Preferred stock	1,172	1,172
Total AHL common shareholders' equity	8,768	12,219
Less: AOCI	(1,174)	2,281
Less: Accumulated change in fair value of reinsurance assets	(155)	493
Total adjusted AHL common shareholders' equity	$ 10,097	$ 9,445
Segment adjusted AHL common shareholders' equity		
Retirement Services	$ 8,002	$ 7,443
Corporate and Other	2,095	2,002
Total adjusted AHL common shareholders' equity	$ 10,097	$ 9,445

The reconciliation of average AHL shareholders' equity to average adjusted AHL common shareholders' equity, which is included in adjusted operating ROE is as follows:

	Three months ended March 31,	
(In millions)	2020	2019
Average AHL shareholders' equity	$ 11,666	$ 9,197
Less: Average preferred stock	1,172	—
Less: Average AOCI	554	117
Less: Average accumulated change in fair value of reinsurance assets	169	117
Average adjusted AHL common shareholders' equity	$ 9,771	$ 8,963
Segment average adjusted AHL common shareholders' equity		
Retirement Services	$ 7,722	$ 8,004
Corporate and Other	2,049	959
Average adjusted AHL common shareholders' equity	$ 9,771	$ 8,963

The reconciliation of net investment income to net investment earnings and earned rate is as follows:

	Three months ended March 31,			
	2020		2019	
(In millions, except percentages)	Dollar	Rate	Dollar	Rate
GAAP net investment income	$ 745	2.51 %	$ 1,082	3.85 %
Change in fair value of reinsurance assets	270	0.90 %	132	0.47 %
Alternative income gain (loss)	(101)	(0.34)%	(5)	(0.02)%
ACRA noncontrolling interest	(72)	(0.24)%	—	— %
Apollo investment (income) loss	297	1.00 %	—	— %
Held for trading amortization and other	12	0.04 %	(6)	(0.02)%
Total adjustments to arrive at net investment earnings/earned rate	406	1.36 %	121	0.43 %
Total net investment earnings/earned rate	$ 1,151	3.87 %	$ 1,203	4.28 %
Retirement Services	$ 1,184	4.04 %	$ 1,171	4.21 %
Corporate and Other	(33)	(8.14)%	32	13.19 %
Total net investment earnings/earned rate	$ 1,151	3.87 %	$ 1,203	4.28 %
Retirement Services average net invested assets	$ 117,295		$ 111,443	
Corporate and Other average net invested assets ex. Apollo investment	1,624		959	
Consolidated average net invested assets ex. Apollo investment	$ 118,919		$ 112,402	

The reconciliation of interest sensitive contract benefits to Retirement Services' cost of crediting, and the respective rates, is as follows:

	Three months ended March 31,			
	2020		2019	
(In millions, except percentages)	Dollar	Rate	Dollar	Rate
GAAP interest sensitive contract benefits	$ (1,319)	(4.50)%	$ 1,516	5.44 %
Interest credited other than deferred annuities and institutional products	63	0.21 %	55	0.20 %
FIA option costs	266	0.91 %	278	1.00 %
Product charges (strategy fees)	(32)	(0.11)%	(28)	(0.10)%
Reinsurance embedded derivative impacts	14	0.05 %	15	0.05 %
Change in fair value of embedded derivatives – FIAs	1,504	5.13 %	(1,311)	(4.70)%
Negative VOBA amortization	7	0.02 %	12	0.04 %
ACRA noncontrolling interest	38	0.13 %	—	— %
Other changes in interest sensitive contract liabilities	(1)	0.00 %	(2)	(0.01)%
Total adjustments to arrive at cost of crediting	1,859	6.34 %	(981)	(3.52)%
Retirement Services cost of crediting	$ 540	1.84 %	$ 535	1.92 %
Retirement Services cost of crediting on deferred annuities	$ 422	1.91 %	$ 444	1.98 %
Retirement Services cost of crediting on institutional products	118	3.31 %	91	3.69 %
Retirement Services cost of crediting	$ 540	1.84 %	$ 535	1.92 %
Retirement Services average net invested assets	$ 117,295		$ 111,443	
Average account value on deferred annuities	88,119		89,809	
Average net institutional reserve liabilities	14,250		9,809	

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The reconciliation of GAAP benefits and expenses to other liability costs is as follows:

	Three months ended March 31,	
(In millions)	2020	2019
GAAP benefits and expenses	$ (167)	$ 4,255
Premiums	(1,140)	(2,000)
Product charges	(140)	(125)
Other revenues	2	(12)
Cost of crediting	(259)	(242)
Change in fair value of embedded derivatives – FIA, net of offsets	1,456	(1,260)
DAC, DSI and VOBA amortization related to investment gains and losses	425	(173)
Rider reserves related to investment gains and losses	76	(28)
Policy and other operating expenses, excluding policy acquisition expenses	(117)	(103)
AmerUs closed block fair value liability	45	(53)
ACRA noncontrolling interest	165	—
Other	(4)	1
Total adjustments to arrive at other liability costs	509	(3,995)
Other liability costs	$ 342	$ 260
Retirement Services	$ 342	$ 260
Corporate and Other	—	—
Consolidated other liability costs	$ 342	$ 260

The reconciliation of policy and other operating expenses to operating expenses is as follows:

	Three months ended March 31,	
(In millions)	2020	2019
GAAP policy and other operating expenses	$ 188	$ 165
Interest expense	(20)	(17)
Policy acquisition expenses, net of deferrals	(71)	(62)
Integration, restructuring and other non-operating expenses	(4)	(1)
Stock compensation expenses	(10)	(3)
ACRA noncontrolling interest	(4)	—
Total adjustments to arrive at operating expenses	(109)	(83)
Operating expenses	$ 79	$ 82
Retirement Services	$ 68	$ 62
Corporate and Other	11	20
Consolidated operating expenses	$ 79	$ 82

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The reconciliation of total investments, including related parties, to net invested assets is as follows:

(In millions)	March 31, 2020	December 31, 2019
Total investments, including related parties	$ 121,969	$ 130,550
Derivative assets	(1,610)	(2,888)
Cash and cash equivalents (including restricted cash)	5,983	4,639
Accrued investment income	802	807
Payables for collateral on derivatives	(1,589)	(2,743)
Reinsurance funds withheld and modified coinsurance	355	(1,440)
VIE and VOE assets, liabilities and noncontrolling interest	23	25
Unrealized (gains) losses	2,292	(4,095)
Ceded policy loans	(229)	(235)
Net investment receivables (payables)	(238)	(57)
Allowance for credit losses	505	—
Total adjustments to arrive at gross invested assets	6,294	(5,987)
Gross invested assets	128,263	124,563
ACRA noncontrolling interest	(7,063)	(7,077)
Net invested assets	$ 121,200	$ 117,486

The reconciliation of total investment funds, including related parties, to net alternative investments within net invested assets is as follows:

(In millions)	March 31, 2020	December 31, 2019
Investment funds, including related parties	$ 5,371	$ 4,300
Nonredeemable preferred stock included in equity securities	65	78
CLO and ABS equities included in trading securities	308	405
Investment in Apollo	(850)	—
Investment funds within funds withheld at interest	927	807
Royalties and other assets included in other investments	64	67
Unrealized (gains) losses and other adjustments	14	8
ACRA noncontrolling interest	(112)	(79)
Total adjustments to arrive at alternative investments	416	1,286
Net alternative investments	$ 5,787	$ 5,586

The reconciliation of total liabilities to net reserve liabilities is as follows:

(In millions)	March 31, 2020	December 31, 2019
Total liabilities	$ 131,649	$ 132,734
Short-term debt	(400)	(475)
Long-term debt	(986)	(992)
Derivative liabilities	(222)	(97)
Payables for collateral on derivatives and securities to repurchase	(2,883)	(3,255)
Funds withheld liability	(396)	(408)
Other liabilities	(853)	(1,181)
Reinsurance ceded receivables	(5,087)	(4,863)
Policy loans ceded	(229)	(235)
ACRA noncontrolling interest	(6,322)	(6,574)
Other	2	(2)
Total adjustments to arrive at net reserve liabilities	(17,376)	(18,082)
Net reserve liabilities	$ 114,273	$ 114,652

Liquidity and Capital Resources

There are two forms of liquidity relevant to our business, funding liquidity and balance sheet liquidity. Funding liquidity relates to the ability to fund operations. Balance sheet liquidity relates to our ability to liquidate or rebalance our balance sheet without incurring significant costs from fees, bid-offer spreads, or market impact. We manage our liquidity position by matching projected cash demands with adequate sources of cash and other liquid assets. Our principal sources of liquidity, in the ordinary course of business, are operating cash flows and holdings of cash, cash equivalents and other readily marketable assets.

Our investment portfolio is structured to ensure a strong liquidity position over time in order to permit timely payment of policy and contract benefits without requiring asset sales at inopportune times or at depressed prices. In general, liquid assets include cash and cash equivalents, highly rated corporate bonds, unaffiliated preferred stock and unaffiliated public common stock, all of which generally have liquid markets with a large number of buyers. The carrying value of these assets as of March 31, 2020 was $69.6 billion. Although our investment portfolio does contain assets that are generally considered illiquid for liquidity monitoring purposes (primarily mortgage loans, policy loans, real estate, investment funds, and affiliated common stock), there is some ability to raise cash from these assets if needed. In periods of economic downturn, such as the one brought about by the spread of COVID-19, we may maintain higher cash balances than required to manage our liquidity risk and to take advantage of market dislocations as they arise. We have access to additional liquidity through our $1.25 billion credit agreement, which was undrawn as of March 31, 2020 and had a remaining term of approximately five years, subject to up to two one-year extensions. Our registration statement on Form S-3 ASR (Shelf Registration Statement) provides us access to the capital markets, subject to market conditions and other factors. We are also party to agreements with several different financial institutions, pursuant to which we may engage in secured repurchase transactions to obtain short-term liquidity, to the extent available. In addition, through our membership in the FHLB, we are eligible to borrow under variable rate short-term federal funds arrangements to provide additional liquidity.

We proactively manage our liquidity position to meet cash needs while minimizing adverse impacts on investment returns. We analyze our cash-flow liquidity over the upcoming 12 months by modeling potential demands on liquidity under a variety of scenarios, taking into account the provisions of our policies and contracts in force, our cash flow position, and the volume of cash and readily marketable securities in our portfolio. We also monitor our liquidity profile under more severe scenarios.

We perform a number of stress tests and analyses to assess our ability to meet our cash flow requirements, as well as the ability of our reinsurance and insurance subsidiaries to meet their collateral obligations. Among these analyses, we manage to the following ALM limits:

- our projected net cumulative cash flows, including both new business and target levels of new investments under a "plan scenario" and a "moderately severe scenario" event, are non-negative over a rolling 12-month horizon;
- we hold enough cash, cash equivalents and other discounted liquid limit assets to cover 12 months of AHL's and Athene USA's projected obligations, including debt servicing costs:
  - minimum of 50% of expenses and 100% of debt servicing to be held in cash and cash equivalents at AHL operating accounts
  - minimum of 50% of any required AHL – Athene USA inter-company loan commitments to be held in cash and cash equivalents by AHL
  - dividends from ALRe sufficient to support the ongoing operations of AHL must be available under moderate and substantial stress scenarios
  - for purposes of administering this test, liquid limit assets are discounted by 25% and include public corporate bonds rated A- or above, liquid ABS (defined as prime auto, auto floorplan, Tier 1 subprime auto, auto lease, prime credit cards, equipment lease or utility stranded assets); RMBS with weighted average lives less than three years rated A- or above and CMBS with weighted average lives less than three years rated AAA- or above
- we seek to maintain sufficient capital and surplus at ALRe to meet the following collateral and capital maintenance calls under a substantial stress event, such as the failure of a major financial institution (Lehman event):
  - collateral calls from modco and third-party reinsurance contracts
  - AARe capital maintenance calls arising from AARe collateral calls from modco reinsurance contracts; and
  - U.S. regulated entity capital maintenance calls from nonmodco activity.

Insurance Subsidiaries' Liquidity

Operations

The primary cash flow sources for our insurance subsidiaries include retirement services product inflows (premiums), investment income, principal repayments on our investments, and net transfers from separate accounts and financial product deposits. Uses of cash include investment purchases, payments to policyholders for surrenders and withdrawals, maturity payments on funding agreements, policy acquisition costs and general operating costs.

Our policyholder obligations are generally long-term in nature. However, one liquidity risk is an extraordinary level of early policyholder withdrawals. We include provisions within our annuity policies, such as surrender charges and MVAs, which are intended to protect us from early withdrawals. As of both March 31, 2020 and December 31, 2019, approximately 78% of our deferred annuity liabilities were subject to penalty upon surrender. In addition, as of March 31, 2020 and December 31, 2019, approximately 63% and 64%, respectively, of policies contained MVAs that may also have the effect of limiting early withdrawals if interest rates increase, but may encourage early withdrawals by effectively subsidizing a portion of surrender charges when interest rates decrease. Our funding agreements, group annuities and payout annuities are generally non-surrenderable.

Membership in Federal Home Loan Bank

Through our membership in the FHLB, we are eligible to borrow under variable rate short-term federal funds arrangements to provide additional liquidity. The borrowings must be secured by eligible collateral such as mortgage loans, eligible CMBS or RMBS, government or agency securities and guaranteed loans. As of March 31, 2020 or December 31, 2019, we had $400 million and $475 million, respectively, of outstanding borrowings under these arrangements.

We have issued funding agreements to the FHLB in exchange for cash advances. These funding agreements were issued in an investment spread strategy, consistent with other investment spread operations. As of March 31, 2020 and December 31, 2019, we had funding agreements outstanding with the FHLB in the aggregate principal amount of $1.4 billion and $1.2 billion, respectively.

The maximum FHLB indebtedness by a member is determined by the amount of collateral pledged, and cannot exceed a specified percentage of the member's total statutory assets dependent on the internal credit rating assigned to the member by the FHLB. As of March 31, 2020, the total maximum borrowings under the FHLB facility were limited to $19.7 billion. However, our ability to borrow under the facility is constrained by the availability of assets that qualify as eligible collateral under the facility and by the Iowa Code requirement that we maintain funds equivalent to our legal reserve in certain permitted investments, from which we exclude pledged assets. Considering these limitations, we estimate that as of March 31, 2020 we had the ability to draw up to a total of approximately $2.0 billion, inclusive of borrowings then outstanding. This estimate is based on our internal analysis and assumptions, and may not accurately measure collateral which is ultimately acceptable to the FHLB. Drawing such amounts would have an adverse impact on AAIA's RBC ratio, which may further restrict our ability or willingness to draw up to our estimated capacity.

Securities Repurchase Agreements

We engage in repurchase transactions whereby we sell fixed income securities to third parties, primarily major brokerage firms or commercial banks, with a concurrent agreement to repurchase such securities at a determined future date. We require that, at all times during the term of the repurchase agreements, we maintain sufficient cash or other liquid assets sufficient to allow us to fund substantially all of the repurchase price. Proceeds received from the sale of securities pursuant to these arrangements are generally invested in short-term investments, with the offsetting obligation to repurchase the security included within payables for collateral on derivatives and securities to repurchase on the condensed consolidated balance sheets. As per the terms of the repurchase agreements, we monitor the market value of the securities sold and may be required to deliver additional collateral (which may be in the form of cash or additional securities) to the extent that the value of the securities sold decreases prior to the repurchase date.

As of March 31, 2020, the fair value of securities and collateral held by counterparties and payables for repurchase agreements was $1.4 billion and $1.3 billion, respectively.

On May 1, 2020, we signed a $1.0 billion committed repurchase facility with BNP Paribas. The facility has an initial commitment period of 12 months and automatically renews for successive 12-month periods until terminated by either party. During the commitment period, we may sell and BNP Paribas is required to purchase eligible investment grade corporate bonds pursuant to repurchase transactions at pre-agreed discounts in exchange for a 41 basis points per annum commitment fee.

Cash Flows

Our cash flows were as follows:

	Three months ended March 31,	
(In millions)	2020	2019
Net income (loss)	$ (1,216)	$ 708
Non-cash revenues and expenses	1,987	301
Net cash provided by operating activities	771	1,009
Sales, maturities and repayments of investments	6,214	3,170
Purchases of investments	(6,476)	(6,547)
Other investing activities	(116)	601
Net cash used in investing activities	(378)	(2,776)
Issuance of common stock	350	—
Net proceeds and repayments of debt	(75)	—
Deposits on investment-type policies and contracts	2,838	2,793
Withdrawals on investment-type policies and contracts	(1,633)	(1,638)
Net capital contributions and distributions to/from noncontrolling interests	194	—
Net change in cash collateral posted for derivative transactions and securities to repurchase	(372)	812
Preferred stock dividends	(18)	—
Repurchase of common stock	(328)	(51)
Other financing activities	14	(34)
Net cash provided by financing activities	970	1,882
Effect of exchange rate changes on cash and cash equivalents	(22)	—
Net increase (decrease) in cash and cash equivalents[1]	$ 1,341	$ 115

[1] *Includes cash and cash equivalents and restricted cash.*

Cash flows from operating activities

The primary cash inflows from operating activities include net investment income, annuity considerations and insurance premiums. The primary cash outflows from operating activities are comprised of benefit payments and operating expenses. Our operating activities generated cash flows totaling $771 million and $1.0 billion for the three months ended March 31, 2020 and 2019, respectively. The decrease in cash provided by operating activities was primarily driven by lower cash received from PRT transactions as well as a decrease in net investment income.

Cash flows from investing activities

The primary cash inflows from investing activities are the sales, maturities and repayments of investments. The primary cash outflows from investing activities are the purchases and acquisitions of new investments. Our investing activities used cash flows totaling $378 million and $2.8 billion for the three months ended March 31, 2020 and 2019, respectively. The decrease in cash used in investing activities was primarily attributed to an increase in the sales. maturities and repayments of investments to increase liquidity in response to the current economic environment and capitalize on growth opportunities as they may arise.

Cash flows from financing activities

The primary cash inflows from financing activities are deposits on our investment-type policies, changes of cash collateral posted for derivative transactions, capital contributions and proceeds from borrowing activities. The primary cash outflows from financing activities are withdrawals on our investment-type policies, changes of cash collateral posted for derivative transactions, repayments of outstanding borrowings, repurchases of common stock and payment of preferred stock dividends. Our financing activities provided cash flows totaling $1.0 billion and $1.9 billion for the three months ended March 31, 2020 and 2019, respectively. The decrease in cash provided by financing activities was primarily attributed to the change in cash collateral posted for derivative transactions driven by unfavorable equity market performance in 2020, an increase in repurchases of common stock, the repayment of $75 million of short-term debt and the payment of preferred stock dividends, partially offset by higher investment-type deposits from retail, flow reinsurance and funding agreement deposits, the issuance of $350 million of common stock as part of the strategic Apollo transaction and net capital contributions from noncontrolling interests.

Holding Company Liquidity

Dividends from Subsidiaries

AHL is a holding company whose primary liquidity needs include the cash-flow requirements relating to its corporate activities, including its day-to-day operations, debt servicing, preferred stock dividend payments and strategic transactions, such as acquisitions. The primary source of AHL’s cash flow is dividends from its subsidiaries, which are expected to be adequate to fund cash flow requirements based on current estimates of future obligations.

The ability of AHL’s insurance subsidiaries to pay dividends is limited by applicable laws and regulations of the jurisdictions where the subsidiaries are domiciled, as well as agreements entered into with regulators. These laws and regulations require, among other things, the insurance subsidiaries to maintain minimum solvency requirements and limit the amount of dividends these subsidiaries can pay.

Subject to these limitations and prior notification to the appropriate regulatory agency, the U.S. insurance subsidiaries are permitted to pay ordinary dividends based on calculations specified under insurance laws of the relevant state of domicile. Any distributions above the amount permitted by statute in any twelve month period are considered to be extraordinary dividends, and require the approval of the appropriate regulator prior to payment. AHL does not currently plan on having the U.S. subsidiaries pay any dividends to ALRe.

Dividends from ALRe are projected to be the primary source of AHL’s liquidity. Under the Bermuda Insurance Act, ALRe is prohibited from paying a dividend in an amount exceeding 25% of the prior year’s statutory capital and surplus, unless at least two members of ALRe’s board of directors and its principal representative in Bermuda sign and submit to the Bermuda Monetary Authority (BMA) an affidavit attesting that a dividend in excess of this amount would not cause ALRe to fail to meet its relevant margins. In certain instances, ALRe would also be required to provide prior notice to the BMA in advance of the payment of dividends. In the event that such an affidavit is submitted to the BMA in accordance with the Bermuda Insurance Act, and further subject to ALRe meeting its relevant margins, ALRe is permitted to distribute up to the sum of 100% of statutory surplus and an amount less than 15% of its total statutory capital. Distributions in excess of this amount require the approval of the BMA.

The maximum distribution permitted by law or contract is not necessarily indicative of our actual ability to pay such distributions, which may be further restricted by business and other considerations, such as the impact of such distributions on surplus, which could affect our ratings or competitive position and the amount of premiums that can be written. Specifically, the level of capital needed to maintain desired financial strength ratings from rating agencies, including S&P, A.M. Best and Fitch, is of particular concern when determining the amount of capital available for distributions. AHL believes its insurance subsidiaries have sufficient statutory capital and surplus, combined with additional capital available to be provided by AHL, to meet their financial strength ratings objectives. Finally, state insurance laws and regulations require that the statutory surplus of our insurance subsidiaries following any dividend or distribution must be reasonable in relation to their outstanding liabilities and adequate for the insurance subsidiaries’ financial needs.

Other Sources of Funding

If needed, we may seek to secure additional funding at the holding company level by means other than dividends from subsidiaries, such as by drawing on our undrawn $1.25 billion credit agreement or by pursuing future issuances of debt or equity securities to third-party investors. Certain other sources of liquidity potentially available at the holding company level are discussed below.

Shelf Registration – Under our Shelf Registration Statement, subject to market conditions, we have the ability to issue, in indeterminate amounts, debt securities, preference shares, depositary shares, Class A common shares, warrants and units.

Debt – On January 12, 2018, we issued $1.0 billion in aggregate principal amount of 4.125% Senior Notes due January 2028 (2028 Notes). On April 3, 2020, we issued $500 million in aggregate principal amount of 6.150% senior unsecured notes due 2030 (2030 Notes).

Preferred Stock – On June 10, 2019, we issued 34,500 6.35% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, Series A, par value of $1.00 per share with a liquidation preference of $25,000 per share, for aggregate proceeds of $839 million, net of the underwriters’ discount and expenses.

On September 19, 2019, we issued 13,800 5.625% Fixed Rate Perpetual Non-Cumulative Preference shares, Series B, par value of $1.00 per share with a liquidation preference of $25,000 per share, for aggregate proceeds of $333 million, net of the underwriters’ discount and expenses. See *Note 8 – Equity* to the condensed consolidated financial statements for further information.

Intercompany Note – AHL has an unsecured revolving note payable with ALRe, which permits AHL to borrow up to $1 billion with a fixed interest rate of 1.25% and a maturity date of March 31, 2024. As of March 31, 2020 and December 31, 2019, the revolving note payable had an outstanding balance of $553 million and $38 million, respectively.

In light of the spread of COVID-19 and the resulting impact on economic conditions and the financial markets, additional funding of the type described above may not be available on terms favorable to us or at all. As a result of the economic consequences of the spread of COVID-19, we have observed an increase in our cost of debt. At the time of issuance, our 2028 Notes had a yield to maturity of 4.14% and a spread to benchmark treasury of T + 160 basis points. At the time of issuance, our 2030 Notes had a yield to maturity of 6.18% and a spread to benchmark treasury of T + 550 basis points. In addition, certain covenants in our credit agreement prohibit us from maintaining debt in excess of specified thresholds. Specifically, our credit agreement prohibits us from permitting the Consolidated Debt to Capitalization Ratio (as such term is defined in the credit agreement) to exceed 35% as of the end of any quarter.

Capital Resources

As of December 31, 2019 and 2018, our U.S. insurance companies’ TAC, as defined by the NAIC, was $2.4 billion and $2.2 billion, respectively, and our U.S. RBC ratio was 429% and 421%, respectively. Each U.S. domestic insurance subsidiary’s state of domicile imposes minimum RBC requirements that were developed by the NAIC. The formulas for determining the amount of RBC specify various weighting factors that are applied to financial balances or various levels of activity based on the perceived degree of risk. Regulatory compliance is determined by a ratio of TAC to its authorized control level RBC (ACL). Our TAC was significantly in excess of all regulatory standards as of December 31, 2019 and 2018, respectively.

ALRe statutory capital was $11.0 billion and $9.7 billion as of December 31, 2019 and 2018, respectively. ALRe adheres to BMA regulatory capital requirements to maintain statutory capital and surplus to meet the minimum margin of solvency and maintain minimum economic balance sheet (EBS) capital and surplus to meet the enhanced capital requirement. Under the EBS framework, ALRe’s assets are recorded at market value and its insurance reserves are determined by reference to nine prescribed scenarios, with the scenario resulting in the highest reserve balance being ultimately required to be selected. ALRe’s EBS capital and surplus was $14.1 billion and $12.0 billion, resulting in a BSCR ratio of 310% and 340% as of December 31, 2019 and 2018, respectively. An insurer must have a BSCR ratio of 100% or greater to be considered solvent by the BMA. As of December 31, 2019 and 2018, ALRe held the appropriate capital to adhere to these regulatory standards. In evaluating our capital position and the amount of capital needed to support our Retirement Services segment, we review our capital by applying the NAIC RBC factors to the statutory financial statements of AHL’s non-U.S. reinsurance subsidiaries, on an aggregate basis. As of December 31, 2019 and 2018, our ALRe RBC was 443% and 405%, respectively. We believe that we enjoy a strong capital position in light of our risks and that we are well positioned to meet policyholder and other obligations. We also believe that our strong capital position, as well as our excess capital position and access to uncalled capital commitments at ACRA, may provide us the opportunity to take advantage of market dislocations as they arise.

Repurchase of Securities

Share Repurchase Program

In December 2018, our board of directors established a share repurchase program with an initial authorization for the repurchase of up to $250 million of our Class A shares. In 2019, our board of directors approved four additional authorizations under our share repurchase program for the purchase of up to an additional $1.3 billion of our Class A common shares, in the aggregate, for a total authorization of $1.6 billion. Pursuant to our share repurchase program, we repurchased 10.4 million Class A common shares for $319 million during the three months ended March 31, 2020. As of May 8, 2020, we have repurchased, in the aggregate, 32.8 million Class A common shares for approximately $1.2 billion since inception of our share repurchase program and have $321 million of repurchase authorization remaining. In connection with our strategic initiative to increase available liquidity in response to the spread of COVID-19, during March 2020, management temporarily halted share repurchases under our program.

Repurchase of Other Securities

We may from time to time seek to retire or purchase our other outstanding debt or equity securities through cash purchases and/or exchanges for other securities, purchases in the open market, privately negotiated transactions or otherwise. Any such repurchases will be dependent upon several factors, including our liquidity requirements, contractual restrictions, general market conditions and applicable regulatory, legal and accounting factors. Whether or not we repurchase any of our other securities and the size and timing of any such repurchases will be determined at our discretion.

Balance Sheet and Other Arrangements

Contractual Obligations

There have been no material changes to our contractual obligations from those previously disclosed in the 2019 Annual Report.

Off Balance Sheet Arrangements

None.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Critical Accounting Estimates and Judgments

The preparation of consolidated financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of any contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Amounts based on such estimates involve numerous assumptions subject to varying and potentially significant degrees of judgment and uncertainty, particularly related to the future performance of the underlying business, and will likely change in the future as additional information becomes available. Critical estimates and assumptions are evaluated on an ongoing basis based on historical developments, market conditions, industry trends and other information that is reasonable under the circumstances. There can be no assurance that actual results will conform to estimates and assumptions and that reported results of operations will not be materially affected by the need to make future accounting adjustments to reflect periodic changes in these estimates and assumptions. Critical accounting estimates are impacted significantly by our methods, judgments and assumptions used in the preparation of the consolidated financial statements and should be read in conjunction with our significant accounting policies described in *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* to the consolidated financial statements of our 2019 Annual Report. The most critical accounting estimates and judgments include those used in determining:

- fair value of investments;
- credit loss allowances;
- future policy benefit reserves;
- derivatives valuation, including embedded derivatives;
- deferred acquisition costs, deferred sales inducements and value of business acquired;
- consolidation of VIEs; and
- valuation allowances on deferred tax assets.

Except as described below under *–Investments*, the above critical accounting estimates and judgments are discussed in detail in *Part II—Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates and Judgments* of our 2019 Annual Report.

See *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* to the condensed consolidated financial statements for adoption of new and future accounting pronouncements.

Investments

Credit Loss Allowances

Establishing allowances for expected credit losses is a quantitative and qualitative process, which is subject to risks and uncertainties and involves significant estimates and judgments by management. Changes in the estimates and judgments used in such analysis can have a significant impact on our consolidated results of operations.

The allowance for expected credit losses on assets held at amortized cost and off-balance sheet credit exposures is established utilizing quantitative modeling. Key inputs into the model include data pertaining to the characteristics of the assets, historical losses and current market conditions. Additionally, the model incorporates management's expectations around future economic conditions and macroeconomic forecasts over a reasonable and supportable forecast period, after which the model reverts to historical averages. For residential mortgage loans, key loan characteristics impacting the estimate include among others: time to maturity, delinquency status, original credit scores and loan-to-value ratios. Key macroeconomic variables include unemployment rates and the housing price index. For commercial mortgage loans, key loan characteristics impacting the estimate include among others: time to maturity, delinquency status, loan-to-value ratios and debt service coverage ratios. Key macroeconomic variables include unemployment rates, rent growth, capitalization rates, and the housing price index. These inputs, the reasonable and supportable forecast period, and reversion to historical average technique are subject to a formal governance and review process by management. Additionally, management considers qualitative adjustments to the model output to the extent that any relevant information regarding the collectability of the asset is available and not already considered in the quantitative model. If we determine that a financial asset has become collateral dependent, which we determine to occur when foreclosure is probable, the allowance is measured as the difference between amortized cost and the fair value of the collateral, less any expected costs to sell.

We evaluate AFS securities with a fair value that has declined below amortized cost to determine how the decline in fair value should be recognized. If we determine, based on the facts and circumstances related to the specific security, that we intend to sell a security or it is more likely than not that we would be required to sell a security before the recovery of its amortized cost, any existing allowance for credit losses is reversed and the amortized cost of the security is written down to fair value. If neither of these conditions exist, we evaluate whether the decline in fair value has resulted from a credit loss or other factors.

For non-structured AFS securities, we qualitatively consider relevant facts and circumstances in evaluating whether a decline below fair value is credit-related. Relevant facts and circumstances include but are not limited to: (1) the extent to which the fair value is less than amortized cost; (2) changes in agency credit ratings, (3) adverse conditions related to the security's industry or geographical area, (4) failure to make scheduled payments, and (5) other known changes in the financial condition of the issuer or quality of any underlying collateral or credit enhancements. For structured AFS securities meeting the definition of beneficial interests, the qualitative assessment is bypassed, and any securities having experienced a decline in fair value below amortized cost is subject solely to a quantitative analysis.

If upon completion of this analysis it is determined that a potential credit loss exists, an allowance for expected credit losses is established equal to the amount by which the present value of expected cash flows is less than amortized cost, limited by the amount by which fair value is less than amortized cost. A non-structured security’s cash flow estimates are derived from scenario-based outcomes of expected corporate restructurings or the disposition of assets using security-specific facts and circumstances including timing, security interests and loss severity. A structured security’s cash flow estimates are based on security-specific facts and circumstances that may include collateral characteristics, expectations of delinquency and default rates, loss severity, prepayments and structural support, including subordination and guarantees. The expected cash flows are discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete a structured security. For securities with a contractual interest rate that varies based on changes in an independent factor, such as an index or rate, the effective interest rate is calculated based on the factor as it changes over the life of the security. Inherently under the discounted cash flow model, both the timing and amount of cash flows affect the measurement of the allowance for expected credit losses.

Item 3. Quantitative and Qualitative Disclosures About Market Risks

We regularly analyze our exposure to market risks, which reflect potential losses in value due to credit and counterparty risk, interest rate risk, currency risk, commodity price risk and equity price risk. As a result of that analysis, we have determined that we are primarily exposed to credit risk, interest rate risk and equity price risk. A description of our market risk exposures, including strategies used to manage our exposure to market risk, may be found under *Part II—Item 7A. Quantitative and Qualitative Disclosures About Market Risk* of the 2019 Annual Report. There have been no material changes to our market risk exposures from those previously disclosed in the 2019 Annual Report.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures as such term is defined under Exchange Act Rule 13a-15(e), that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures. In designing and evaluating the disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives and our management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. We have carried out an evaluation, as of the end of the period covered by this report, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on this evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at attaining the level of reasonable assurance noted above.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting during the quarter ended March 31, 2020, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting, except as described below.

Effective January 1, 2020, we implemented ASU 2016-13, Financial Instruments – Credit Losses, and other related ASUs, as disclosed in *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* of the condensed consolidated financial statements. With the implementation, we enhanced our business processes and related control activities to consider new financial reporting requirements, including use of credit loss models, assumptions used in developing our credit loss estimates and new disclosure requirements. Certain of these business processes and control activities, such as the development and maintenance of certain credit loss models, have been outsourced to Apollo, a related party.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings

We are subject to litigation arising in the ordinary course of our business, including litigation principally relating to our FIA business. We cannot assure you that our insurance coverage will be adequate to cover all liabilities arising out of such claims. The outcomes of legal proceedings and claims brought against us are subject to significant uncertainty. There is significant judgment required in assessing both the probability of an adverse outcome and the determination as to whether an exposure can be reasonably estimated. In management's opinion, the ultimate disposition of any current legal proceeding or claim brought against us will not have a material effect on our financial condition, results of operations or cash flows. Litigation is, however, inherently uncertain and an adverse outcome from such litigation could have a material effect on the operating results of a particular reporting period.

From time to time, in the ordinary course of business and like others in the insurance and financial services industries, we receive requests for information from government agencies in connection with such agencies' regulatory or investigatory authority. Such requests can include financial or market conduct examinations, subpoenas or demand letters for documents to assist the government in audits or investigations. We and each of our U.S. insurance subsidiaries review such requests and notices and take appropriate action. We have been subject to certain requests for information and investigations in the past and could be subject to them in the future.

For a description of certain legal proceedings affecting us, see *Note 10 – Commitments and Contingencies – Litigation, Claims and Assessments* to the condensed consolidated financial statements.

Item 1A. Risk Factors

The following should be read in conjunction with, and supplement and amend, the factors that may affect our business or operations described in *Part I–Item 1A. Risk Factors* of our 2019 Annual Report. Other than as described in this Item 1A, there have been no material changes to our risk factors from the risk factors previously disclosed in our 2019 Annual Report.

Certain metrics discussed in this section are based on management view and therefore may not correspond to amounts disclosed in our condensed consolidated financial statements or the notes thereto. For example, investment figures cited represent our invested assets, which include assets held by cedants that correspond to liabilities ceded to us. We believe that these metrics provide the most comprehensive view of our risk exposures. See *Part 1–Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations–Key Operating and Non-GAAP Measures–Net Invested Assets* for further discussion.

The following updates and supplements the risk factors described in our 2019 Annual Report:

Major public health issues, and specifically the pandemic caused by the spread of COVID-19, could have an adverse impact on our financial condition, results of operations, liquidity, cash flows and other aspects of our business.

We are closely monitoring developments related to the COVID-19 pandemic to assess its impact on our business. While still evolving, the COVID-19 pandemic has caused significant economic and financial turmoil both in the U.S. and around the world, and has fueled concerns that it will lead to a global recession. These conditions are expected to continue in the near term. At this time, it is not possible to estimate how long it will take to halt the spread of the virus or the longer term-effects that the COVID-19 pandemic could have on our business. The extent to which the COVID-19 pandemic impacts our business, results of operations, financial condition, liquidity or prospects will depend on future developments which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of the COVID-19 pandemic and the actions taken to contain or address its impact, and may cause us to revisit or revise estimates of future earnings or other guidance we have previously provided to the markets. In particular, certain projected financial information previously provided to our shareholders in connection with our recent share issuance transaction with Apollo may as a result of the impact from the COVID-19 pandemic materially differ from our actual results, and should not be relied upon.

While we have implemented risk management and contingency plans and taken preventive measures and other precautions, no predictions of specific scenarios can be made with respect to the COVID-19 pandemic and such measures may not adequately predict the impact on our business from such events. Currently, most of our employees are working remotely with only operationally critical employees working at our facilities for business continuity purposes, to the extent lawfully permitted. An extended period of remote work arrangements could strain our business continuity plans, introduce operational risk, including but not limited to cybersecurity risks, and impair our ability to manage our business. We also outsource certain critical business activities to third parties. As a result, we rely upon the successful implementation and execution of the business continuity planning of such entities in the current environment. While we closely monitor the business continuity activities of these third parties, successful implementation and execution of their business continuity strategies are largely outside our control. If one or more of the third parties to whom we outsource certain critical business activities experience operational failures as a result of the impacts from the spread of COVID-19, or claim that they cannot perform due to a force majeure, it may have a material adverse effect on our business, financial condition, results of operations, liquidity and cash flows.

With one exception, each of the Non-U.S. Companies (as defined below) currently intends to operate in a manner that will not cause it to be subject to current U.S. federal income taxation on its net income, and certain of them intend to be UK tax resident by reason of having their central management and control exercised in the UK. However, our directors and personnel reside in various jurisdictions and often must travel to carry out their duties in accordance with such intended tax positions. Travel restrictions imposed as a result of the COVID-19 pandemic have limited, and may continue to limit, such travel. While we have implemented contingency plans to mitigate the impact of such travel restrictions, no assurances can be provided that we will not become subject to greater tax liabilities than anticipated due to restrictions on the ability of our directors and personnel to carry out their activities from the intended jurisdictions.

Increased economic uncertainty and increased unemployment resulting from the economic impacts of the spread of COVID-19 may also result in policyholders seeking sources of liquidity and withdrawing at rates greater than we previously expected. If policyholder lapse and surrender rates significantly exceed our expectations, it could have a material adverse effect on our business, financial condition, results of operations, liquidity and cash flows. Such events or conditions could also have an adverse effect on our sales of new policies. In addition, such events or conditions could result in a decrease or halt in economic activity in large geographic areas, adversely affecting our business within such geographic areas and/or adversely affecting the general economic climate.

The effects of the spread of COVID-19 on economic conditions and the financial markets may trigger or exacerbate the market risk discussed elsewhere in this report and in our 2019 Annual Report. Specifically, our investment portfolio (and, namely, the valuations of invested assets we hold) has been, and may continue to be, adversely affected. Moreover, changes in interest rates, reduced liquidity or a continued slowdown in the U.S. or in global economic conditions may also adversely affect the values and cash flows of these assets. Within our investment portfolio, there is exposure to certain segments of the economy that have been disproportionately affected by the spread of COVID-19, including but not limited to, aviation, real estate (including CMLs, triple net lease investments, RMLs, CMBS, RMBS and related servicer investments), retail, energy and financial services. These investments are subject to increased credit or valuation risk, which could ultimately result in increased investment losses. Our investments in mortgages and mortgage-backed securities could be negatively affected by delays or failures of borrowers to make payments of principal and interest when due or delays or moratoriums on foreclosures or enforcement actions with respect to delinquent or defaulted mortgages imposed by governmental authorities. Further, extreme market volatility may leave us unable to react to market events in a prudent manner consistent with our historical investment practices in dealing with more orderly markets. Market dislocations, decreases in observable market activity or unavailability of information, in each case, arising from the spread of COVID-19, may restrict our access to key inputs used to derive certain estimates and assumptions made in connection with financial reporting or otherwise, including estimates and changes in long term macro-economic assumptions relating to accounting for CECL. Restricted access to such inputs may make our financial statement balances and estimates and assumptions used to run our business subject to greater variability and subjectivity.

While governmental and non-governmental organizations are engaging in efforts to combat the spread and severity of the COVID-19 pandemic and related public health issues, these measures may not be effective. We also cannot predict how legal and regulatory responses to concerns about the COVID-19 pandemic and related public health issues will impact our business. Such events or conditions could result in additional regulation or restrictions affecting the conduct of our business in the future.

As a financial services company, we are exposed to liquidity risk, which is the risk that we are unable to meet near-term obligations as they come due.

Liquidity risk is a manifestation of events that are driven by other risk types (e.g. market, policyholder behavior, operational). A liquidity shortfall may arise in the event of insufficient funding sources or an immediate and significant need for cash or collateral. In addition, it is possible that expected liquidity sources, such as our credit agreement, may be unavailable or inadequate to satisfy the liquidity demands described below. In particular, the spread of COVID-19 has introduced tremendous volatility into the financial markets and may restrict the liquidity sources available to us and further may result in an increase of our liquidity demands.

We have four primary sources of liquidity exposure and associated drivers that trigger material liquidity demand. Those sources are:

- Collateral market exposure: Abrupt changes to interest rate, equity, and/or currency markets, such as that experienced during the three months ended March 31, 2020, have and may further increase collateral requirements to counterparties and may create liquidity risk.
- Asset liability mismatch: There are liquidity risks associated with liabilities coming due prior to the matching asset cash flows. Structural maturities mismatch can occur in activities such as securities lending, where the liabilities are effectively overnight open transactions or otherwise short-term in nature and may be used to fund longer-term assets.
- Funding Availability: We have availed ourselves of the financial markets for funding (such as through the issuance of senior notes, securities lending and repurchase arrangements and other forms of borrowing in the capital markets). These sources might not be available during times of stress, or may only be available on unfavorable terms, which can result in a decrease in our profitability and a significant reduction in our financial flexibility.
- Policyholder cash flows: We face potential liquidity risks from unexpected cash demands due to severe mortality, policyholder withdrawals or lapse events. If such events were to occur, we may face unexpectedly high levels of claim payments to policyholders.

If a material liquidity demand is triggered and we are unable to satisfy the demand with the sources of liquidity readily available to us, it may have a material adverse impact on our business, financial condition, results of operations, liquidity and cash flows.

See *Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations–Liquidity and Capital Resources* for a discussion of our liquidity and sources and uses of liquidity, including information about legal and regulatory limits on the ability of our subsidiaries to pay dividends.

The following updates and replaces the final paragraph of the similarly named risk factor in our 2019 Annual Report:

Uncertainty relating to the LIBOR calculation process and potential phasing out of LIBOR after 2021 may adversely affect the value of our investment portfolio, our ability to achieve our hedging objectives and our ability to issue funding agreements bearing a floating rate of interest.

To manage the uncertainty surrounding the discontinuation of LIBOR, we have established a six-phase plan. Our plan is subject to change as we gain additional information. We have created an Executive Steering Committee composed of senior executives to coordinate and oversee execution of our plan. To the extent that management effort and attention is focused on other matters, such as responding to the risk posed by COVID-19, successfully completing all of the phases of our plan prior to the discontinuation of LIBOR could become more difficult. Although we expect that we will be successful at completing all the phases of our plan prior to the discontinuation of LIBOR, we can provide no assurance at this time. Failure to complete all phases of our plan prior to the discontinuation of LIBOR may have a material adverse effect on our business, financial position, results of operations and cash flows. See *Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations–Industry Trends and Competition-Discontinuation of LIBOR* for further discussion.

The following updates and replaces, in their entirety, the similarly named risk factors in our 2019 Annual Report:

Our investment portfolio may be subject to concentration risk, particularly with respect to single issuers, including MidCap, AmeriHome, Athora and PK AirFinance; industries, including financial services; and asset classes, including real estate.

Concentration risk arises from exposure to significant asset defaults of a single issuer, industry or class of securities, based on economic conditions, geography or as a result of adverse regulatory or court decisions. When an investor's assets are concentrated and that particular asset or class of assets experiences significant defaults, the default of such assets could threaten the investor's financial condition, results of operations and cash flows. Our most significant potential exposures to concentration risk of single issuers are our investments in MidCap, a provider of revolving and term debt facilities to middle market companies in North America and Europe; A-A Mortgage and its indirect investment in AmeriHome, a mortgage lender and mortgage servicer; Athora, an insurance holding company focused on the European life insurance market; and PK AirFinance, a provider and arranger of loans principally to airlines and aircraft leasing companies secured by commercial aircraft.

As of March 31, 2020, our exposure, including loaned amounts, to MidCap was $838 million, which represented 0.7% of our net invested assets and 8.4% of total Athene Holding Ltd. shareholders' equity. In addition, on April 30, 2020, we committed to invest $110 million in preferred shares to be issued by MidCap. As of March 31, 2020, our exposure to A-A Mortgage was $621 million, which represented 0.5% of our net invested assets and 6.2% of total Athene Holding Ltd. shareholders' equity. On April 1, 2020, pursuant to a capital call, we made an incremental investment in Athora of $361 million. Pro forma for this investment, as of March 31, 2020, our exposure to Athora was $491 million, which represented 0.4% of our net invested assets and 4.9% of total Athene Holding Ltd. shareholders' equity. As of March 31, 2020, our exposure to securitizations of loans originated by PK AirFinance was $1.4 billion, which represented 1.2% of our net invested assets and 14.4% of total Athene Holding Ltd. shareholders' equity.

Given our significant exposure to these issuers, we are subject to the idiosyncratic risk inherent in their business. For example:

- AmeriHome relies upon a subservicer to perform servicing operations on the loans for which it has mortgage servicing rights. If the subservicer were to experience financial distress or fail to provide adequate or timely services, AmeriHome may have difficulty finding another subservicer to perform servicing operations and may experience a significant decline in its financial performance. Such risks may be heightened in the current economic environment. In addition, mortgage servicers are obligated to advance certain amounts not paid by borrowers, including amounts arising from the forbearance of certain payments as mandated by the CARES Act. AmeriHome may require significant liquidity in order to make these advances and adequate sources of liquidity could be unavailable to AmeriHome to satisfy these obligations.

- As a life insurer, Athora is subject to credit risk with respect to its investment portfolio and mortality risk with respect to its product liabilities, each of which may be exacerbated by unforeseen events, including but not limited to the spread of the COVID-19 pandemic. Further, Athora has significant European operations, which expose it to volatile economic conditions and risks relating to European member countries and withdrawals thereof, such as the UK. In addition, Athora is subject to multiple legal and regulatory regimes that may hinder or prevent it from achieving its business objectives.

- Our investment in the PK AirFinance securitization of loans is subject to risks to the aircraft and airline industries generally, and specifically in connection with the decrease in air travel as a result of the spread of COVID-19, which has likely resulted in a reduction in aircraft valuations and/or delinquent loan payments. While our investment is supported by significant equity subordination provided by borrowers, if borrowers default on their loans, PK AirFinance may pursue foreclosure and re-market the related aircraft or may restructure the defaulted loans. To the extent that the proceeds from any such restructuring or re-marketing were not sufficient to satisfy the corresponding principal balance in the securitization, significant losses on our investment could be recognized, beginning with the equity tranche of the securitization that we hold.

To the extent that we suffer a significant loss on our investment in MidCap, A-A Mortgage, Athora or the securities issued by PK AirFinance, our financial condition, results of operations and cash flows could be adversely affected.

MidCap, AmeriHome and PK AirFinance are nonbank lenders focused on providing financing to individuals or entities. As a result, through these investments, we have significant exposure to credit risk, which has increased as a result of the economic conditions brought about by the spread of COVID-19. As a result of the current economic environment, our investees in this sector have experienced a decrease in origination volumes and may experience increased credit and liquidity risk as borrowers defer loan payments or default on their obligations. To the extent that the current downturn causes a deterioration in the creditworthiness of the counterparties of such investees or adversely affects the securitization market for the loans originated by these entities, we may suffer significant losses on our investments in these entities and our financial condition, results of operations and cash flows could be adversely affected. In addition to the concentration risk arising from our investments in single issuers within the nonbank lending sector of the financial services industry, we have significant exposure to the financial services industry more broadly as a result of the composition of investments in our investment portfolio. As of March 31, 2020, 13% of our net invested assets were invested in issuers within the financial services industry, excluding CLOs. The current economic downturn or any further macroeconomic, regulatory or other changes having an adverse impact on the financial services industry more broadly, could have a material and adverse effect on our business, financial condition, results of operations and cash flows.

As of March 31, 2020, 25% of our net invested assets were invested in real estate-related assets. Any significant decline in the value of real estate generally or the occurrence of any of the risks described above with respect to our real estate-related investments could materially and adversely affect our financial condition and results of operations.

The BEAT may significantly increase our tax liability.

The Tax Act introduced a new tax called the BEAT. The BEAT operates as a minimum tax and is generally calculated as a percentage (10% in 2019 – 2025, and 12.5% in 2026 and thereafter) of the "modified taxable income" of an "applicable taxpayer." Modified taxable income is calculated by adding back to a taxpayer's regular taxable income the amount of certain "base erosion tax benefits" with respect to certain payments made to foreign affiliates of the taxpayer, as well as the "base erosion percentage" of any net operating loss deductions. The BEAT applies for a taxable year only to the extent it exceeds a taxpayer's regular corporate income tax liability for such year (determined without regard to certain tax credits).

Certain of our reinsurance agreements require our U.S. subsidiaries (including any non-U.S. subsidiaries subject to U.S. federal income taxation) to pay or accrue substantial amounts to our non-U.S. reinsurance subsidiaries that would be characterized as "base erosion payments" with respect to which there are "base erosion tax benefits." However, in certain types of reinsurance transactions, it is not clear whether any amounts paid or accrued by non-U.S. reinsurance entities would be netted against amounts paid or accrued to such entities for purposes of calculating the "base erosion payments" and "base erosion tax benefits."

In light of the possibility of material additional tax cost to our U.S. subsidiaries and the lack of clear guidance regarding the appropriate method by which to compute the BEAT, we have undertaken certain actions intended to mitigate the potential effect of the BEAT on our results of operations. Such actions may have adverse consequences to our business, such as subjecting income in respect of our affiliate reinsurance to a layer of withholding tax of up to 30%, which would not have been payable under our prior structure. There can be no assurances that our efforts to mitigate the BEAT will be successful, and our consideration of any further actions may be expensive and time consuming. In addition, we have been, and may continue to be, required to take action before the uncertainty regarding the BEAT is resolved, and accordingly any action we take may, in hindsight, prove to have been unnecessary, ineffective or counterproductive.

The application of the BEAT to our reinsurance arrangements could be affected by further legislative action (including possibly a "technical corrections" bill), administrative guidance or court decisions, any of which could have retroactive effect. In addition, tax authorities may disagree with our BEAT calculations, or the interpretations on which those calculations are based, and assess additional taxes, interest and penalties, and the uncertainty regarding the correct interpretation of the BEAT may make such disagreements more likely. We will establish our tax provision in accordance with GAAP.

However, there can be no assurance that this provision will accurately reflect the amount of federal income tax that we ultimately pay, as that amount could differ materially from the estimate. There may be material adverse consequences to our business if tax authorities successfully challenge our BEAT calculations, in light of the uncertainties described above.

In addition, we have made estimates regarding the effective tax rate we expect to experience, which take into account the impacts of federal income tax and the BEAT. The determination of each such figure, or range of figures, involves numerous estimates and assumptions, including estimates and assumptions regarding our BEAT calculations. Such estimates and assumptions may prove incorrect. To the extent that actual experience differs from the estimates and assumptions inherent in our projections, our future effective tax rate may deviate materially from the estimates provided and our financial condition and results of operations may be materially less favorable than are implied by the projections provided.

AHL or its non-U.S. subsidiaries may be subject to U.S. federal income taxation in an amount greater than expected.

AHL and certain of its subsidiaries are treated as foreign corporations under the Internal Revenue Code (such subsidiaries, the Non-U.S. Subsidiaries, and together with AHL, the Non-U.S. Companies). Any Non-U.S. Company that is considered to be engaged in a trade or business in the U.S. generally will be subject to U.S. federal income taxation on a net basis on its income that is effectively connected with such U.S. trade or business (including branch profits tax on the portion of its earnings and profits that is attributable to such income), unless otherwise provided under an applicable income tax treaty. In addition, a Non-U.S. Company generally will be subject to U.S. federal income taxation on a gross basis on certain U.S.-source income, and certain premiums earned on insurance with respect to U.S. risks, that are not effectively connected with a U.S. trade or business, unless otherwise provided under an applicable income tax treaty.

With one exception, each of the Non-U.S. Companies currently intends to operate in a manner that will not cause it to be treated as being engaged in a trade or business within the U.S. However, the enactment of the BEAT, the reduction of the federal income tax rate applicable to corporations included in the Tax Act and other factors may cause some or all of the Non-U.S. Companies to conduct business differently. Moreover, there is considerable uncertainty as to when a foreign corporation is engaged in a trade or business within the United States, as the law is unclear and the determination is highly factual and must be made annually, and therefore there can be no assurance that the IRS will not successfully contend that a Non-U.S. Company that does not intend to be treated as engaged in a trade or business in the U.S. is nonetheless so engaged. If any such Non-U.S. Company is treated as engaged in a trade or business in the U.S., it may incur greater tax costs than expected on any income not exempt from taxation under an applicable income tax treaty, which could have a material adverse effect on our financial condition, results of operations and cash flows.

AHL is a UK tax resident and expects to qualify for the benefits of the income tax treaty between the U.S. and the UK (UK Treaty) because its Class A common shares are listed and regularly traded on the NYSE. In addition, certain of the Non-U.S. Subsidiaries are UK tax residents (together with AHL, the UK Resident Companies) and expect to qualify for the benefits of the UK Treaty by reason of being subsidiaries of AHL or by reason of satisfying an ownership and base erosion test. Accordingly, our UK Resident Companies are expected to qualify for certain exemptions from, or reduced rates of, the U.S. taxes described above that are provided for by the UK Treaty. However, there can be no assurances that our UK Resident Companies will continue to qualify for treaty benefits or satisfy all of the requirements for the tax exemptions and reductions they intend to claim. If any of our UK Resident Companies fails to qualify for such benefits or satisfy such requirements, it may incur greater tax costs than expected, which could have a material adverse effect on our financial condition, results of operations and cash flows.

U.S. persons who own our equity securities may be subject to U.S. federal income taxation at ordinary income rates on our undistributed earnings and profits.

For any taxable year in which a Non-U.S. Company is treated as a controlled foreign corporation (CFC), a “10% U.S. Shareholder” of the Non-U.S. Company that held our equity securities directly or indirectly through non-U.S. entities as of the last day in such taxable year that the Non-U.S. Company was a CFC would generally be required to include in gross income as ordinary income its pro rata share of the Non-U.S. Company’s income, regardless of whether that income was actually distributed to such U.S. person (with certain adjustments). A “10% U.S. Shareholder” of an entity treated as a foreign corporation for U.S. federal income tax purposes is a U.S. person who owns (directly, indirectly through non-U.S. entities or constructively) 10% or more of the total value of all classes of shares of the corporation or 10% or more of the total combined voting power of all classes of voting shares of the corporation. Any U.S. person that owns (or is treated as owning) 10% or more of the value of AHL should consult with their tax advisor regarding their investment in AHL.

In general, a non-U.S. corporation is a CFC if 10% U.S. Shareholders, in the aggregate, own (or are treated as owning) stock of the non-U.S. corporation possessing more than 50% of the voting power or value of such corporation’s stock. However, this threshold is lowered to 25% for purposes of taking into account the insurance income of a non-U.S. corporation. Further, special rules apply for purposes of taking into account any related person insurance income (RPII) of a non-U.S. corporation, as described below.

In addition, if a U.S. person disposes of shares in a non-U.S. corporation and the U.S. person owned (directly, indirectly through non-U.S. entities or constructively) 10% or more of the total combined voting power of the voting stock of the corporation at any time when the corporation was a CFC during the five-year period ending on the date of disposition, any gain from the disposition will generally be treated as a dividend to the extent of the U.S. person’s share of the corporation’s undistributed earnings and profits that were accumulated during the period or periods that the U.S. person owned the shares while the corporation was a CFC (with certain adjustments). Also, a U.S. person may be required to comply with specified reporting requirements, regardless of the number of shares owned.

We do not believe that AHL is a CFC. However, we believe that all of the Non-U.S. Subsidiaries are CFCs, except that we believe ALRe is a CFC only for purposes of taking into account certain insurance income. Specifically, the Tax Act eliminated the prohibition on “downward attribution” from non-U.S. persons to U.S. persons under former Section 958(b)(4) of the Code for purposes of determining constructive stock ownership under the CFC rules. As a result, our U.S. subsidiaries are deemed to own all of the stock of the Non-U.S. Subsidiaries (other than ALRe) for CFC purposes. Further, we believe that 10% U.S. Shareholders of ALRe collectively own more than 25%, but less than 50%, of the vote and value of ALRe by reason of downward attribution from certain of our direct or indirect shareholders. The legislative history under the Tax Act indicates that this change in law was not intended to cause a foreign corporation to be treated as a CFC with respect to a 10% U.S. Shareholder that is not related to the U.S. persons receiving such downward attribution. However, it is not clear whether a court would interpret the change made by the Tax Act in a manner consistent with such indicated intent. Moreover, no assurances can be provided that any of the Non-U.S. Companies would not be a CFC, even without regard to the downward attribution of stock from non-U.S. persons to U.S. persons, as such classification depends upon the identity and relationships of the beneficial owners of our equity securities, over which we have limited knowledge and control. Accordingly, any U.S. person that owns (or is treated as owning) 10% or more of the voting power or value of AHL should consult with their tax advisor regarding their investment in AHL.

U.S. persons who own our equity securities may be subject to U.S. federal income taxation at ordinary income rates on a disproportionate share of our undistributed earnings and profits attributable to RPII.

If any of the Non-U.S. Companies is treated as recognizing RPII in a taxable year and is also treated as a CFC for such taxable year, each U.S. person that owns our equity securities directly or indirectly through non-U.S. entities as of the last day in such taxable year must generally include in gross income its pro rata share of the RPII, determined as if the RPII were distributed proportionately only to all such U.S. persons, regardless of whether that income is distributed (with certain adjustments). For this purpose, a Non-U.S. Company generally will be treated as a CFC if U.S. persons in the aggregate are treated as owning (directly or indirectly through non-U.S. entities) 25% or more of the total voting power or value of the Non-U.S. Company’s stock at any time during the taxable year. We believe that the Non-U.S. Companies are treated as CFCs for this purpose, based on the current ownership of our equity securities.

RPII generally is any income of a non-U.S. corporation attributable to insuring or reinsuring risks of a U.S. person that owns (or is treated as owning) stock of such non-U.S. corporation, or risks of a person that is "related" to such a U.S. person. For this purpose, (1) a person is "related" to another person if such person "controls," or is "controlled" by, such other person, or if both are "controlled" by the same persons, and (2) "control" of a corporation means ownership (or deemed ownership) of stock possessing more than 50% of the total voting power or value of such corporation's stock and "control" of a partnership, trust or estate for U.S. federal income tax purposes means ownership (or deemed ownership) of more than 50% by value of the beneficial interests in such partnership, trust or estate.

The Non-U.S. Companies that are insurance enterprises (the "Non-U.S. Insurance Companies") may derive income that is considered RPII. We believe that an exception under the RPII rules for CFCs with *de minimis* RPII currently applies to such Non-U.S. Insurance Companies, such that U.S. persons are not required to include any RPII in their gross income with respect to any of the Non-U.S. Companies. However, AGM and its affiliates and related parties own a substantial number of our Class A common shares, have rights to acquire additional Class A common shares and hold proxies to vote Class A common shares owned by certain of our employees. Further, Athene and AGM may have considerable overlap in ownership. If it is determined that AGM controls Athene, or that the same persons control both Athene and AGM through owning (or being treated as owning) more than 50% of the vote or value of both Athene and AGM, substantially all of the income of the Non-U.S. Insurance Companies derived from the reinsurance of affiliates likely will constitute RPII. This would trigger the adverse RPII consequences described above to all U.S. persons that hold our equity securities directly or indirectly through non-U.S. entities and could have a material adverse effect on the value of their investment in our equity securities.

Our bye-laws currently limit to 9.9% the voting power of AHL owned by persons who, together with their affiliates, beneficially own more than 9.9% of the voting power of AHL, subject to exemptions authorized by our board of directors (the "9.9% Voting Cutback"). If the 9.9% Voting Cutback is applicable to any person, excess voting power generally will be reallocated to all other Class A common shares, including those held by AGM and its affiliates. Further, the voting power of Class A common shares that are owned (or treated as owned) by certain persons who own (or are treated as owning) any AGM stock would also be reallocated to all other Class A common shares, including those held by AGM and its affiliates. Our bye-laws limit these reallocations of voting power so that AGM, and any person or persons who control AGM, would not own (or be treated as owning) more than 49.9% of the total voting power of our stock if they do not own (and are not treated as owning) more than 50% of the total value of our stock. These rules are intended to prevent any such reallocation of voting power from causing AGM to be considered to control us or to be controlled by the same persons who control us for purposes of the RPII provisions. However, because the relevant attribution rules are complex and there is no definitive legal authority on whether these voting provisions are effective for these purposes, there can be no assurance that this will be the case.

Our bye-laws also generally provide that no person (nor certain direct or indirect beneficial owners or related persons to such person) who owns our equity securities may acquire any shares of AGM or otherwise make any investment that would cause such person, or any other person that is a U.S. person, to own (or be treated as owning) more than 50% of the vote or value of our equity securities. Any holder of our equity securities that violates this restriction may be required, at the discretion of our board of directors, to sell its equity securities or take any other reasonable action that our board of directors deems necessary. However, this restriction does not apply to members of the Apollo Group.

We have only a limited ability to determine whether any of the Non-U.S. Insurance Companies is treated as recognizing RPII in a taxable year, the amount of any such RPII or any U.S. person's share of such RPII, and to obtain the information necessary to accurately make such determinations or fully enforce the voting provisions and ownership restrictions described above. We will take reasonable steps to obtain such information, but there can be no assurances that such steps will be adequate or that we will be successful in this regard. Accordingly, no assurances can be provided that the adverse RPII consequences described above will not apply to all U.S. persons that hold our equity securities directly or indirectly through non-U.S. entities.

The following updates and replaces, in its entirety, the risk factor entitled *Our bye-laws contain provisions that cause a holder of Class A common shares to lose the right to vote the shares if the holder owns an equity interest in Apollo, AP Alternative Assets, L.P. (AAA) or certain other entities* in our 2019 Annual Report:

Our bye-laws contain provisions that may cause a holder of Class A common shares to lose the right to vote the shares if the holder or certain connected persons own an equity interest in AGM.

Our bye-laws contain a voting restriction that can result in any "Restricted Common Shares" having no right to vote. A holder's Class A common shares are considered "Restricted Common Shares" if and when the holder or any person who is considered to indirectly or constructively own any of the holder's shares (other than certain members of the Apollo Group) owns (directly, indirectly or constructively) any stock of AGM. This voting restriction applies only if there is a person who (together with its affiliates) beneficially owns Class A common shares that would, absent the voting adjustments in our bye-laws, possess more than 9.9% of the total voting power of our Class A common shares and who has not received the consent of at least 70% (75% after March 31, 2021) of our board of directors to exceed such voting threshold. This voting restriction does not affect the transferability of Class A common shares and will not apply after any date identified as the "Restriction Termination Date" by at least 70% (75% after March 31, 2021) of our board of directors.

The following updates and replaces, in their entirety, the similarly named risk factors in our 2019 Annual Report:

Our bye-laws contain provisions that could discourage takeovers and business combinations that our shareholders might consider in their best interests, including provisions that prevent a holder of Class A common shares from having a significant stake in Athene.

Our bye-laws include certain provisions that could have the effect of delaying, deferring, preventing or rendering more difficult a change of control that holders of our Class A common shares might consider in their best interests. For example, our bye-laws contain voting adjustments that may reduce the votes of a holder's Class A common shares to the extent necessary to prevent any person (together with its affiliates) from beneficially owning Class A common shares having more than 9.9% of the total voting power of our Class A common shares, unless such person has received the consent of at least 70% (75% after March 31, 2021) of our board of directors to exceed such threshold. In addition, if the votes of any Class A common shares are required to be reduced pursuant to these adjustments, the votes of all Class A common shares that are "Restricted Common Shares" generally are reduced to zero. The votes of all Class A common shares that did not suffer a reduction in votes are then increased, pro rata based on their then current voting power, in an aggregate amount equal to the aggregate reduction in votes under the voting adjustments described above, except that the increase in votes of any Class A common share is limited to the extent necessary to avoid triggering further voting reductions and to avoid creating a "RPII Control Group," as defined in our bye-laws. Such adjustments, if implicated, would result in some Class A common shares having more than one vote per share. Therefore, a shareholder's voting rights may increase above 5% of the aggregate voting power of our Class A common shares, even if the shareholder holds fewer than 5% of our Class A common shares, thereby possibly resulting in the shareholder becoming a reporting person subject to Schedule 13D or 13G filing requirements under the Exchange Act. These requirements could discourage any potential investment in our Class A common shares. In addition, our board of directors is classified into three classes of directors, with directors of each class serving staggered three-year terms. Any change in the number of directors is required by our bye-laws to be apportioned among the classes so as to maintain the number of directors in each class as nearly equal as possible, and any additional director of any class elected to fill a vacancy resulting from an increase in such class or from the removal of a director will hold such directorship for a term that coincides with the remaining term of that class. Moreover, our bye-laws require specific advance notice procedures and other protocols for holders of common shares to make shareholder proposals and nominate directors. Among other requirements, a shareholder must meet the minimum requirements for eligible shareholders to submit shareholder proposals under Rule 14a-8 of the Exchange Act, and submit specific information and make specific undertakings in relation to the shareholder proposal or director nomination.

Any or all of these provisions could prevent holders of our Class A common shares from receiving the benefit from any premium to the market price of our Class A common shares offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of any of these provisions could adversely affect the prevailing market price of our Class A common shares if they were viewed as discouraging takeover attempts in the future.

Future sales of common shares by existing shareholders could cause our share price to decline.

Sales of substantial amounts of our Class A common shares in the public market, or the perception that these sales could occur, could cause the market price of our Class A common shares to decline. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

We have filed registration statements on Form S-8 under the Securities Act to register the Class A common shares to be issued under our 2017 employee stock purchase plan (ESPP) and our equity compensation plans and, as a result, all Class A common shares acquired upon the purchase of shares under our ESPP and the vesting of share awards or the exercise of stock options granted under our equity compensation plans will also be freely tradeable under the Securities Act, subject to the terms of any lock-up agreements, unless purchased by our affiliates. As of March 31, 2020, 6.1 million common shares are reserved for future issuances under our ESPP and equity incentive plans, in the aggregate. The issuance of these shares or their subsequent sale may cause our share price to decline.

Pursuant to the shareholders agreement among us and certain members of the Apollo group that was entered into in connection with the share issuance transaction with Apollo, AGM and certain of its affiliates agreed not to directly or indirectly transfer any Class A common share prior to February 28, 2023, subject to certain exceptions (Apollo Lock-up). As of March 31, 2020, there more than 50 million shares subject to the Apollo Lock-up. When the Apollo Lock-up ends, the market price of our common shares could decline if the holders of those shares sell them or are perceived by the market as intending to sell them. Furthermore, Apollo has the right to require, subject to the expiration or waiver of the Apollo Lock-up, us to register Class A common shares for resale in certain circumstances pursuant to the registration rights agreements we have entered into with Apollo.

In the future, we may issue additional common shares or other equity or debt securities convertible into or exercisable or exchangeable for Class A common shares in connection with a financing, strategic investment, litigation settlement or employee arrangement or otherwise. Any of these issuances could result in substantial dilution to our existing shareholders and could cause the trading price of our Class A common shares to decline.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Recent Sales of Unregistered Securities

Previously reported in the Current Report on Form 8-K filed with the SEC on March 2, 2020.

Issuer Purchases of Securities

Purchases of common stock made by or on behalf of us or our affiliates during the three months ended March 31, 2020 are set forth below:

Period	(a) Total number of shares purchased[1,3,4]	(b) Average price paid per share[3]	(c) Total number of shares purchased as part of publicly announced programs[1,2]	(d) Maximum number (or approximate dollar value) of shares that may yet be purchased under the plans or programs[2]
January 1 – January 31, 2020	51,723	$ 46.88	2,193	$ 640,063,226
February 1 – February 29, 2020	36,416,090	$ 42.71	821,749	$ 600,462,375
March 1 – March 31, 2020	9,628,573	$ 32.03	9,624,573	$ 321,408,033

[1] *Except as described in footnotes 3 and 4 below, differences in amounts between column (a) and (c) relate to shares withheld (under the terms of employee stock-based compensation plans) to offset tax withholding obligations that occur upon the delivery of outstanding shares underlying equity awards or upon the exercise of stock options.*

[2] *Prior to August 5, 2019, we had announced approvals by our board of directors for $617 million of aggregate repurchases under our share repurchase program. Amounts authorized for repurchase under those approvals had been fully used prior to December 31, 2019. On August 5, 2019, we announced that our board of directors had approved an additional $350 million authorization for the repurchase of our Class A common shares. On October 28, 2019, we announced that our board of directors had approved an additional $600 million authorization for the repurchase of our Class A common shares. Neither of the remaining authorizations have a definitive expiration date, but may be terminated at any time at the sole discretion of our board of directors. See Note 8 – Equity to the condensed consolidated financial statements for more information.*

[3] *AOG, our affiliate, purchased 35,534,942 Class A common shares on February 28, 2020. The average price paid per share is calculated based on the fair value of the AOG units and cash consideration we received upon closing of the transaction. See Note 9 – Related Parties to the condensed consolidated financial statements for further detail.*

[4] *Marty Klein, our Chief Financial Officer, purchased 4,000 Class A common shares on March 13, 2020.*

Purchases of depositary shares made by or on behalf of us or our affiliates during the three months ended March 31, 2020:

Period	(a) Total number of shares purchased[1]	(b) Average price paid per share	(c) Total number of shares purchased as part of publicly announced programs[2]	(d) Maximum number (or approximate dollar value) of shares that may yet be purchased under the plans or programs[2]
January 1 – January 31, 2020	—	$ —	—	$ —
February 1 – February 29, 2020	—	$ —	—	$ —
March 1 – March 31, 2020	800	$ 22.41	—	$ —

[1] *Purchases relate to certain executive officers or members of our board of directors as our affiliates.*

[2] *As of March 31, 2020, our board of directors had not authorized any purchases of depositary shares in connection with a publicly announced plan or program.*

EXHIBIT INDEX

Exhibit No.	Description
3.1	Thirteenth Amended and Restated Bye-laws of Athene Holding Ltd., effective February 28, 2020 (incorporated by reference to Exhibit 3.1 to the Form 8-K filed on March 2, 2020 dated February 28, 2020).
4.1	Form of Warrant (incorporated by reference to Exhibit 4.2 to the Form S-3ASR filed on March 17, 2020).
4.2	Second Supplemental Indenture, dated April 3, 2020, between Athene Holding Ltd. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to the Form 8-K filed on April 6, 2020).
4.3	Form of 6.150% Senior Notes due 2030 (incorporated by reference to Exhibit 4.3, as included in Exhibit 4.2, to the Form 8-K filed on April 6, 2020).
10.1	Shareholders Agreement, dated as of February 28, 2020, among Athene Holding Ltd. and each person identified on the signature pages thereto as an Apollo Shareholder.
10.2	Registration Rights Agreement, dated as of February 28, 2020, between Athene Holding Ltd. and Apollo Global Management, Inc.
10.3	Liquidity Agreement, dated as of February 28, 2020, between Apollo Global Management, Inc. and Athene Holding Ltd.
10.4	Third Amendment to Shareholders Agreement, effective as of February 13, 2020, by and among Athene Co-Invest Reinsurance Affiliate 1A Ltd., ADIP Holdings (A), L.P., ADIP Holdings (B), L.P., ADIP Holdings (C), L.P., ADIP Holdings (D), L.P., ADIP Holdings (E), L.P., ADIP Holdings (Lux), L.P. and Athene Life Re Ltd.
31.1	Principal Executive Officer Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Principal Financial Officer Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Principal Executive Officer Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Principal Financial Officer Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

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.

ATHENE HOLDING LTD.

Date: May 8, 2020

/s/ Martin P. Klein

Martin P. Klein
Executive Vice President and Chief Financial Officer
(principal financial officer and duly authorized signatory)

Exhibit 10.1

EXECUTION VERSION

SHAREHOLDERS AGREEMENT

dated as of

February 28, 2020

by and among

ATHENE HOLDING LTD.

and

THE APOLLO SHAREHOLDERS

TABLE OF CONTENTS **Page**

TABLE OF CONTENTS
(Continued) Page

INDEX OF DEFINED TERMS

INDEX OF DEFINED TERMS
(Continued)

SHAREHOLDERS AGREEMENT

SHAREHOLDERS AGREEMENT (this "Agreement"), dated as of February 28, 2020, by and among Athene Holding Ltd., a Bermuda exempted company ("AHL") and each Person identified on the signature pages hereto as an Apollo Shareholder (together with any other shareholders of AHL who become party hereto as "Apollo Shareholders" in accordance with this Agreement, the "Apollo Shareholders").

WHEREAS, in connection with the transactions contemplated by that certain Transaction Agreement, dated as of October 27, 2019, by and among Apollo Global Management, Inc., a Delaware corporation, AHL and the other parties thereto (the "Transaction Agreement"), AHL and the Apollo Shareholders desire to address herein certain relationships among themselves; and

WHEREAS, the parties hereto desire to provide for certain governance rights and other matters on and after the Closing.

NOW, THEREFORE, in consideration of the mutual covenants and undertakings contained herein and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

ARTICLE I
DEFINITIONS AND USAGE

Section 1.1 Definitions. As used in this Agreement, the following terms shall have the following meanings:

"Affiliate" means in the case of a Person, another Person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with such Person; provided, that none of AHL and its Subsidiaries will be deemed an Affiliate of any Apollo Shareholder or any of such Apollo Shareholders' Affiliates for purposes of this Agreement.

As used in this definition, the term "control," including the correlative terms "controlling," "controlled by" and "under common control with," means possession, directly or indirectly, of the power to direct or cause the direction of management or policies (whether through ownership of securities or any partnership or other ownership interest, by contract or otherwise) of a Person.

"AGM" Apollo Global Management, Inc., a Delaware corporation.

"Apollo Related Holder Shares" means the number of Class A Shares that AGM can reasonably demonstrate with documentary or other evidence to the reasonable satisfaction of AHL are beneficially owned in the aggregate by the Apollo Shareholders, the controlled Affiliates of AGM and the Persons set forth on Exhibit A (excluding for this purpose any

Class A Shares to which the Apollo Shareholders have been granted a proxy by an employee of AHL).

"Apollo Representative" means Apollo Management Holdings, L.P. or, subject to receipt of all required regulatory consents, authorizations and approvals (if any), such other Apollo Shareholder selected by the Apollo Shareholders and designated by the Apollo Representative in a written notice to AHL.

"beneficial ownership" has the meaning assigned to such term in Rule 13d-3 and Rule 13d-5 under the Exchange Act. The terms "beneficially own" and "beneficial owner" shall have correlative meanings.

"Board of Directors" means the board of directors of AHL.

"Business Day" means any day other than Saturday, Sunday, any day which shall be a federal legal holiday in the United States or Bermuda or any day on which banking institutions in The State of New York are authorized or required by Law or other governmental action to close.

"Class A Shares" means the Class A common shares, $0.001 par value per share, of AHL.

"Closing" has the meaning given to such term in the Transaction Agreement.

"Closing Date" has the meaning given to such term in the Transaction Agreement.

"Closing Price" means the average of the closing bid and asked prices on such date, as officially reported on the principal national securities exchange on which the Class A Shares are then listed or admitted to trading.

"Competitor" means any Person that is, or is affiliated in any manner with any other Person that is the reasonable good faith judgement of AHL in direct competition with, or controls any Person in direct competition with, AHL; provided that none of AGM or any of its Affiliates shall be deemed a Competitor at any time other than an Affiliate of AGM that is itself a Portfolio Company which may be deemed a Competitor to the extent such Portfolio Company is itself a Competitor pursuant to this definition.

"Confidential Information" means all non-public information (irrespective of the form of communication, and irrespective of whether obtained prior to or after the date hereof or whether pursuant to this Agreement or otherwise) concerning AHL and its Controlled Affiliates that may be or may have been furnished to any Person by or on behalf of AHL, its Controlled Affiliates or any of their respective representatives, pursuant to or in connection with this Agreement, other than information which (a) becomes generally available to the public other than as a result of a breach of this Agreement or another duty or obligation of confidentiality, (b) becomes available to such Person on a non-confidential basis from a source other than AHL, its Controlled Affiliates or any of their respective representatives; provided that the source thereof is not known by such Person or its Affiliates or its or their respective representatives to be bound by a duty or obligation of confidentiality, or (c) is independently developed by such Person, its Affiliates or its or their respective representatives without the use of or reference to any information that would otherwise be Confidential Information hereunder.

"Controlled Affiliate" of any Person means any Affiliate that directly or indirectly, through one or more intermediaries, is controlled (as defined in the definition of "Affiliate") by such Person.

"Controlled Entity" means, as to any Person, (a) any corporation more than fifty percent (50%) of the outstanding voting stock of which is owned by such Person or such Person's Affiliates, (b) any partnership of which such Person or an Affiliate of such Person is the managing partner (or the general partner if such partnership is a limited partnership) and in which such Person or such Person's Affiliates hold partnership interests representing at least fifty percent (50%) of such partnership's capital and profits and (c) any limited liability company of which such Person or an Affiliate of such Person is the manager or managing member and in which such Person or such Person's Affiliates hold membership interests representing at least fifty percent (50%) of such limited liability company's capital and profits.

"Convertible Securities" means any stock or securities directly or indirectly convertible into or exercisable or exchangeable for Class A Shares (excluding any unvested options or similar interests that are subject to vesting and any options or other similar interests that are not then exercisable).

"Exchange Act" means the Securities Exchange Act of 1934, as amended, and any successor Law, in each case together with the rules and regulations promulgated thereunder.

"Fall-away Date" means the first date on which (i) the Apollo Related Holder Shares represent less than seven and one-half percent (7.5%) of the total aggregate number of Class A Shares issued and outstanding, or (ii) the Apollo Shareholders have a Percentage Interest of less than five percent (5%).

"Funds" means any separate account, client (other than AHL and its Subsidiaries), investment vehicle or similar entity sponsored, advised or managed, directly or indirectly, by AGM or any of its Subsidiaries.

"Governing Documents" means the legal document(s) by which any Person (other than an individual) establishes its legal existence or which govern its internal affairs. For example, the "Governing Documents" of a corporation are its certificate or articles of incorporation and by-laws, the "Governing Documents" of a limited partnership are its limited partnership agreement and certificate of limited partnership and the "Governing Documents" of a limited liability company are its operating agreement and certificate of formation or articles of organization.

"Governmental Entity" means any federal, state, local, municipal or foreign government or subdivision thereof or any other governmental, administrative, judicial, arbitral, legislative, executive, regulatory or self-regulatory authority (including the New York Stock Exchange and FINRA—Financial Industry Regulatory Authority), instrumentality, agency, commission or body.

"Hedging Transaction" means any short sale (whether or not against the box) or any purchase, sale, pledge or grant of any right (including any put or call option) with respect to any security (other than a broad-based market basket or index) that includes, relates to or derives any significant part of its value from the Class A Shares.

"Law" means any federal, state, local, municipal, foreign or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, regulation, order, award, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Entity.

"Liquidity Agreement" means the Liquidity Agreement, dated as of the date hereof, by and among AGM, AHL and the other parties thereto

"Percentage Interest" means, with respect to any Person and as of any time of determination, a fraction, expressed as a percentage, the numerator of which is the number of Class A Shares held or beneficially owned by such Person, including Class A Shares to which such Person has been granted a valid proxy, as of such date and the denominator of which is the aggregate number of Class A Shares issued and outstanding as of such date.

"Permitted Transferee" means, with respect to any Person, any Controlled Entity or Affiliate of such Person, a Transfer to which such Controlled Entity or Affiliate would not reasonably be expected to result in adverse tax or regulatory consequences to any party hereto, as reasonably determined by AHL in good faith; provided, however, that no Person that is a Competitor shall be a Permitted Transferee for purposes of this Agreement; provided further that such Permitted Transferee has signed a joinder pursuant to Section 2.5.

"Person" means any individual, partnership, firm, corporation, limited liability company, association, trust, unincorporated organization or other entity.

"Portfolio Companies" means any Person in which any Fund owns or has made, directly or indirectly, an investment.

"SEC" means U.S. Securities and Exchange Commission.

"Securities Act" means the Securities Act of 1933, as amended, and any successor Law, in each case together with the rules and regulations promulgated thereunder.

"Subsidiary" means, with respect to any Person, any corporation or other entity of which a majority of (i) the voting power of the voting equity securities or (ii) the outstanding equity interests is owned, directly or indirectly, by such Person.

"Transfer" means any direct or indirect sale, assignment, bequest, conveyance, devise, gift (outright or in trust), pledge, charge, encumbrance, hypothecation, mortgage, creation of a security interest in, exchange, transfer or other disposition or act of alienation, whether voluntary or involuntary or by operation of Law (including the creation of any derivative or synthetic interest). The terms "Transferred" and "Transferrable" have correlative meanings.

"VWAP" means, with respect to any publicly traded equity security, the volume weighted average price of such equity security over a specified period of time as reported by Bloomberg (or its equivalent, nationally recognized successor if Bloomberg ceases to provide such reports).

Section 1.2 Interpretation. In this Agreement and in the exhibits hereto, except to the extent that the context otherwise requires:

(a) the headings are for convenience of reference only and shall not affect the interpretation of this Agreement;

(b) defined terms include the plural as well as the singular and vice versa;

(c) words importing gender include all genders;

(d) a reference to any statute or statutory provision shall be construed as a reference to the same as it may have been or may from time to time be amended, extended, re-enacted or consolidated and to all statutory instruments or orders made thereunder;

(e) any agreement or instrument defined or referred to herein or in any agreement or instrument that is referred to herein means such agreement or instrument as from time to time amended, modified, supplemented or restated, including by waiver or consent, and references to all attachments thereto and instruments incorporated therein, but in the case of each of the foregoing, only to the extent that such amendment, modification, supplement, restatement, waiver or consent is effected in accordance with this Agreement;

(f) any reference to "day" or "month" means a calendar day or a calendar month;

(g) any reference to a "day" means the whole of such day, being the period of 24 hours running from midnight to midnight;

(h) references to Articles, Sections, subsections, clauses and Exhibits are references to Articles, Sections, subsections, clauses and Exhibits of and to this Agreement;

(i) the words "including" and "include" and other words of similar import shall be deemed to be followed by the phrase "without limitation";

(j) the word "or" shall be disjunctive but not exclusive; and

(k) unless otherwise specified, references to any party to this Agreement or any other document or agreement shall include such party's successors and permitted assigns.

ARTICLE II
TRANSFER

Section 2.1 Generally. The parties hereto acknowledge and agree that the Class A Shares held by any Apollo Shareholder may not be Transferred to any Person, and no Apollo Shareholder shall have any right to Transfer or otherwise dispose of any Class A Shares, other than (a) after consultation with AHL, and subject to receipt of all required regulatory consents, authorizations and approvals, to a Permitted Transferee; or (b) in accordance with and subject to the terms of this Agreement.

Section 2.2 Apollo Lockup. For the period beginning on the Closing Date and ending on the three (3) year anniversary of the Closing Date (the "Lock-Up Period") no Apollo Shareholder shall (a) directly or indirectly, Transfer any Class A Share to any Person other than to a Permitted Transferee as permitted under Section 2.1, or (b) enter into any Hedging Transaction.

Section 2.3 Additional Transfer Restrictions. From and after the expiration of the Lock-Up Period (or prior to such expiration in connection with a Transfer to a Permitted Transferee pursuant to Section 2.1), no Apollo Shareholder shall directly or indirectly, Transfer any Class A Share to any Person that, (a) is a Competitor or (b) to the knowledge of such Apollo Shareholder, after reasonable inquiry (including, where practicable, obtaining a representation of the ownership of Class A Shares of such proposed transferee), would have a Percentage Interest in excess of two and one half of a percent (2.5%) after giving effect to such Transfer; provided, however, that the restrictions in this Section 2.3 shall not apply to any sale of any Class A Share on a national stock exchange or pursuant to a widely distributed underwritten public offering.

Section 2.4 Right of First Offer. Except for Transfers (x) to a Permitted Transferees pursuant to Section 2.1(a) or (y) that are registered under the Securities Act:

(a) Right of First Offer. If, following the Lock-Up Period, any Apollo Shareholder proposes to effect a Transfer (such Person proposing to effect such Transfer, the "ROFO Offeror" and such transaction, a "ROFO Transaction") of all or any of its Class A Shares to any Person other than a Permitted Transferee (the "ROFO Purchaser"), then the ROFO Offeror shall give prior written notice to AHL of such Transfer (a "ROFO Notice"), which ROFO Notice shall set forth the aggregate number of Class A Shares proposed to be subject to Transfer by the ROFO Offeror.

(b) Exercise of ROFO.

(i) Within five (5) days after the delivery of the ROFO Notice to AHL (the "Initial ROFO Period"), AHL shall have the right and option, but not the obligation, to deliver a written notice offering to purchase the Class A Shares subject to such ROFO Notice (the "ROFO Offer Notice"), which ROFO Offer Notice shall set forth the material terms and conditions of the proposed ROFO Transaction (including (i) the proposed price per Class A Share and the form of consideration, if other than cash and (iii) the proposed terms and conditions of payment). If AHL delivers a ROFO Offer Notice in accordance with this Section 2.4(b) and the ROFO Offeror wishes to accept the offer in such ROFO Offer Notice, AHL and the ROFO Offeror shall negotiate in good faith to enter into definitive documentation with respect to such ROFO Transaction within five (5) days (the "ROFO Negotiation Period") of the date of the ROFO Offer Notice. If the ROFO Offer Notice is given to the ROFO Offeror but the ROFO Offeror does not wish to accept the offer in such ROFO Offer Notice or AHL (or its designated Affiliate(s)) and the ROFO Offeror fail to enter into definitive documentation with respect to the ROFO Transaction prior to the expiration of the ROFO Negotiation Period, the ROFO Offeror shall be permitted to enter into and consummate a ROFO Transaction with one or more transferees on terms and conditions substantially similar to (and in no event more favorable to the transferee than) the terms and conditions set forth in the ROFO Offer Notice, so long as the ROFO Offeror has complied with the other provisions of this Agreement.

(ii) If a ROFO Notice is given to AHL, and during the Initial ROFO Period, AHL does not deliver a ROFO Offer Notice in accordance with this Section 2.4(b), the ROFO Offeror shall be free, upon the expiration of the Initial ROFO Period, to enter into and consummate a ROFO Transaction with one or more transferees, so long as the ROFO Offeror has complied with the other provisions of this Agreement.

(iii) If, at the end of the ninety (90) day period following the end of the ROFO Negotiation Period (or, if no ROFO Offer Notice was delivered by AHL pursuant to this Section 2.4, the end of the Initial ROFO Period) with respect to a ROFO Notice delivered to AHL pursuant to this Section 2.4 that did not result in a transaction being consummated between AHL and the ROFO Offeror, the ROFO Offeror has not consummated the applicable ROFO Transaction, then such ROFO Transaction shall be deemed to have been abandoned and may only be completed if the procedures set forth in this Section 2.4 are followed again with respect to such ROFO Transaction.

(c) ROFO Transaction Closing. The closing (a "ROFO Closing") of any Transfer by the ROFO Offeror to AHL or its designated Affiliates under this Section 2.4 (any such Transfer, an "Exercised ROFO Transaction") shall take place on such date as is set forth in the definitive transaction agreement entered into between, on the one hand, the ROFO Offeror, and, on the other hand, AHL or such Affiliates (with respect to a particular Exercised ROFO Transaction under this Section 2.4, such date, the "ROFO Closing Date").

At the ROFO Closing, (i) AHL or such Affiliates shall pay or cause to be paid to the ROFO Offeror the applicable purchase price in cash in immediately available funds (or other consideration as may be agreed by AHL or such Affiliate(s), on the one hand, and the ROFO Offeror, on the other hand) and (ii) (x) the ROFO Offeror shall Transfer the Class A Shares sold pursuant to such Exercised ROFO Transaction to AHL or such Affiliates and (y) the ROFO Offeror shall cease to hold the Class A Shares sold pursuant to such Exercised ROFO Transaction.

Section 2.5 Transfers and Joinders. If any Apollo Shareholder effects any Transfer of Class A Shares to a Permitted Transferee, such Apollo Shareholder shall, if such Permitted Transferee is not an Apollo Shareholder, prior to or concurrently with such Transfer, cause such Permitted Transferee to execute a joinder to this Agreement, in form and substance reasonably acceptable to AHL, in which such Permitted Transferee agrees to be an "Apollo Shareholder" for all purposes of this Agreement and which provides that such Permitted Transferee shall be bound by and shall fully comply with the terms of this Agreement that are applicable to Apollo Shareholders. Notwithstanding the foregoing or anything herein to the contrary, such Apollo Shareholder shall not be relieved of any obligation or liability hereunder arising prior to the consummation of such Transfer.

Section 2.6 Binding Effect on Transferees. Subject to execution of a joinder to this Agreement prior to or concurrently with the applicable Transfer, in form and substance reasonably acceptable to AHL pursuant to Section 2.5, such Permitted Transferee shall become an Apollo Shareholder hereunder.

Section 2.7 Improper Transfer. Any attempt to Transfer any Class A Shares other than in accordance with this Agreement shall be null and void and no right, title or interest in or to such Class A Shares shall be Transferred to the purported transferee, buyer, donee, assignee or encumbrance holder in connection with any attempted Transfer. AHL will not give, or permit its transfer agent to give, any effect to any such attempted Transfer on its records.

Section 2.8 Certain Transfers. Notwithstanding anything to the contrary in this Agreement, nothing in this Agreement shall prohibit, restrict or impose any conditions on any Transfer of Class A Shares by any Fund or Portfolio Company, except to the extent that such Class A Shares were Transferred to such Fund or Portfolio Company by an Apollo Shareholder after the date hereof.

ARTICLE III
BOARD REPRESENTATION; INFORMATION

Section 3.1 Apollo Nominees.

(a) Until the Fall-away Date, AHL shall take all necessary actions so as to cause to be nominated for election to the Board of Directors at each annual or special general meeting at which the shareholders will vote on the election of directors, a number of individuals nominated by the Apollo Shareholders (which shall act for such purposes through the Apollo Representative) who meet all legal and regulatory requirements necessary to serve on the Board of Directors equal to (x) the Percentage Interest of the Apollo Shareholders multiplied by the total number of directorships comprising the Board of Directors (i.e., for the avoidance of doubt, including any vacancies and newly created directorships) and rounded up to the nearest whole number (for sake of clarity, the result of this calculation shall not equal less than zero and any number that is not a whole number shall be rounded to the next highest whole number) (each such Person nominated pursuant to this Section 3.1, an "Apollo Nominee"), minus (y) the number of Apollo Nominees then serving on classes of the Board of Directors whose terms are not expiring at such annual or special general meeting. Notwithstanding the foregoing, the number of Apollo Nominees shall not equal or exceed a majority of the individuals nominated to serve on the Board of Directors unless the Percentage Interest of the Apollo Shareholders is greater than fifty percent (50%). For purposes of the nomination right set forth in this Section 3.1, the employees of or consultants to AGM and its Affiliates who are on the Board of Directors as of the date hereof (other than the Chief Executive Officer of the Company) shall be deemed to be Apollo Nominees.

(b) Prior to the Fall-away Date, if any Apollo Nominee should resign from the Board of Directors or be rendered unable to serve on the Board of Directors by reason of death or disability or otherwise, then the Apollo Shareholders (which shall act for such purposes through the Apollo Representative) shall be entitled to nominate a replacement meeting all legal and regulatory requirements necessary to serve on the Board of Directors and AHL shall use commercially reasonable efforts to cause the Board of Directors to cause such vacancy to be filled with such replacement Apollo Nominee; provided, that for the avoidance of doubt, the Apollo Shareholders shall not have the right to nominate a new Apollo Nominee, and AHL shall not be required to take any action to cause any vacancy to be filled with any such new Apollo Nominee, to the extent that election of such new Apollo Nominee to the Board of Directors would result in a number of Apollo Nominees serving on the Board of Directors being in excess of the number of Apollo Nominees to which the Apollo Shareholders is then entitled pursuant to Section 3.1(a). Any such nominated replacement who becomes a member of the Board of Directors shall be deemed to be an Apollo Nominee for all purposes under this Agreement.

(c) AHL shall (i) use commercially reasonable efforts to cause the Board of Directors to recommend to AHL shareholders to vote in favor of the election of each Apollo Nominee, (ii) use commercially reasonable efforts to solicit proxies or consents in favor of the Apollo Nominees to the same or greater extent as it does so in favor of the other persons nominated or recommended by the Board of Directors (or a committee thereof), and (iii) reasonably cooperate with the Apollo Shareholders with respect to the Apollo Shareholders' desired classification of the Apollo Nominees across the various classes of the Board of Directors.

(d) The Apollo Shareholders' right to nominate the Apollo Nominees is personal to the Apollo Shareholders and shall not be Transferrable to any other Person.

Section 3.2 Books and Records; Access. Without derogating from any rights the Apollo Shareholders have under any other agreement or otherwise, until the Fall-away Date, AHL shall, and shall cause its Subsidiaries to, permit the Apollo Shareholders and their respective designated representatives, upon reasonable prior notice to AHL: (a) to inspect, review or make copies and extracts during normal business hours from the books and records of AHL or any of such Subsidiaries and (b) once during any fiscal quarter to discuss the affairs, finances and condition of AHL or any of such Subsidiaries with the officers and public accountants of AHL or any such Subsidiary. Notwithstanding the foregoing or anything in this Agreement to the contrary, AHL shall not be required to provide such portions of any materials pursuant to this Section 3.2 containing attorney-client, work product or similar privileged information of AHL or any of their respective Subsidiaries or other information required by AHL or any of its Subsidiaries to be kept confidential pursuant to and in accordance with the terms of any confidentiality agreement with a third Person or applicable Law, so long as AHL has used its commercially reasonable efforts to enter into an arrangement pursuant to which it may provide such information to the Apollo Shareholders without the loss of any such privilege or without violating such confidentiality obligation. If the Apollo Shareholders exercise their rights pursuant to this Section 3.2, it shall be at the sole cost and expense of the Apollo Shareholders.

Section 3.3 Confidentiality. Each Apollo Shareholder shall, and shall cause the Apollo Nominees to, keep confidential all Confidential Information; provided, that such Apollo Shareholder may, subject to and in compliance with applicable securities Laws, provide Confidential Information to any of its Affiliates or representatives to the extent reasonably necessary (and to the extent such Person reasonably needs to know such information) in connection with such Apollo Shareholder's investment in AHL; provided, however, that such Apollo Shareholder shall cause any such recipient to agree to comply, and to comply, with the provisions of this Section 3.3, as well as Section 3.4, which are applicable to such Apollo Shareholder, it being understood that such Apollo Shareholder shall be responsible for any breach of the provisions hereof by such recipient. Notwithstanding the foregoing, such Apollo Shareholder, and any director, officer or employee of such Apollo Shareholder who receives Confidential Information (or any other Person who receives Confidential Information from such Apollo Shareholder in accordance with the terms of this Agreement) may disclose any such Confidential Information to the extent required by applicable Law; provided that, to the extent practicable and legally permissible, the disclosing party (a) gives AHL reasonable notice of any such requirement so that AHL may seek appropriate protective measures (at AHL's sole cost and expense) and (b) to the extent requested in writing by AHL, reasonably cooperates with AHL (at AHL's sole cost and expense) in attempting to obtain such protective measures.

Section 3.4 Securities Laws. Each Apollo Shareholder acknowledges that it is aware, and will advise any of its Affiliates who receive Confidential Information pursuant to Section 3.1, Section 3.2 or otherwise, that applicable securities Laws prohibit any Person who has received material, non-public information from purchasing or selling securities on the basis of such information or from communicating such information to any other Person unless in compliance with such Laws.

ARTICLE IV
CAPITAL SUPPORT FACILITY

Section 4.1 Capital Support Facility. AHL hereby grants the Apollo Representative, or its designees as set out below, a right (the "Facility Right"), exercisable on one or more occasions, to purchase up to that number of Class A Shares that would increase by five (5) percentage points the percentage of the issued and outstanding Class A Shares represented by the Conditional Right Parties Shares (as defined in the Transaction Agreement) (including in the denominator the maximum number of Class A Shares issuable upon conversion of all outstanding Convertible Securities and the Class A Shares issued pursuant to the Facility Right) as further described in this Section 4.1, for a purchase price equal to the higher of the Closing Price of the Class A Shares on the last trading day immediately prior to the applicable exercise of the Facility Right and (a) for the first year after the Closing, $42.92, and (b) thereafter, the 60 calendar day trailing VWAP of such Class A Shares as of the applicable exercise date of the Facility Right (the "Facility Price"). The Apollo Representative shall have the right to exercise the Facility Right at any time following the Closing. The Facility Right may be exercised in whole or in part, and on one or more occasion but, except to the extent that the exercise of a lesser percentage would result in the Facility Right being exercised in whole, each exercise will increase by no less than one (1) percentage point the percentage of the issued and outstanding Class A Shares as of such date of exercise represented by the Conditional Right Parties Shares (including in the denominator the maximum number of Class A Shares issuable upon conversion of all outstanding Convertible Securities and the Class A Shares issued pursuant to such exercise of the Facility Right). For illustrative purposes, if the Apollo Representative exercises the Facility Right to increase by one (1) percentage point the percentage of the issued and outstanding Class A Shares as of such date of exercise represented by the Conditional Right Parties Shares (including in the denominator the maximum number of Class A Shares issuable upon conversion of all outstanding Convertible Securities and the Class A Shares issued pursuant to such exercise of the Facility Right), then the Apollo Representative will continue to have the right to, at a later date, increase by four (4) percentage points the percentage of the issued and outstanding Class A Shares as of such later date of exercise represented by the Conditional Right Parties Shares (including in the denominator the maximum number of Class A Shares issuable upon conversion of all outstanding Convertible Securities and the Class A Shares issued pursuant to such later exercise of the Facility Right).

Section 4.2 Exercise Procedures. To exercise the Facility Right, the Apollo Representative shall deliver a written notice of such exercise (the "Exercise Notice") to AHL. The Exercise Notice shall indicate the number of Class A Shares or percentage of Class A Shares as of such date of exercise (including in the denominator the maximum number of Class A Shares issuable upon conversion of all outstanding Convertible Securities and the Class A Shares issued pursuant to such exercise of the Facility Right) that the Apollo Representative, or its designees as set out below, is purchasing pursuant to the Facility Right (the "Facility Shares"). As promptly as reasonably practicable, but not less than five (5) Business Days following the delivery of an Exercise Notice to AHL (provided that such period shall be tolled to the extent necessary to obtain all required regulatory consents, authorizations and approvals, including those implicated for any Affiliates), AHL and the Apollo Representative shall effect the closing of the purchase indicated by the Exercise Notice (the "Facility Closing"). At the Facility Closing, (a) the Apollo Representative shall pay or cause to be paid to AHL, by wire transfer to an account designated in writing to the Apollo Representative by AHL for such purpose, an amount in U.S. dollars that is equal to the aggregate Facility Price in respect of the number of Facility Shares indicated by the Exercise Notice, and (b) AHL shall issue the Facility Shares indicated in the Exercise Notice to the Apollo Representative or one (1) or more Affiliates of the Apollo Representative designated by the Apollo Representative.

Section 4.3 AHL Action. AHL will use commercially reasonable efforts in accordance with applicable Law (including the rules of the New York Stock Exchange) to cause the Facility Closing to occur.

ARTICLE V
APOLLO REPRESENTATIVE

Section 5.1 Authority. The Apollo Representative shall have the right to vote the Class A Shares beneficially owned by each Apollo Shareholder, including Class A Shares to which an Apollo Shareholder has been granted a valid proxy, at any meeting of AHL's shareholders and in any action by written consent of AHL's shareholders. All decisions, actions, consents and instructions of the Apollo Representative pursuant to this Agreement shall be final and binding upon all of the Apollo Shareholders, and no such Person shall have any right to object, dissent, protest or otherwise contest the same. The Apollo Shareholders shall be bound by all actions taken and documents executed by the Apollo Representative in connection with this Agreement.

ARTICLE VI
TERMINATION

Section 6.1 Term. The terms of this Agreement shall terminate, and be of no further force and effect, upon the first to occur of:

(a) the mutual consent of the Apollo Representative and AHL; and

(b) with respect to any Apollo Shareholder, the first time such Apollo Shareholder has Transferred all (but not less than all) of its Class A Shares.

Section 6.2 Survival. If this Agreement is terminated pursuant to Section 6.1, this Agreement shall become null and void and of no further force and effect, except for: (i) the provisions set forth in Section 3.3, this Section 6.2, Section 8.4, Section 8.5, Section 8.9 and Section 8.14 and (ii) the rights of the Apollo Shareholders with respect to the breach of any provision hereof by AHL, which shall, in each case of the preceding clauses (i) and (ii), survive the termination of this Agreement.

ARTICLE VII
REPRESENTATIONS AND WARRANTIES

Section 7.1 Representations and Warranties of the Apollo Shareholders. Each Apollo Shareholder represents and warrants to AHL as of the date hereof that (a) such Apollo Shareholder is duly authorized to execute, deliver and perform this Agreement; (b) this Agreement has been duly executed by such Apollo Shareholder and is a valid and binding agreement of such Apollo Shareholder, enforceable against such Apollo Shareholder in accordance with its terms; and (c) the execution, delivery and performance by such Apollo Shareholder of this Agreement does not violate or conflict with or result in a breach of or constitute (or with notice or lapse of time or both would constitute) a default under any agreement to which such Apollo Shareholder is a party or, if such Apollo Shareholder is an entity, the Governing Documents of such Apollo Shareholder.

Section 7.2 Representations and Warranties of AHL. AHL represents and warrants to each Apollo Shareholder that as of the date hereof (a) AHL is duly authorized to execute, deliver and perform this Agreement; (b) this Agreement has been duly authorized, executed and delivered by AHL and is a valid and binding agreement of AHL, enforceable against AHL in accordance with its terms; and (c) the execution, delivery and performance by AHL of this Agreement does not violate or conflict with or result in a breach by AHL of or constitute (or with notice or lapse of time or both would constitute) a default by AHL under the Governing Documents of AHL, any existing applicable Law, judgment, order, or decree of any Governmental Entity exercising any statutory or regulatory authority over any of the foregoing, domestic or foreign, having jurisdiction over AHL or any of its Subsidiaries or Controlled Affiliates or any of their respective properties or assets, or any agreement or instrument to which AHL or any of its Subsidiaries or Controlled Affiliates is a party or by which AHL or any of its Subsidiaries or Controlled Affiliates or any of its or their respective properties or assets may be bound.

ARTICLE VIII
MISCELLANEOUS

Section 8.1 Entire Agreement. This Agreement, the Transaction Agreement and the Liquidity Agreement, together with the other documents contemplated hereby and thereby, constitute the entire agreement among the parties hereto pertaining to the subject matter hereof and thereof and fully supersede any and all prior or contemporaneous agreements or understandings among the parties hereto pertaining to the subject matter hereof and thereof.

Section 8.2 Further Assurances. Each of the parties hereto does hereby covenant and agree on behalf of itself, its successors, and its permitted assigns, without further consideration, to prepare, execute, acknowledge, file, record, publish, and deliver such other instruments, documents and statements, and to take such other actions as may be required by Law or reasonably necessary to effectively carry out the intent and purposes of this Agreement.

Section 8.3 Notices. Any notice, consent, payment, demand, or communication required or permitted to be given by any provision of this Agreement shall be in writing and shall be (a) delivered personally to the Person or to an officer of the Person to whom the same is directed, (b) sent by overnight mail or registered or certified mail, return receipt requested, postage prepaid, or (c) sent by email, with electronic or written confirmation of receipt, in each case addressed as follows:

(i) If to AHL, to:

Athene Holding Ltd.
Chesney House
96 Pitts Bay Road
Pembroke HM 08
Bermuda
Attention: Natasha Scotland Courcy
E-mail: NCourcy@Athene.bm

with a copy (which shall not constitute notice) to:

Sidley Austin LLP
One South Dearborn Street
Chicago, IL 60603
Attention: Perry J. Shwachman
Samir A. Gandhi
Jeremy Watson
Email: pshwachman@sidley.com
sgandhi@sidley.com
jcwatson@sidley.com

Latham & Watkins LLP
885 Third Avenue
New York, NY 10022
Attention: A. Peter Harwich
Daniel E. Rees
Email: peter.harwich@lw.com
daniel.rees@lw.com

(ii) if to any Apollo Shareholder, to:

Apollo Global Management, Inc.
9 West 57th Street, 43rd Floor
New York, NY 10019

Attention: John J. Suydam
Email: jsuydam@apollo.com

with a copy (which shall not constitute notice) to:

Paul, Weiss, Rifkind, Wharton & Garrison LLP
1285 Avenue of the Americas
New York, NY 10019-6064
Attention: John M. Scott
Brian P. Finnegan
Ross A. Fieldston
Email: jscott@paulweiss.com
bfinnegan@paulweiss.com
rfieldston@paulweiss.com

Any such notice shall be deemed to be delivered, given and received for all purposes as of: (A) the date so delivered, if delivered personally, (B) upon receipt, if sent by facsimile or e-mail, or (C) on the date of receipt or refusal indicated on the return receipt, if sent by registered or certified mail, return receipt requested, postage and charges prepaid and properly addressed.

Section 8.4 Governing Law. ALL ISSUES AND QUESTIONS CONCERNING THE APPLICATION, CONSTRUCTION, VALIDITY, INTERPRETATION AND ENFORCEMENT OF THIS AGREEMENT AND THE EXHIBITS AND SCHEDULES TO THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF BERMUDA, WITHOUT GIVING EFFECT TO ANY CHOICE OF LAW OR CONFLICT OF LAW RULES OR PROVISIONS (WHETHER OF BERMUDA OR ANY OTHER JURISDICTION) THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY JURISDICTION OTHER THAN BERMUDA.

Section 8.5 Consent to Jurisdiction. With respect to any suit, action or proceeding ("Proceeding") arising out of or relating to this Agreement or any transaction contemplated hereby each of the parties hereto hereby irrevocably (a) submits to the exclusive jurisdiction of the Supreme Court of Bermuda (the "Selected Court") and waives any objection to venue being laid in the Selected Court whether based on the grounds of forum non conveniens or otherwise and hereby agrees not to commence any such Proceeding other than before the Selected Court; provided, however, that a party may commence any Proceeding in a court other than the Selected Court solely for the purpose of enforcing an order or judgment issued by the Selected Court; (b) consents to service of process in any Proceeding by the mailing of copies thereof by registered or certified mail, postage prepaid, or by recognized international express carrier or delivery service, to the applicable party hereto at its address set forth in Section 8.3; provided, however, that nothing herein shall affect the right of any party hereto to serve process in any other manner permitted by Law; and (c) TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW THAT CANNOT BE WAIVED, WAIVES, AND COVENANTS THAT IT WILL NOT ASSERT (WHETHER AS

PLAINTIFF, DEFENDANT OR OTHERWISE) ANY RIGHT TO TRIAL BY JURY IN ANY ACTION ARISING IN WHOLE OR IN PART UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY OF THE CONTEMPLATED TRANSACTIONS, WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AND AGREES THAT ANY OF THEM MAY FILE A COPY OF THIS PARAGRAPH WITH ANY COURT AS WRITTEN EVIDENCE OF THE KNOWING, VOLUNTARY AND BARGAINED-FOR AGREEMENT AMONG THE PARTIES IRREVOCABLY TO WAIVE ITS RIGHT TO TRIAL BY JURY IN ANY PROCEEDING WHATSOEVER AMONG THEM RELATING TO THIS AGREEMENT OR ANY OF THE CONTEMPLATED TRANSACTIONS WILL INSTEAD BE TRIED IN A COURT OF COMPETENT JURISDICTION BY A JUDGE SITTING WITHOUT A JURY.

Section 8.6 Equitable Remedies. The parties hereto agree that irreparable damage may occur in the event that any of the provisions of this Agreement were not performed in accordance with its specific terms or was otherwise breached. It is accordingly agreed that the parties hereto shall be entitled to seek an injunction or injunctions and other equitable remedies to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof, this being in addition to any other remedy to which they are entitled at Law or in equity. Any requirements for the securing or posting of any bond with respect to such remedy are hereby waived by each of the parties hereto. Each party hereto further agrees that, in the event of any action for an injunction or other equitable remedy in respect of such breach or enforcement of specific performance, it will not assert the defense that a remedy at Law would be adequate.

Section 8.7 Construction. This Agreement shall be construed as if all parties hereto prepared this Agreement.

Section 8.8 Counterparts. This Agreement may be executed in any number of counterparts, and each such counterpart shall for all purposes be deemed an original, and all such counterparts shall together constitute but one and the same agreement.

Section 8.9 Third Party Beneficiaries. Nothing in this Agreement, express or implied, is intended or shall be construed to give any Person other than the parties hereto (or their respective legal representatives, successors, heirs and distributees) any legal or equitable right, remedy or claim under or in respect of any agreement or provision contained herein, it being the intention of the parties hereto that this Agreement is for the sole and exclusive benefit of such parties (or such legal representatives, successors, heirs and distributees) and for the benefit of no other Person; provided, that the Related Parties of the parties hereto and the Related Parties of the Related Parties of the parties hereto shall be express third party beneficiaries of Section 8.14.

Section 8.10 Binding Effect. Except as otherwise provided herein, all the terms and provisions of this Agreement shall be binding upon, shall inure to the benefit of and shall be enforceable by the respective successors and permitted assigns of the parties hereto. No party may assign any of its rights hereunder to any Person; provided, that the Apollo

Shareholders may assign their rights hereunder to their respective Permitted Transferees. Each Permitted Transferee of any Apollo Shareholder shall be subject to all of the terms of this Agreement, and by taking and holding such shares such Person shall be entitled to receive the benefits of and be conclusively deemed to have agreed to be bound by and to comply with all of the terms and provisions of this Agreement. Notwithstanding the foregoing, no successor or assignee of AHL shall have any rights granted under this Agreement until such Person shall acknowledge its rights and obligations hereunder by a signed written statement of such Person's acceptance of such rights and obligations.

Section 8.11 Severability. In the event that any provision of this Agreement as applied to any party or to any circumstance, shall be adjudged by a court to be void, unenforceable or inoperative as a matter of Law, then the same shall in no way affect any other provision in this Agreement, the application of such provision in any other circumstance or with respect to any other party, or the validity or enforceability of the Agreement as a whole.

Section 8.12 Adjustments Upon Change of Capitalization. In the event of any change in the outstanding Class A Shares, by reason of dividends, distributions, splits, reverse splits, spin-offs, split-ups, recapitalizations, combinations, exchanges of shares and the like, the term "Class A Shares" shall refer to and include the securities received or resulting therefrom, but only to the extent such securities are received in exchange for or in respect of Class A Shares.

Section 8.13 Amendments; Waivers.

(a) No provision of this Agreement may be amended or waived unless such amendment or waiver is in writing and signed, in the case of an amendment, by the Apollo Representative and AHL, or in the case of a waiver, by either the Apollo Representative if such waiver is to be effective against the Apollo Shareholders, AHL, if such waiver is to be effective against AHL.

(b) No failure or delay by any party hereto in exercising any right, power or privilege hereunder shall operate as waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by Law.

Section 8.14 Non-Recourse. Notwithstanding anything that may be expressed or implied in this Agreement, by its acceptance of this Agreement, each party hereto covenants, acknowledges and agrees that no Person other than the parties hereto shall have any obligation hereunder and that (a) notwithstanding that any of the parties hereto may be a partnership or limited liability company, no recourse hereunder or under any documents or instruments delivered in connection herewith shall be had against any former, current or future, direct or indirect director, manager, officer, employee, agent, financing source or Affiliate of any of the parties hereto, any former, current or future, direct or indirect holder of any equity interests or securities of any of the parties hereto (whether such holder is a limited or general partner, manager, member, stockholder, securityholder or otherwise), any former, current or future assignee of any of the parties hereto, any former, current or future director, officer, employee, agent, financing source, general or limited partner, manager, management company, member, stockholder, securityholder, Affiliate, controlling Person or representative or assignee of any of the foregoing, or any former, current or future heir, executor, administrator, trustee, successor or assign of any of the foregoing other than the parties hereto or their respective successors or assignees under the this Agreement (any such Person or entity, other than the parties hereto or their respective successors or assignees under this Agreement, a "Related Party") or any Related Party of the Related Parties of the parties hereto whether by the enforcement of any judgment or assessment or by any legal or equitable Proceeding, or by virtue of any applicable Law; and (b) no personal liability whatsoever will attach to, be imposed on or otherwise incurred by any Related Party of any party hereto or any Related Party of such party's Related Parties under this Agreement or any documents or instruments delivered in connection herewith or for any claim based on, in respect of, or by reason of such obligations hereunder or by their creation.

[*Signature pages follow.*]

IN WITNESS WHEREOF, the parties hereto have caused this Shareholders Agreement to be duly executed and delivered, all as of the date first set forth above.

AHL

ATHENE HOLDING LTD.

By: /s/ Adam Laing
Name: Adam Laing
Title: SVP Finance

[*Signature Page to Shareholders Agreement*]

APOLLO SHAREHOLDERS

APH I HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings I, L.P., its sole member

By: Apollo Principal Holdings I GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH II HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings II, L.P., its sole member

By: Apollo Principal Holdings II GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

[*Signature Page to Shareholders Agreement*]

APH III HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings III, L.P., its sole member

By: Apollo Principal Holdings III GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH IV HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings IV, L.P., its sole member

By: Apollo Principal Holdings IV GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH V HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings V, L.P., its sole member

By: Apollo Principal Holdings V GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH VI HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings VI, L.P., its sole member

By: Apollo Principal Holdings VI GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH VII HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings VII, L.P., its sole member

By: Apollo Principal Holdings VII GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH VIII HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings VIII, L.P., its sole member

By: Apollo Principal Holdings VIII GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH IX HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings IX, L.P., its sole member

By: Apollo Principal Holdings IX GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH X HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings X, L.P., its sole member

By: Apollo Principal Holdings X GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH XII HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings XII, L.P., its sole member

By: Apollo Principal Holdings XII GP, LLC, its general partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

AMH HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: AMH Holdings (Cayman), L.P., its sole member

By: AMH Holdings GP, Ltd., its general partner

By: AGM Management Holdings GP, LLC, sole director

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

APH XI HOLDINGS - WEDNESDAY SUB (CAYMAN), LLC

By: Apollo Principal Holdings XI, LLC, its sole member

By: /s/ William B. Kuesel

Name: William Kuesel
Title: Manager

APOLLO PRINCIPAL HOLDINGS VIII, L.P.

By: Apollo Principal Holdings VIII GP, Ltd., its General Partner

By: /s/ John J. Suydam

Name: John J. Suydam
Title: Vice President and Secretary

Exhibit A

Apollo Related Holders

Each member of the AGM Executive Committee, each member of the AGM Management Committee, each Apollo Nominee and each employee of or consultant to AGM and the Controlled Affiliates of AGM.

Exhibit 10.2

EXECUTION VERSION

REGISTRATION RIGHTS AGREEMENT

dated as of February 28, 2020

between

ATHENE HOLDING LTD.

AND

APOLLO GLOBAL MANAGEMENT, INC.

TABLE OF CONTENTS **Page**

REGISTRATION RIGHTS AGREEMENT (the "Agreement"), dated as of February 28, 2020, among Apollo Global Management, Inc. ("Holder") and Athene Holding Ltd. (the "Company").

WHEREAS, pursuant to that certain Transaction Agreement, dated as of October 27, 2019, by and among the Company, the Holder and the Apollo Operating Group (the "Transaction Agreement"), the Company has agreed to issue or transfer, directly or indirectly, to the Apollo Operating Group (i) 27,959,184 Shares (as defined below) in exchange for 29,154,519 Operating Group Units (as defined in the Transaction Agreement) and (ii) 7,575,758 Shares in exchange for $350,000,000 (collectively, the "Share Transfers");

WHEREAS the Company has also granted to Holder the right to purchase additional Shares from the Company under certain circumstances; and

WHEREAS, in connection with, and effective upon, the date of completion of the Share Transfers (the "Closing Date"), the Company and Holder wish to set forth certain understandings between such parties.

NOW, **THEREFORE**, in consideration of the mutual covenants and undertakings contained herein and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

ARTICLE I
DEFINITIONS

Section 1.1 Definitions. As used in this Agreement, the following terms have the following meanings:

"Affiliate" of any Person means any other Person that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such first Person. As used in this definition, the term "control," including the correlative terms "controlling," "controlled by" and "under common control with," means the possession, directly or indirectly, of the power to direct or cause the direction of management or policies (whether through ownership of securities or any partnership or other ownership interest, by contract or otherwise) of a Person.

"Agreement" has the meaning set forth in the preamble to this Agreement.

"Apollo Operating Group" means any carry vehicles, management companies or other entities formed by Holder or its Affiliates to engage in the asset management business (including alternative asset management) and receiving management fees, incentive fees, fees paid by Portfolio Companies, carry or other remuneration which are directly owned by Holder or its Subsidiaries and AP Professional Holdings, L.P. and which are not Subsidiaries of another member of the Apollo Operating Group, excluding any Funds and any Portfolio Companies. As of the date hereof, the Apollo Operating Group consists of Apollo Principal Holdings I, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings II, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings III, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings IV, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings V, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VI, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VII, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VIII, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings IX, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings X, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings XI, LLC, an Anguilla limited liability company, Apollo Principal Holdings XII, L.P., a Cayman Islands exempted limited partnership and AMH Holdings (Cayman), L.P., a Cayman Islands exempted limited partnership.

"Beneficial Owner" means, a Person who directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise has or shares: (A) voting power, which includes the power to vote, or to direct the voting of, such security and/or (B) investment power, which includes the power to dispose, or to direct the disposition of, such security. The terms "Beneficially Own" and "Beneficial Ownership" have correlative meanings.

"Board" means the board of directors of the Company or any duly authorized committee thereof.

"Bye-laws" means the Bye-laws of the Company, as they may be amended, supplemented, restated or otherwise modified from time to time.

"Company" shall have the meaning set forth in the preamble to this Agreement.

"Demand" has the meaning set forth in Section 2.1(a).

"Demand Registration" has the meaning set forth in Section 2.1(a).

"Disclosure Package" means, with respect to any offering of securities, (i) the preliminary prospectus, (ii) each Free Writing Prospectus and (iii) all other information, in each case, that is deemed, under Rule 159 promulgated under the Securities Act, to have been conveyed to purchasers of securities at the time of sale of such securities (including a contract of sale).

"Exchange Act" means the Securities Exchange Act of 1934, as amended, supplemented or restated from time to time and any successor to such statute, and the rules and regulations promulgated thereunder.

"Form S-3" has the meaning set forth in Section 2.3.

"Free Writing Prospectus" has the meaning set forth in Section 2.6(a)(iii).

"Governmental Entity" means any Federal, state, county, city, local or foreign governmental, administrative or regulatory authority, commission, committee, agency or body (including any court, tribunal or arbitral body).

"Holder" has the meaning set forth in the preamble to this Agreement.

"Inspectors" has the meaning set forth in Section 2.6(a)(viii).

"Long-Form Registration" has the meaning set forth in Section 2.1(c).

"Losses" has the meaning set forth in Section 2.8(a).

"Marketed Underwritten Offering" has the meaning set forth in Section 2.1(e).

"Non-Marketed Underwritten Offering" has the meaning set forth in Section 2.1(f).

"Non-Underwritten Shelf Takedown" has the meaning set forth in Section 2.1(f).

"Other Demanding Sellers" has the meaning set forth in Section 2.2(b).

"Person" shall be construed broadly and includes any individual, corporation, firm, partnership, limited liability company, joint venture, estate, business, association, trust, Governmental Entity or other entity.

"Piggyback Notice" has the meaning set forth in Section 2.2(a).

"Piggyback Registration" has the meaning set forth in Section 2.2(a).

"Piggyback Seller" has the meaning set forth in Section 2.2(a).

"Proceeding" has the meaning set forth in Section 4.7.

"Records" has the meaning set forth in Section 2.6(a)(viii).

"Registrable Amount" means a number of Registrable Securities representing at least the lesser of (i) 1.0% of the total Shares then outstanding (taking into account for this purpose all vested and unvested Shares, if any) and (ii) $40 million (such value shall be determined based on the value of such Registrable Securities, in each case on the date immediately preceding the date upon which the Demand or Shelf Notice, as applicable, has been received by the Company).

"Registrable Securities" means any Shares currently owned or hereafter acquired by any Shareholder (whether acquired upon conversion, exchange or exercise of any securities, through open market purchases, or otherwise). As to any particular Registrable Securities, such securities shall cease to be Registrable Securities when (i) such securities have been sold or otherwise transferred by the holder thereof pursuant to an effective registration statement or (ii) such securities are sold in accordance with Rule 144 (or any successor provision) promulgated under the Securities Act, in each case to a person other than a Shareholder or an eligible assignee of a Shareholder under Section 4.9.

"Registration Expenses" has the meaning set forth in Section 2.7.

"Requesting Shareholder" means one or more Shareholders (and its affiliates) who collectively beneficially own, outstanding shares of Common Stock.

"SEC" means the United States Securities and Exchange Commission or any similar agency then having jurisdiction to enforce the Securities Act.

"Securities Act" means the Securities Act of 1933, as amended, supplemented or restated from time to time and any successor to such statute, and the rules and regulations promulgated thereunder.

"Selected Court" has the meaning set forth in Section 4.7.

"Selling Shareholder Expenses Cap" has the meaning set forth in Section 2.7.

"Selling Shareholders" means the Persons named as selling shareholders in any registration statement under Article II hereof and who is the Beneficial Owner of Registrable Securities being offered thereunder.

"Share Transfers" has the meaning set forth in the recitals to this Agreement.

"Shareholder" and "Shareholders" shall mean Holder together with its successors, permitted transferees and permitted assigns.

"Shares" means the shares of Common Stock of the Company, $0.001 par value per share, and any equity securities issued or issuable in exchange for or with respect to such shares of Common Stock (i) by way of a dividend, split or combination of shares or (ii) in connection with a reclassification, recapitalization, merger, consolidation or other reorganization.

"Shelf Notice" has the meaning set forth in Section 2.3.

"Shelf Registration Statement" has the meaning set forth in Section 2.3.

"Short-Form Registration" has the meaning set forth in Section 2.1(c).

"Suspension Period" has the meaning set forth in Section 2.3(d).

"Underwritten Offering" means a sale of securities of the Company to an underwriter or underwriters for reoffering to the public.

"Underwritten Offering Notice" has the meaning set forth in Section 2.1(f).

"Well-Known Seasoned Issuer" means a "well-known seasoned issuer" as defined in Rule 405 promulgated under the Securities Act and which (i) is a "well-known seasoned issuer" under paragraph (1)(i)(A) of such definition or (ii) is a "well-known seasoned issuer" under paragraph (1)(i)(B) of such definition and is also eligible to register a primary offering of its securities relying on General Instruction I.B.1 of Form S-3 or Form F-3 under the Securities Act.

Section 1.2 Interpretation. In this Agreement, unless the context otherwise requires:

(a) words importing the singular include the plural and vice versa;

(b) pronouns of either gender or neuter shall include, as appropriate, the other pronoun forms;

(c) a reference to a clause, party, annex, exhibit or schedule is a reference to a clause of, and a party, annex, exhibit and schedule to this Agreement, and a reference to this Agreement includes any annex, exhibit and schedule hereto;

(d) a reference to a statute, regulation, proclamation, ordinance or by-law includes all statues, regulations, proclamations, ordinances or by-laws amending, consolidating or replacing it, whether passed by the same or another Governmental Entity with legal power to do so, and a reference to a statute includes all regulations, proclamations, ordinances and by-laws issued under the statute;

(e) a reference to a document includes all amendments or supplements to, or replacements or novations of that document;

(f) a reference to a party to a document includes that party's successors, permitted transferees and permitted assigns;

(g) the use of the term "including" means "including, without limitation";

(h) the words "herein", "hereof", "hereunder" and other words of similar import refer to this Agreement as a whole, including the annexes, schedules and exhibits, as the same may from time to time be amended, modified, supplemented or restated, and not to any particular section, subsection, paragraph, subparagraph or clause contained in this Agreement;

(i) the title of and the section and paragraph headings used in this Agreement are for convenience of reference only and shall not govern or affect the interpretation of any of the terms or provisions in this Agreement;

(j) where specific language is used to clarify by example a general statement contained herein, such specific language shall not be deemed to modify, limit or restrict in any manner the construction of the general statement to which it relates;

(k) the language used in this Agreement has been chosen by the parties to express their mutual intent, and no rule of strict construction shall be applied against any party; and

(l) unless expressly provided otherwise, the measure of a period of one (1) month or year for purposes of this Agreement shall be that date of the following month or year corresponding to the starting date, provided that if no corresponding date exists, the measure shall be that date of the following month or year corresponding to the next day following the starting date (for example, one (1) month following February 18 is March 18, and one (1) month following March 31 is May 1 (or in the case of January 29, 30 or 31, the following month shall be March 1)).

ARTICLE II
REGISTRATION RIGHTS

Section 2.1 Demand Registration.

(a) One or more Requesting Shareholders shall be entitled to make a written request of the Company (a "Demand") for registration under the Securities Act of an amount of Registrable Securities that, in the aggregate taking into account all of the Requesting Shareholders, equals or is greater than the Registrable Amount (a "Demand Registration") and thereupon the Company will, subject to the terms of this Agreement, use its commercially reasonable efforts to effect the registration as promptly as practicable under the Securities Act of:

(i) the offer and sale of the Registrable Securities which the Company has been so requested to register by the Requesting Shareholders for disposition in accordance with the intended method of disposition stated in such Demand;

(ii) all other Registrable Securities which the Company has been requested to register pursuant to Section 2.1(b); and

(iii) all equity securities of the Company which the Company may elect to register in connection with any offering of Registrable Securities pursuant to this Section 2.1;

all to the extent necessary to permit the disposition (in accordance with the intended methods thereof) of the Registrable Securities and the additional Shares, if any, to be so registered.

(b) Each Demand shall specify: (i) the aggregate number of Registrable Securities requested to be registered in such Demand Registration, (ii) the intended method of disposition in connection with such Demand Registration, if then known and (iii) the identity of the Requesting Shareholder (or Requesting Shareholders). Within five (5) business days after receipt of a Demand, the Company shall give written notice of such Demand to all other Shareholders, if any. Subject to Section 2.1(h), the Company shall include in the Demand Registration covered by such Demand all Registrable Securities with respect to which the Company has received a written request for inclusion therein within ten (10) days after the Company's notice required by this paragraph has been mailed. Such written request shall comply with the requirements of a Demand as set forth in this Section 2.1(b).

(c) Demand Registrations shall be on (i) if option (ii) and (iii) below are not available, Form S-1 or any similar long-form registration ("Long-Form Registration"), (ii) if option (iii) below is not available, Form S-3 or any similar short form registration, if such short form registration is then available to the Company, or (iii) Form S-3ASR if the Company is, at the time a Demand is made, a Well-Known Seasoned Issuer (a Demand Registration under each of clauses (ii) and (iii), a "Short-Form Registration"), in each case, in compliance with the Securities Act and in the form of registration statements that the Company has customarily prepared and filed with the SEC for issuances of its Shares. The Company shall not be required to effect more than two Long-Form Registrations per fiscal year.

(d) Effective Demand Registration. A Demand Registration shall not be deemed to have been effected:

(i) unless a registration statement with respect thereto has been declared effective by the SEC and remains effective in compliance with the provisions of the Securities Act and the laws of any U.S. state or other jurisdiction applicable to the disposition of Registrable Securities covered by such registration statement until such time as all of such Registrable Securities shall have been disposed of in accordance with such registration statement or there shall cease to be any Registrable Securities;

(ii) if, after it has become effective, such registration is interfered with by any stop order, injunction or other order or requirement of the SEC or other Governmental Entities or court for any reason other than a violation of applicable law solely by any Selling Shareholder and has not thereafter become effective;

(iii) if, in the case of an Underwritten Offering, the conditions to closing specified in an underwriting agreement applicable to the Company are not satisfied or waived other than by reason of any breach or failure by any Selling Shareholder; or

(iv) if the Company effects a postponement, declares a Suspension Period or similarly delays the exercise of rights under this Agreement pursuant to the terms in the paragraph below or the terms of this Agreement generally.

Notwithstanding the foregoing, the Company shall not be obligated to (i) maintain the effectiveness of a Long-Form Registration, filed pursuant to a Demand Registration, for a period longer than 75 days or (ii) effect any Demand Registration (A) within six (6) months of the effective date of a registration statement with respect to a "firm commitment" Underwritten Offering in which all Piggyback Sellers were given "piggyback" rights pursuant to Section 2.2 (and at least 50% of the number of Registrable Securities requested by such Piggyback Sellers to be included in such Demand Registration were included), (B) within three (3) months of the effective date of a registration statement with respect to any other Demand Registration, (C) within 90 days from the date on which a Marketed Underwritten Offering was priced or (D) if, in the reasonable judgment of the Board, it is not feasible for the Company to proceed with the Demand Registration because of the unavailability of audited or other required financial statements or financial information, provided that the Company shall use commercially reasonable efforts to obtain such financial statements or financial information as promptly as practicable. In addition, the Company shall be entitled to postpone (upon written notice to all Shareholders) the filing or the effectiveness of a registration statement for any Demand Registration (but no more than twice in any period of twelve (12) consecutive months and in no event for more than an aggregate of one-hundred twenty (120) days in any three-hundred sixty-five (365) consecutive day period) if the Board determines in its reasonable judgment that the filing or effectiveness of the registration statement relating to such Demand Registration would cause the disclosure of material, non-public information that the Company has a *bona fide* business purpose for preserving as confidential, provided, however, that such postponement shall terminate at such time that such information is no longer material, non-public information or the

Company no longer has a bona fide business purpose for preserving such information as confidential.

(e) Offering Requests.

(i) Requests for Marketed Underwritten Offerings. A Requesting Shareholder may from time to time request to sell Registrable Securities in an underwritten offering that is registered pursuant to the Shelf Registration Statement or under a Demand Registration that includes roadshow presentations or investor calls by management of the Company or other marketing efforts by the Company (a "Marketed Underwritten Offering"); provided that in the case of each such Marketed Underwritten Offering the Registrable Securities proposed to be sold shall have an expected aggregate offering price of at least $40 million; and provided, further, that the Company shall not be required to effect (A) a Marketed Underwritten Offering if another Marketed Underwritten Offering has been effected and priced within 90 days or (B) more than four Marketed Underwritten Offerings within any 12-month period. Notwithstanding anything contrary in this Section 2.1, unless otherwise agreed to by the Requesting Shareholders, no other Shareholder shall have the right to participate in a Marketed Underwritten Offering.

(ii) Requests for Non-Marketed Underwritten Offerings. Requesting Shareholders may from time to time request to sell Registrable Securities in an underwritten offering that is registered under the Shelf Registration Statement or under a Demand Registration that does not include any marketing efforts by the Company or its management, including a "block trade" (a "Non-Marketed Underwritten Offering"); provided that in the case of each such Non-Marketed Underwritten Offering the Registrable Securities proposed to be sold shall have an aggregate offering price of at least $5 million. Notwithstanding anything contrary in this Section 2.1, unless otherwise agreed to by the Requesting Shareholders, no other Shareholder shall have the right to participate in a Non-Marketed Underwritten Offering.

(iii) Requests for Non-Underwritten Offerings. At any time that a Shelf Registration Statement or any shelf registration statement filed in connection with a Demand Registration shall be effective with respect to Registrable Securities of a Requesting Shareholder and such Requesting Shareholder desires to initiate an offering or sale of all or part of such Requesting Shareholder's Registrable Securities that does not constitute an Underwritten Offering (a "Non-Underwritten Shelf Takedown"), such Requesting Shareholder shall so indicate in a written request delivered to the Company no later than three Business Days prior to the expected date of such Non-Underwritten Shelf Takedown, which request shall include (i) the type and total number of Registrable Securities expected to be offered and sold in such Non-Underwritten Shelf Takedown and (ii) the expected plan of distribution of such Non-Underwritten Shelf Takedown. Notwithstanding anything contrary in this Section 2.1, unless otherwise agreed to by the Requesting Shareholder, no other Shareholder shall have the right to participate in a Non-Underwritten Shelf Takedown.

(iv) Underwritten Offering Notices. All requests for Underwritten Offerings shall be made by giving written notice to the Company (an

"Underwritten Offering Notice"). Each Underwritten Offering Notice shall specify (i) the approximate number of Registrable Securities to be sold in the Underwritten Offering, (ii) whether such offering will be a Marketed Underwritten Offering or a Non-Marketed Underwritten Offering, and (iii) the intended marketing efforts, if any. Within five Business Days after receipt of any Offering Notice, if agreed to by the Requesting Shareholders in accordance with the provisions set forth above, the Company shall (A) send written notice of such requested Offering to all other Shareholders, if any, and shall include in such Offering all Registrable Securities with respect to which the Company has received written requests for inclusion therein within ten (10) days after mailing such notice or (B) follow such other procedure agreed to by the Requesting Shareholders with respect to allowing other Shareholders to participate in the Underwritten Offering.

(f) Any time that a Demand Registration involves an Underwritten Offering, (i) the Shareholders holding a majority of the Registrable Securities requested to be included in the Demand Registration shall select the investment banker or investment bankers and managers that will serve as lead and co-managing underwriters with respect to the offering of such Registrable Securities, subject to the consent of the Company, such consent not to be unreasonably withheld, and (ii) the Company and the Selling Shareholders shall enter into an underwriting agreement that is reasonably acceptable to the Shareholders holding a majority of the Registrable Securities requested to be included in the Demand Registration with respect to the provisions affecting such Shareholders and which agreement shall contain representations, warranties, indemnities and agreements of the Company customarily included (but not inconsistent with the covenants and agreements of the Company contained herein) by an issuer of common stock in underwriting agreements with respect to offerings of common stock for the account of, or on behalf of, such issuers.

(g) The Company shall not include any securities other than Registrable Securities in a Demand Registration, except with the written consent of the Requesting Shareholders participating in such Demand Registration holding a majority of the Registrable Securities included in such Demand Registration. If, in connection with a Demand Registration, the lead bookrunning underwriters (or, if such Demand Registration is not an Underwritten Offering, a nationally recognized independent investment bank selected by the Company and reasonably acceptable to Shareholders holding a majority of the Registrable Securities included in such Demand Registration, and whose fees and expenses (other than any underwriting discounts relating to such Registrable Securities sold in such Demand Registration) shall be borne solely by the Company) advise the Company, in writing, that, in their reasonable opinion, the inclusion of all of the securities, including securities of the Company that are not Registrable Securities, sought to be registered in connection with such Demand Registration would adversely affect the marketability of the Registrable Securities sought to be sold pursuant thereto, then the Company shall include in such registration statement only such securities as the Company is reasonably advised by such underwriters or investment bank can be sold without such adverse effect as follows and in the following order of priority: (i) first, up to the number of Shares requested to be included in such Demand Registration by any Shareholders, which, in the opinion of the underwriter or investment bank can be sold without adversely affecting the marketability of the offering, pro rata among such Shareholders based upon the number of Shares deemed to be owned by such Persons; (ii) second, securities the Company proposes to sell for its own account; and (iii) third, all other equity securities of the Company duly requested to be included in such registration statement by any other shareholders holding *pari passu* registration rights, pro rata on the basis of the amount of such other securities requested to be included or such other method determined by the Company.

Section 2.2 Piggyback Registration.

(a) Subject to the terms and conditions hereof, whenever the Company proposes to register the offer and sale of any of its equity securities under the Securities Act (other than a registration by the Company on a registration statement on Form S-4 or a registration statement on Form S-8 or any successor forms thereto) (a "Piggyback Registration"), whether for its own account or for the account of others, the Company shall give each Shareholder prompt written notice thereof (but not less than ten (10) business days prior to the public filing by the Company with the SEC of any registration statement with respect thereto, provided that the Company shall not be required to deliver such notice prior to the a confidential submission or non-public filing of any registration statement with the SEC). Such notice (a "Piggyback Notice") shall specify, at a minimum, the number of equity securities proposed to be registered, the proposed date of filing of such registration statement with the SEC, the proposed means of distribution, the proposed managing underwriter or underwriters (if any and if known) and a reasonable estimate by the Company of the proposed minimum offering price of such equity securities. Upon the written request of any Person that on the date of the Piggyback Notice is a Shareholder (a "Piggyback Seller") (which written request shall specify the number of Registrable Securities then presently intended to be disposed of by such Piggyback Seller, and may condition the sale of such Registrable Securities on a price range) given within ten (10) days after such Piggyback Notice is received by such Piggyback Seller, the Company, subject to the terms and conditions of this Agreement, shall use its commercially reasonable efforts to cause all such Registrable Securities held by Piggyback Sellers with respect to which the Company has received such written requests for inclusion to be included in such Piggyback Registration on the same terms and conditions as the Company's equity securities being sold in such Piggyback Registration (whether for the account of the Company or for the account of others).

(b) If, in connection with a Piggyback Registration, any managing underwriter (or, if such Piggyback Registration is not an Underwritten Offering, a nationally recognized independent investment bank selected by the Company and reasonably acceptable to the Shareholders holding a majority of the Registrable Securities included in such Piggyback Registration, and whose fees and expenses shall be borne solely by the Company) advises the Company in writing that, in its opinion, the inclusion of all the equity securities sought to be included in such Piggyback Registration by (i) the Company, (ii) others who acquire Shares after the date hereof and whom the Company gives registration rights and have sought to have all or part of such Shares registered in such Piggyback Registration pursuant to such registration rights, (iii) others with the written consent of Shareholders participating in such Demand Registration holding a majority of the Registrable Securities included in such Demand Registration (such Persons referenced in clauses (ii) and (iii) of this Section 2.2(b) being "Other Demanding Sellers"), and (iv) the Piggyback Sellers, as the case may be, would adversely affect the marketability of the equity securities sought to be sold pursuant thereto, then the Company shall include in the registration statement applicable to such Piggyback Registration only such equity securities as the Company is so advised by such underwriter can be sold without such an effect, as follows and in the following order of priority:

(i) if the Piggyback Registration relates to an offering for the Company's own account, then (A) first, such number of equity securities to be sold by the Company for its own account, and (B) second, Shares requested to be included in such Piggyback Registration by any Other Demanding Sellers and any Piggyback Sellers, pro rata among such Other Demanding Sellers and Piggyback Sellers based upon the number of Shares deemed to be beneficially owned by such Persons; or

(ii) if the Piggyback Registration relates to an offering other than for the Company's own account, then (A) first, Shares requested to be included in such Piggyback Registration by any Other Demanding Sellers and any Piggyback Sellers, pro rata among such Other Demanding Sellers and Piggyback Sellers based upon the number of Shares deemed to be owned by such Persons, and (B) second, the other equity securities of the Company proposed to be sold by the Company as determined by the Company.

(c) In connection with any Underwritten Offering under this Section 2.2, the Company shall not be required to include the Registrable Securities of a Shareholder in the Underwritten Offering unless such Shareholder accepts the terms of the underwriting as agreed upon between the Company and the underwriters, or, if applicable, the underwriters selected by the Shareholders holding a majority of the Registrable Securities requested to be included in the Demand Registration in accordance with the terms of hereof.

(d) If, at any time after giving written notice of its intention to register the offer and sale of any of its equity securities as set forth in this Section 2.2 and prior to the time the registration statement filed in connection with such Piggyback Registration is declared effective, the Company shall determine, at its election, for any reason not to register the offer and sale of such equity securities, the Company shall give written notice of such determination to each Shareholder within five (5) days thereof and thereupon shall be relieved of its obligation to register the offer and sale of any Registrable Securities in connection with such particular withdrawn or abandoned Piggyback Registration (but not from its obligation to pay the Registration Expenses in connection therewith as provided herein); provided, that Shareholders may continue the registration as a Demand Registration pursuant to the terms of Section 2.1.

Section 2.3 Shelf Registration.

(a) Subject to Section 2.3(d), and further subject to the availability of a registration statement on Form S-3 or on any other form which permits incorporation of information by reference to other documents filed by the issuer with the SEC ("Form S-3") to the Company, any of the Shareholders may by written notice delivered to the Company (the "Shelf Notice") require the Company to file as soon as practicable (but no later than sixty (60) days after the date the Shelf Notice is delivered), and to use commercially reasonable efforts to cause to be declared effective by the SEC as promptly as practicable and within ninety (90) days after such filing date, a Form S-3 providing for an offering to be made on a continuous basis pursuant to Rule 415 under the Securities Act relating to the offer and sale, from time to time, of a number of Registrable Securities that is equal to or greater than the Registrable Amount (based on the number of Registrable Securities outstanding on the date such notice is delivered) owned by such Shareholders and any other Shareholders who elect to participate therein as provided in Section 2.3(b) in accordance with the plan and method of distribution set forth in the prospectus included in such Form S-3 (the "Shelf Registration Statement").

(b) Within five (5) business days after receipt of a Shelf Notice pursuant to Section 2.3, the Company will deliver written notice thereof to each Shareholder. Each Piggyback Seller may elect to participate in the Shelf Registration Statement by delivering to the Company a written request to so participate within ten (10) days after the Shelf Notice is received by any such Piggyback Seller.

(c) Subject to Section 2.3(d), the Company will use commercially reasonable efforts to keep the Shelf Registration Statement continuously effective (including through updates, amendments, replacements or otherwise) until the date on which all Registrable Securities covered by the Shelf Registration Statement have been sold thereunder in accordance with the plan and method of distribution disclosed in the prospectus included in the Shelf Registration Statement, or otherwise. If the Company becomes ineligible to use Form S-3 for secondary sales, the Company shall use commercially reasonable efforts to file a Form S-1 shelf as promptly as practicable to replace the Shelf Registration Statement that is a Form S-3 shelf (but in no event more than 20 Business Days after the date of such ineligibility) and have the Form S-1 shelf declared effective as promptly as practicable (but in no event more than 90 days after the date of such filing) (at which time the Shelf Registration Statement shall refer to such Form S-1, and, in the event the Company again becomes eligible to use Form S-3 for secondary sales, the Company shall use commercially reasonable efforts to convert the Form S-1 shelf into a Form S-3 shelf).

(d) Notwithstanding anything to the contrary contained in this Agreement, the Company shall be entitled to suspend the use of the prospectus included in the Shelf Registration Statement, filed in accordance with Section 2.3, for a reasonable period of time not to exceed ninety (90) days in succession or one-hundred eighty (180) days in the aggregate in any twelve (12) month period (a "Suspension Period", provided, however, that any Suspension Period shall terminate at such time as the conditions which gave rise to the Suspension Period have ceased) if the Board shall determine in its reasonable judgment that (A) it is not feasible for the Shareholder to use the prospectus for the sale of Registrable Securities because of the unavailability of audited or other required financial statements or financial information, provided that the Company shall use its reasonable efforts to obtain such financial statements as promptly as practicable, or (B) the filing or effectiveness of the prospectus relating to the Shelf Registration Statement would cause the disclosure of material, non-public information that the Company has a bona fide business purpose for preserving as confidential. After the expiration of any Suspension Period and without any further request from a Shareholder, the Company shall as promptly as reasonably practicable prepare a post-effective amendment or supplement to the Shelf Registration Statement or the prospectus, or any document incorporated therein by reference, or file any other required document so that, as thereafter delivered to purchasers of the Registrable Securities included therein, the prospectus will not include an untrue statement of a material fact or omit to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(e) The Shareholders shall be entitled to demand such number of shelf registrations as shall be necessary to sell all of its Registrable Securities pursuant to this Section 2.3.

Section 2.4 Withdrawal Rights.

Any Shareholder having notified or directed the Company to include any or all of its Registrable Securities in a registration statement under the Securities Act shall have the right to withdraw any such notice or direction with respect to any or all of the Registrable Securities designated by it for registration by giving written notice to such effect to the Company prior to the effective date of such registration statement. In the event of any such withdrawal, the Company shall not include such Registrable Securities in the applicable registration and such Registrable Securities shall continue to be Registrable Securities for all purposes of this Agreement. No such withdrawal shall affect the obligations of the Company with respect to the Registrable Securities not so withdrawn; provided, however, that in the case of a Demand Registration, if such withdrawal shall reduce the number of Registrable Securities sought to be included in such registration below the Registrable Amount, then the Company shall as promptly as practicable give each Shareholder seeking to register Registrable Securities notice to such effect and, within ten (10) days following the mailing of such notice, such Shareholders still seeking registration shall, by written notice to the Company, elect to register additional Registrable Securities to satisfy the Registrable Amount or elect that such registration statement not be filed or, if theretofore filed, be withdrawn. During such 10-day period, the Company shall not file such registration statement if not theretofore filed or, if such registration statement has been theretofore filed, the Company shall not seek, and shall use commercially reasonable efforts to prevent, the effectiveness thereof. If a Shareholder more than once in any year withdraws its notification or direction to the Company to include Registrable Securities in a registration statement in accordance with this Section 2.4 with respect to a sufficient number of shares so as to reduce the number of Registrable Securities requested to be included in such registration statement below the Registrable Amount (and Shareholders do not elect to register additional Registrable Securities to satisfy the Registrable Amount), such Shareholder shall be required to promptly reimburse the Company for all expenses incurred by the Company in connection with preparing for the registration of such Registrable Securities.

Section 2.5 Holdback Agreements.

(a) In the case of any Underwritten Offering in connection with a Demand or Shelf Registration pursuant to this Agreement, each Requesting Shareholder, and in the case of any Piggyback Registration pursuant to this Agreement, each participating Shareholder, agrees not to effect any public sale or distribution (including sales pursuant to Rule 144) of equity securities of the Company, or any securities convertible into or exchangeable or exercisable for such equity securities, during any time period reasonably requested by the managing underwriter(s) of such Underwritten Offering (which shall not exceed seventy-five (75) days) with respect to any Demand, Shelf or Piggyback Registration (in each case, except as part of such registration subject to customary exceptions to be agreed). Each Shareholder subject to the restrictions of the first sentence of Section 2.5 shall receive the benefit of any shorter "lock-up" period or permitted exceptions agreed to by the managing underwriter(s) for any Underwritten Offering pursuant to this Agreement irrespective of whether such Shareholder participated in the Underwritten Offering and the terms of such lock-up agreements shall govern such Shareholders in lieu of the first sentence of Section 2.5.

(b) In the case of any Underwritten Offering pursuant to this Agreement, the Company shall use commercially reasonable efforts to cause other Shareholders (other than the Shareholders) and its directors and officers to execute any lock-up agreements in form and substance as agreed by the Shareholders and as reasonably requested by the managing underwriters; provided, that the Holder agrees to cause the directors of the Company then employed by the Holder to execute any such lock-up agreements.

(c) In the case of any Underwritten Offering, the Company agrees not to effect any Public Offering or distribution of any equity securities of the Company, or securities convertible into or exchangeable or exercisable for equity securities of the Company for a period (a) commencing upon the earlier of (x) the commencement of the roadshow in respect of such offering and(y) seven days prior to the pricing of such offering and (b) ending 90 days after the pricing of such offering, except, in each case, as part of such Underwritten Offering.

Section 2.6 Registration Procedures.

(a) If and whenever the Company is required to use commercially reasonable efforts to effect the registration of any Registrable Securities under the Securities Act as provided in Section 2.1, Section 2.2, and Section 2.3 the Company shall as expeditiously as reasonably possible:

(i) prepare and file with the SEC (subject to the provisions of Section 2.3 with respect to Shelf Registrations, promptly and, in any event on or before the date that is (i) 90 days, in the case of any Long-Form Registration, after the receipt by the Company a Demand from a Requesting Shareholder or (ii) 45 days, in the case of any Short-Form Registration, after the receipt by the Company of a Demand from a Requesting Shareholder) the requisite registration statement to effect any such registration and thereafter use its commercially reasonable efforts to cause such registration statement to be declared effective by the SEC and remain effective pursuant to the terms of this Agreement and cause such registration statement to contain a "Plan of Distribution" that permits the distribution of securities pursuant to all legal means; provided, however, that the Company may discontinue any registration of its securities which are not Registrable Securities at any time prior to the effective date of the registration statement relating thereto; provided, further that before filing such registration statement, prospectus or any amendments thereto, the Company will furnish to the counsel selected by the Shareholders which are including Registrable Securities in such registration copies of all such documents proposed to be filed, which documents will be subject to the review of such counsel, and such review to be conducted with reasonable promptness;

(ii) prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement until the earlier of such time as all of such securities have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof set forth in such registration statement or (i) in the case of a Demand Registration pursuant to Section 2.1, the expiration of ninety (90) days after such registration statement becomes effective or (ii) in the case of a Piggyback Registration pursuant to Section 2.2, the expiration of ninety (90) days after such registration statement becomes effective;

(iii) furnish to each Selling Shareholder and each underwriter, if any, of the securities being sold by such Selling Shareholder such number of conformed copies of such registration statement and of each amendment and supplement thereto (in each case including all exhibits), such number of copies of the prospectus contained in such registration statement (including each preliminary prospectus and any summary prospectus) and each free writing prospectus (as defined in Rule 405 of the Securities Act) (a "Free Writing Prospectus") utilized in connection therewith and any other prospectus filed under Rule 424 under the Securities Act, in conformity with the requirements of the Securities Act, and such other documents as such Selling Shareholder and underwriter, if any, may reasonably request in order to facilitate the public sale or other disposition of the Registrable Securities owned by such Selling Shareholder;

(iv) use commercially reasonable efforts to register or qualify such Registrable Securities covered by such registration statement under such other securities laws or blue sky laws of such jurisdictions as any Selling Shareholder and any underwriter of the securities being sold by such Selling Shareholder shall reasonably request, and take any other action which may be reasonably necessary or advisable to enable such Selling Shareholder and underwriter to consummate the disposition in such jurisdictions of the Registrable Securities owned by such Selling Shareholder, except that the Company shall not for any such purpose be required to (A) qualify generally to do business as a foreign corporation in any jurisdiction wherein it would not but for the requirements of this clause (iv) be obligated to be so qualified, (B) subject itself to taxation in any such jurisdiction or (C) file a general consent to service of process in any such jurisdiction;

(v) use commercially reasonable efforts to cause such Registrable Securities to be listed on each securities exchange on which similar securities issued by the Company are then listed and, if no such securities are so listed, use commercially reasonable efforts to cause such Registrable Securities to be listed on the New York Stock Exchange or the NASDAQ Stock Market;

(vi) use commercially reasonable efforts to cause such Registrable Securities covered by such registration statement to be registered with or approved by such other Governmental Entities as may be necessary to enable each Selling Shareholder thereof to consummate the disposition of such Registrable Securities;

(vii) in connection with an Underwritten Offering, obtain for each Selling Shareholder and underwriter:

(A) an opinion of counsel for the Company, covering the matters customarily covered in opinions requested in underwritten offerings and such other matters as may be reasonably requested by such Selling Shareholder and underwriters, and

(B) a "comfort" letter (or, in the case of any such Person which does not satisfy the conditions for receipt of a "comfort" letter specified in Statement on Auditing Standards No. 72, an "agreed upon procedures" letter) signed by the independent public accountants who have certified the Company's financial statements included in such registration statement;

(viii) promptly make available for inspection by a representative of the Selling Shareholders, any underwriter participating in any disposition pursuant to any registration statement, and any attorney, accountant or other agent or representative retained by the Selling Shareholders (collectively and not individually) or underwriter (collectively, the "Inspectors"), all financial and other records, pertinent corporate documents and properties of the Company (collectively, the "Records"), as shall be reasonably necessary to enable them to exercise their due diligence responsibility in connection with such registration statement, and cause the Company's officers, directors and employees to supply all information requested by any such Inspector in connection with such registration statement; provided, however, that, unless the disclosure of such Records is necessary to avoid or correct a misstatement or omission in the registration statement or the release of such Records is ordered pursuant to a subpoena or other order from a court of competent jurisdiction, the Company shall not be required to provide any information under this subparagraph (viii) if (i) the Company believes, after consultation with counsel for the Company, that to do so would cause the Company to forfeit an attorney-client privilege that was applicable to such information or (ii) if either (A) the Company has requested and been granted from the SEC confidential treatment of such information contained in any filing with the SEC or documents provided supplementally or otherwise or (B) the Company reasonably determines that such Records are confidential and so notifies the Inspectors in writing unless prior to furnishing any such information with respect to (i) or (ii) such Selling Shareholder requesting such information agrees, and causes each of its Inspectors, to enter into a confidentiality agreement on terms reasonably acceptable to the Company; and provided, further, that each Selling Shareholder agrees that it will, upon learning that disclosure of such Records is sought in a court of competent jurisdiction, give notice to the Company and allow the Company, at its expense, to undertake appropriate action and to prevent disclosure of the Records deemed confidential;

(ix) promptly notify in writing each Selling Shareholder and the underwriters, if any, of the following events:

(A) the filing (or confidential submission, as applicable) of the registration statement, the prospectus or any prospectus supplement related thereto or post-effective amendment to the registration statement or any Free Writing Prospectus utilized in connection therewith, and, with respect to the registration statement or any post-effective amendment thereto, when the same has become effective;

(B) any request by the SEC or any other Governmental Entity for amendments or supplements to the registration statement or the prospectus or for additional information;

(C) the issuance by the SEC or any other Governmental Entity of any stop order suspending the effectiveness of the registration statement or the initiation of any proceedings by any Person for that purpose; and

(D) the receipt by the Company of any notification with respect to the suspension of the qualification of any Registrable Securities for sale under the securities or blue sky laws of any jurisdiction or the initiation or threat of any proceeding for such purpose;

(x) notify each Selling Shareholder, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, upon discovery that, or upon the happening of any event as a result of which, the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein not misleading, and promptly prepare and furnish to such Selling Shareholder a reasonable number of copies of a supplement to or an amendment of such prospectus as may be necessary so that, as thereafter delivered to the purchasers of such Registrable Securities, such prospectus shall not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading;

(xi) use commercially reasonable efforts to prevent the issuance of and, if issued, obtain the withdrawal of any order suspending the effectiveness of such registration statement or any suspension of the qualification of any Registrable Securities for sale under the securities or blue sky laws of any jurisdiction;

(xii) otherwise use commercially reasonable efforts to comply with all applicable rules and regulations of the SEC, and make available to each Selling Shareholder, as soon as reasonably practicable, an earning statement of the Company covering the period of at least twelve (12) months, but not more than eighteen (18) months, beginning with the first day of the Company's first full quarter after the effective date of such registration statement, which earning statement shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 thereunder;

(xiii) cooperate with the Selling Shareholders and the managing underwriter to facilitate the timely preparation and delivery of certificates (which shall not bear any restrictive legends unless required under applicable law) representing securities sold under any registration statement, and enable such securities to be in such denominations and registered in such names as the managing underwriter or such Selling Shareholders may request and keep available and make available to the Company's transfer agent prior to the effectiveness of such registration statement a supply of such certificates, or, if requested by a Selling Shareholder or an underwriter, to facilitate the delivery of such securities in book-entry form;

(xiv) have appropriate officers of the Company prepare and make presentations at any “road shows” and before analysts and rating agencies, as the case may be, and other information meetings organized by the underwriters, take other actions to obtain ratings for any Registrable Securities (if they are eligible to be rated) and otherwise use its commercially reasonable efforts to cooperate as reasonably requested by the Selling Shareholders and the underwriters in the offering, marketing or selling of the Registrable Securities;

(xv) with respect to each Free Writing Prospectus or other materials to be included in the Disclosure Package, ensure that no Registrable Securities be sold “by means of” (as defined in Rule 159A(b) promulgated under the Securities Act) such Free Writing Prospectus or other materials without the prior written consent of the Shareholders holding the Registrable Securities covered by such registration statement, which Free Writing Prospectuses or other materials shall be subject to the prior reasonable review of the Selling Shareholders and their counsel;

(xvi) (A) as expeditiously as possible and within the deadlines specified by the Securities Act, make all required filings of all prospectuses and Free Writing Prospectuses with the SEC and (B) within the deadlines specified by the Exchange Act, make all filings of periodic and current reports and other materials required by the Exchange Act;

(xvii) as expeditiously as possible and within the deadlines specified by the Securities Act, make all required filing fee payments in respect of any registration statement or prospectus used under this Agreement (and any offering covered thereby);

(xviii) as expeditiously as practicable, keep the Selling Shareholders and their counsel advised as to the initiation and progress of any registration hereunder;

(xix) cooperate with each Selling Shareholder and each underwriter participating in the disposition of such Registrable Securities and their respective counsel in connection with any filings required to be made with the FINRA;

(xx) furnish the Selling Shareholders, their counsel and the underwriters, as expeditiously as possible, copies of all correspondence with or from the SEC, the FINRA, any stock exchange or other self-regulatory organization relating to the registration statement or the transactions contemplated thereby and, a reasonable time prior to furnishing or filing any such correspondence to the SEC, the FINRA, stock exchange or self-regulatory organization, furnish drafts of such correspondence to the Selling Shareholders, their counsel, and the underwriters for review and comment, such review and comment to be conducted with reasonable promptness; and

(xxi) to take all other reasonable steps necessary to effect the registration and disposition of the Registrable Securities contemplated hereby.

(b) The Company may require each Selling Shareholder and each underwriter, if any, to furnish the Company in writing such information regarding each Selling Shareholder or underwriter and the distribution of such Registrable Securities as the Company may from time to time reasonably request to complete or amend the information required by such registration statement.

(c) Without limiting the terms of Section 2.1(a), in the event that the offering of Registrable Securities is to be made by or through an underwriter, the Company, if requested by the underwriter, shall enter into an underwriting agreement with a managing underwriter or underwriters in connection with such offering containing representations, warranties, indemnities and agreements customarily included (but not inconsistent with the covenants and agreements of the Company contained herein) by an issuer of common stock in underwriting agreements with respect to offerings of common stock for the account of, or on behalf of, such issuers.

(d) Each Selling Shareholder agrees that upon receipt of any notice from the Company of the happening of any event of the kind described in Sections 2.6(a)(ix)(C), 2.6(a)(ix)(D), or 2.6(a)(x), such Selling Shareholder shall forthwith discontinue (in the case of Section 2.6(a)(ix)(D), only in the relevant jurisdiction set forth in such notice) such Selling Shareholder's disposition of Registrable Securities pursuant to the applicable registration statement and prospectus relating thereto until such Selling Shareholder's receipt of the copies of the supplemented or amended prospectus contemplated by Section 2.6(a)(x) and, if so directed by the Company, deliver to the Company, at the Company's expense, all copies, other than permanent file copies, then in such Selling Shareholder's possession of the prospectus current at the time of receipt of such notice relating to such Registrable Securities. In the event the Company shall give such notice, any applicable period during which such registration statement must remain effective pursuant to this Agreement shall be extended by the number of days during the period from the date of giving of a notice regarding the happening of an event of the kind described in Section 2.6(a)(ix), Section 2.6(a)(ix)(D) or Section 2.6(a)(x) to the date when all such Selling Shareholders shall receive such a supplemented or amended prospectus and such prospectus shall have been filed with the SEC.

Section 2.7 Registration Expenses. All expenses incident to the Company's performance of, or compliance with, its obligations under Article II of this Agreement in respect of a particular offering, including, without limitation, all registration and filing fees, all fees and expenses of compliance with securities and "blue sky" laws, all fees and expenses associated with filings required to be made with the FINRA (including, if applicable, reasonable and customary fees and expenses of any "qualified independent underwriter" as such term is defined by the FINRA), all fees and expenses of compliance with securities and "blue sky" laws, all printing (including, without limitation, expenses of printing certificates for the Registrable Securities in a form eligible for deposit with the Depository Trust Company and of printing prospectuses if the printing of prospectuses is requested by a holder of Registrable Securities) and copying expenses, all messenger and delivery expenses, all fees and expenses of the Company's independent certified public accountants and counsel (including with respect to "comfort" letters and opinions) and reasonable and customary fees and expenses of one firm of counsel to the Selling Shareholders (which firm shall be selected by the Selling Shareholders holding a majority of the Registrable Securities included in such registration) (collectively, the "Registration Expenses") shall be borne by the Selling Shareholders that are selling Registrable Securities in connection with such offering, regardless of whether a registration is effected; provided, that such expenses shall be consistent with the customary and then-prevailing market practice for similar offerings (taking into account the size of such offerings and other relevant factors but assuming a seller of registrable securities other than the Company) (the "Selling Shareholder Expenses Cap"). The Company will pay any amounts above the Selling Shareholder Expenses Cap in respect of any offering and will pay its internal expenses (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties, the expense of any annual audit and the expense of any liability insurance) and the expenses and fees for listing the securities to be registered on each securities exchange and included in each established over-the-counter market on which similar securities issued by the Company are then listed or traded. Each Selling Shareholder shall pay its portion of all underwriting discounts and commissions and transfer taxes, if any, relating to the sale of such Selling Shareholder's Registrable Securities pursuant to any registration.

Section 2.8 Registration Indemnification.

(a) By the Company. The Company agrees to indemnify and hold harmless, to the fullest extent permitted by law, each Selling Shareholder and each of their respective Affiliates and their respective officers, directors, employees, managers, partners and agents and each Person who controls (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act) such Selling Shareholder or such other Person indemnified under this Section 2.8(a) from and against all losses, claims, damages, liabilities and expenses, whether joint or several (including reasonable expenses of investigation and reasonable attorneys' fees and expenses) (collectively, the "Losses"), to which they are or any of them may become subject under the Securities Act, the Exchange Act or other U.S. federal or state statutory law (including any applicable "blue sky" laws), rule or regulation, at common law or otherwise, insofar as such Losses arise out of, are based upon, are caused by or relate to any untrue statement (or alleged untrue statement) of a material fact contained in any registration statement, prospectus or preliminary prospectus, offering circular, offering memorandum or Disclosure Package (including the Free Writing Prospectus) or any amendment or supplement thereto or any filing or document incidental to such registration or qualification of the securities as required by this Agreement, or any omission (or alleged omission) of a material fact required to be stated therein or necessary to make the statements therein not misleading, except that no Person indemnified shall be indemnified hereunder insofar as the same are made in conformity with and in reliance on information furnished in writing to the Company by such Person concerning such Person expressly for use therein. Such indemnification obligation shall be in addition to any liability that the Company may otherwise have to any such indemnified person. In connection with an Underwritten Offering and without limiting any of the Company's other obligations under this Agreement, the Company shall also indemnify such underwriters, their officers, directors, employees and agents and each Person who controls (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act) such underwriters or such other Person indemnified under this Section 2.8(a) to the same extent as provided above with respect to the indemnification (and exceptions thereto) of Selling Shareholders. Reimbursements payable pursuant to the indemnification contemplated by this Section 2.8(a) will be made by periodic payments during the course of any investigation or defense, as and when bills are received or expenses incurred.

(b) By the Selling Shareholders. In connection with any registration statement in which a Shareholder is participating, each such Selling Shareholder will furnish to the Company in writing information regarding such Person's ownership of Registrable Securities and its intended method of distribution thereof and, to the extent permitted by law, shall, severally and not jointly, indemnify the Company, its Affiliates and their respective directors, officers, employees and agents and each Person who controls (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act) the Company or such other Person indemnified under this Section 2.8(b) against all Losses caused by any untrue statement of material fact contained in the registration statement, prospectus or preliminary prospectus or Free Writing Prospectus or any amendment or supplement thereto or any omission of a material fact required to be stated therein or necessary to make the statements therein not misleading, but only to the extent that such untrue statement or omission is furnished in writing by such Person concerning such Person expressly for use therein; provided, however, that each Selling Shareholder's obligation to indemnify the Company hereunder shall, to the extent more than one Person is subject to the same indemnification obligation, be apportioned between each Person based upon the net amount received by each Person from the sale of Registrable Securities, as compared to the total net amount received by all of the indemnifying Persons pursuant to such registration statement. Notwithstanding the foregoing, no Person shall be liable to the Company and the underwriters for aggregate amounts in excess of the lesser of (i) such apportionment and (ii) the net amount received by such holder in the offering giving rise to such liability.

(c) Notice. Any Person entitled to indemnification hereunder shall give prompt written notice to the indemnifying party of any claim with respect to which it seeks indemnification; provided, however, the failure to give such notice shall not release the indemnifying party from its obligation, except to the extent that the indemnifying party has been materially prejudiced by such failure to provide such notice on a timely basis.

(d) Defense of Actions. In any case in which any such action is brought against any indemnified party, and it notifies an indemnifying party of the commencement thereof, the indemnifying party will be entitled to participate therein, and, to the extent that it may wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party will not (so long as it shall continue to have the right to defend, contest, litigate and settle the matter in question in accordance with this paragraph) be liable to such indemnified party hereunder for any legal or other expense subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation, supervision and monitoring (unless (i) such indemnified party reasonably objects to such assumption on the grounds that there may be defenses available to it which are different from or in addition to the defenses available to such indemnifying party, (ii) counsel to the indemnifying party has informed the indemnifying party that the joint representation of the indemnifying party and one or more indemnified parties could be inappropriate under applicable standards of professional conduct, or (iii) the indemnifying party shall have failed within a reasonable period of time to assume such defense and the indemnified party is or is reasonably likely to be prejudiced by such delay, in any such event the indemnified party shall be promptly reimbursed by the indemnifying party for the expenses incurred in connection with retaining separate legal counsel). An indemnifying party shall not be liable for any settlement of an action or claim effected without its consent (such consent not to be unreasonably withheld). The indemnifying party shall lose its right to defend, contest, litigate and settle a matter if it shall fail to diligently contest such matter (except to the extent settled in accordance with the next following sentence). No matter shall be settled by an indemnifying party without the consent of the indemnified party (which consent shall not be unreasonably withheld, it being understood that the indemnified party shall not be deemed to be unreasonable in withholding its consent if the proposed settlement imposes any obligation on the indemnified party).

(e) Survival. The indemnification provided for under this Agreement shall remain in full force and effect regardless of any investigation made by or on behalf of the indemnified Person and will survive the transfer of the Registrable Securities and the termination of this Agreement.

(f) Contribution. If recovery is not available or is insufficient under the foregoing indemnification provisions for any reason or reasons other than as specified therein, in each case as determined by a court of competent jurisdiction, any Person who would otherwise be entitled to indemnification by the terms thereof shall nevertheless be entitled to contribution with respect to any Losses with respect to which such Person would be entitled to such indemnification but for such reason or reasons. In determining the amount of contribution to which the respective Persons are entitled, there shall be considered the Persons' relative knowledge and access to information concerning the matter with respect to which the claim was asserted, the opportunity to correct and prevent any statement or omission, and other equitable considerations appropriate under the circumstances. It is hereby agreed that it would not necessarily be equitable if the amount of such contribution were determined by pro rata or per capita allocation or by any other method of allocation which does not take account of the equitable considerations referred to in the immediately preceding sentence of this Section 2.8(f). No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not found guilty of such fraudulent misrepresentation. Notwithstanding the foregoing, no Selling Shareholder or transferee thereof shall be required to make a contribution in excess of the net amount received by such holder from its sale of Registrable Securities in connection with the offering that gave rise to the contribution obligation.

Section 2.9 Request for Information; Certain Rights.

(a) Request for Information. Not less than five (5) business days before the expected filing (or confidential submission, if applicable) date of each registration statement pursuant to this Agreement, the Company shall notify each Shareholder who has timely provided the requisite notice hereunder entitling the Shareholder to include for registration Registrable Securities in such registration statement of the information, documents and instruments from such Shareholder that the Company or any underwriter reasonably requests in connection with such registration statement, including, but not limited to a questionnaire, custody agreement, power of attorney, form of lock-up letter and form of underwriting agreement (the "Requested Information"). Such Shareholder shall promptly return the Requested Information to the Company. If the Company has not received the Requested Information (or a written assurance from such Shareholder that the Requested Information that cannot practicably be provided prior to filing of the registration statement will be provided in a timely fashion) from such Shareholder within a reasonable period of time (as determined by the Company) prior to the filing (or confidential submission, if applicable) of the applicable registration statement, the Company may file such registration statement without including Registrable Securities of such Shareholder, provided that the Company shall include such Registrable Securities upon receipt of such Requested Information. The failure to so include in any registration statement the Registrable Securities of a Shareholder (with regard to that registration statement) shall not in and of itself result in any liability on the part of the Company to such Shareholder.

(b) No Grant of Future Registration Rights. The Company shall not grant any shelf, demand, piggyback or incidental registration rights that are senior to or otherwise conflict with the rights granted to the Shareholders hereunder to any other Person without the prior written consent of Shareholders holding a majority of the Registrable Securities held by all Shareholders.

(c) Alternative Markets. In the event that a trading market for the Company's Shares develops that does not require that the Shares be registered under Section 12 of the Exchange Act (e.g. outside the United States or through a Rule 144A trading market), the Company agrees to provide alternative liquidity provisions to the Shareholders that would be the functional equivalent of this Article II, including the provision of offering documents, the entering into of placement and/or listing agreements and the functional equivalent of the other terms of this Article II and with the functional equivalent of the division of liabilities and expenses as provided in this Article II.

(d) Adjustments Affecting Registrable Shares. Without the written consent of each Shareholder, the Company shall not effect or permit to occur any combination, subdivision or reclassification of Registrable Shares that would materially adversely affect the ability of the Shareholders to include such Registrable Shares in any registration of securities under the Securities Act contemplated by this Agreement or the marketability of such Registrable Shares under any such registration or other offering.

(e) Rule 144. The Company shall take all actions reasonably necessary to enable Shareholders to sell Registrable Shares without registration under the Securities Act within the limitation of the exemptions provided by (a) Rule 144 under the Securities Act, as such rule may be amended from time to time or (b) any similar rules or regulations adopted by the Commission, including, without limiting the generality of the foregoing, filing on a timely basis all reports required to be filed under the Exchange Act. Upon the written request of any Shareholder, the Company shall deliver to such Shareholder a written statement as to whether it has complied with such requirements.

ARTICLE III
REPRESENTATIONS AND WARRANTIES

Section 3.1 Representations and Warranties of Holder. Holder represents and warrants to the Company that (a) this Agreement has been duly authorized, executed and delivered by such Shareholder, and is a valid and binding agreement of Holder, enforceable against it in accordance with its terms, except that the enforcement thereof may be subject to bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to creditors' rights generally and to general principles of equity (regardless of whether such enforcement is considered in a proceeding in equity or at law) and (b) the execution, delivery and performance by Holder, of this Agreement does not violate or conflict with or result in a breach of or constitute (or with notice or lapse of time or both constitute) a default under any agreement to which such Shareholder, is a party or, the organizational documents of Holder.

Section 3.2 Representations and Warranties of the Company. The Company represents and warrants to Holder that (a) this Agreement has been duly authorized, executed and delivered by the Company and is a valid and binding agreement of the Company, enforceable against the Company in accordance with its terms, except that the enforcement thereof may be subject to bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to creditors' rights generally and to general principles of equity (regardless of whether such enforcement is considered in a proceeding in equity or at law); and (b) the execution, delivery and performance by the Company of this Agreement does not violate or conflict with or result in a breach by the Company of or constitute (or with notice or lapse of time or both constitute) a violation by the Company under its Bye-laws, any existing applicable law, rule, regulation, judgment, order, or decree of any Governmental Entity exercising any statutory or regulatory authority of any of the foregoing, domestic or foreign, having jurisdiction over the Company or any of its respective properties or assets, or any agreement or instrument to which the Company is a party or by which the Company or any of its respective properties or assets may be bound.

ARTICLE IV

MISCELLANEOUS

Section 4.1 Notices. All notices, requests, consents and other communications hereunder to any party shall be deemed to be sufficient if contained in a written instrument delivered in person or sent by facsimile (provided a copy is thereafter promptly delivered as provided in this Section 4.1) or nationally recognized overnight courier, addressed to such party at the address or facsimile number set forth below or such other address or facsimile number as may hereafter be designated in writing by such party to the other parties:

(a) if to the Company, to:

(ii) If to AHL, to:

Athene Holding Ltd.
Chesney House
96 Pitts Bay Road
Pembroke HM 08
Bermuda
Attention: Natasha Scotland Courcy
E-mail: NCourcy@athene.bm

with a copy (which shall not constitute notice) to:

Sidley Austin LLP
One South Dearborn Street
Chicago, IL 60603
United States of America

Attention: Perry J. Shwachman
Samir A. Gandhi
Jeremy Watson
E-mail: pshwachman@sidley.com
sgandhi@sidley.com
jcwatson@sidley.com

Latham & Watkins LLP
885 Third Avenue
New York, NY 10022
Attention: A. Peter Harwich
Daniel E. Rees
Email: peter.harwich@lw.com
daniel.rees@lw.com

(b) if to Holder, to:

c/o Apollo Global Management
9 West 57th Street, 43rd Floor
New York, NY 10019
Attention: John J. Suydam and General Counsel

with a copy to:

Paul, Weiss, Rifkind, Wharton & Garrison LLP
1285 Avenue of the Americas
New York, NY 10019
Attention: Tracey A. Zaccone, Esq.
Fax: (212) 492-0085

Section 4.2 Severability. The provisions of this Agreement shall be deemed severable and the invalidity or unenforceability of any provision shall not affect the validity or enforceability of the other provisions hereof. If any provision of this Agreement, or the application thereof to any person or entity or any circumstance, is found to be invalid or unenforceable in any jurisdiction, (a) a suitable and equitable provision shall be substituted therefor in order to carry out, so far as may be valid and enforceable, the intent and purpose of such invalid or unenforceable provision and (b) the remainder of this Agreement and the application of such provision to other Persons or circumstances shall not be affected by such invalidity or unenforceability, nor shall such invalidity or unenforceability affect the validity or enforceability of such provision, or the application thereof, in any other jurisdiction.

Section 4.3 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and all of which shall, taken together, be considered one and the same agreement, it being understood that both parties need not sign the same counterpart. Facsimile counterpart signatures to this Agreement shall be binding and enforceable.

Section 4.4 Entire Agreement; No Third Party Beneficiaries. This Agreement (a) constitutes the entire agreement and supersedes all other prior agreements, both written and oral, among the parties with respect to the subject matter hereof and is not intended to confer upon any Person, other than the parties hereto, any rights or remedies hereunder.

Section 4.5 Further Assurances. Each party hereto shall do and perform or cause to be done and performed all such further acts and things and shall execute and deliver all such other agreements, certificates, instruments, and documents as any other party hereto reasonably may request in order to carry out the provisions of this Agreement and the consummation of the transactions contemplated hereby.

Section 4.6 Governing Law; Equitable Remedies. **THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF BERMUDA (WITHOUT GIVING EFFECT TO CONFLICT OF LAWS PRINCIPLES THEREOF)**. The parties hereto agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with its specific terms or was otherwise breached. It is accordingly agreed that the parties hereto shall be entitled to an injunction or injunctions and other equitable remedies to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof in the Selected Court (as defined below), this being in addition to any other remedy to which they are entitled at law or in equity. Any requirements for the securing or posting of any bond with respect to such remedy are hereby waived by each of the parties hereto. Each party further agrees that, in the event of any action for an injunction or other equitable remedy in respect of such breach or enforcement of specific performance, it will not assert the defense that a remedy at law would be adequate.

Section 4.7 Consent To Jurisdiction. With respect to any suit, action or proceeding ("Proceeding") arising out of or relating to this Agreement or any transaction contemplated hereby each of the parties hereto hereby irrevocably (a) submits to the exclusive jurisdiction of the Supreme Court of Bermuda (the "Selected Court") and waives any objection to venue being laid in the Selected Court whether based on the grounds of forum non conveniens or otherwise and hereby agrees not to commence any such Proceeding other than before one of the Selected Court; provided, however, that a party may commence any Proceeding in a court other than the Selected Court solely for the purpose of enforcing an order or judgment issued by the Selected Court; (b) consents to service of process in any Proceeding by the mailing of copies thereof by registered or certified mail, postage prepaid, or by recognized international express carrier or delivery service, to the applicable party hereto at their respective addresses referred to in Section 4.1; provided, however, that nothing herein shall affect the right of any party hereto to serve process in any other manner permitted by law; and (c) **TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW THAT CANNOT BE WAIVED, WAIVES, AND COVENANTS THAT IT WILL NOT ASSERT (WHETHER AS PLAINTIFF, DEFENDANT OR OTHERWISE) ANY RIGHT TO TRIAL BY JURY IN ANY ACTION ARISING IN WHOLE OR IN PART UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY, WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AND AGREES THAT ANY OF**

THEM MAY FILE A COPY OF THIS PARAGRAPH WITH ANY COURT AS WRITTEN EVIDENCE OF THE KNOWING, VOLUNTARY AND BARGAINED-FOR AGREEMENT AMONG THE PARTIES IRREVOCABLY TO WAIVE ITS RIGHT TO TRIAL BY JURY IN ANY PROCEEDING WHATSOEVER AMONG THEM RELATING TO THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY WILL INSTEAD BE TRIED IN A COURT OF COMPETENT JURISDICTION BY A JUDGE SITTING WITHOUT A JURY.

Section 4.8 Amendments; Waivers.

(a) No provision of this Agreement may be amended or waived unless such amendment or waiver is in writing and signed, in the case of an amendment, by the Company and Shareholders holding a majority of the Registrable Securities, or in the case of a waiver, by the party against whom the waiver is to be effective; provided, that such amendment or waiver which adversely affects any party to this Agreement and is prejudicial to such party relative to all other parties (other than the Company) cannot be effected without the consent of such party.

(b) No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

Section 4.9 Assignment. Neither this Agreement nor any of the rights or obligations hereunder shall be assigned by any of the parties hereto without the prior written consent of the other parties; provided that any Shareholder may assign its rights hereunder in connection with a transfer of its Shares if such transferee (i) (A) is an Affiliate of such Shareholder or (B) shall own at least 5% of the Company's outstanding Common Stock (on an as-converted basis, if applicable and after giving effect to all vested and unvested Shares, if applicable) after giving effect to such transfer and (ii) shall execute a joinder to this Agreement. Subject to the preceding sentence, this Agreement will be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 4.10 Effectiveness. This Agreement shall become effective upon the Closing Date.

Section 4.11 Term. This Agreement shall automatically terminate with respect to any Shareholder upon the date on which the such Shareholder no longer Beneficially Own Shares representing at least 1% of the Shares then outstanding (after giving effect to all vested and unvested Shares, if applicable).

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered, all as of the date first set forth above.

APOLLO GLOBAL MANAGEMENT, INC.

By: /s/ John J. Suydam
Name: John J. Suydam
Title: Chief Legal Officer, Vice President and Secretary

ATHENE HOLDING LTD.

By: /s/ Adam Laing
Name: Adam Laing
Title: SVP Finance

[Signature Page to Registration Rights Agreement]

Exhibit 10.3

LIQUIDITY AGREEMENT

LIQUIDITY AGREEMENT (the "Agreement"), dated as of February 28, 2020, among Apollo Global Management, Inc., a Delaware corporation (the "Purchaser"), and Athene Holding Ltd., a Bermuda exempted company (together with its Permitted Transferees, the "Holder").

WHEREAS, the Holder is the Holder of certain AOG Units acquired from the Apollo Operating Group in exchange for certain common shares of the Holder;

WHEREAS, the Purchaser and the Holder wish to provide for the Purchaser to purchase certain AOG Units held by the Holder for cash upon the request of the Holder, on the terms and subject to the conditions set forth herein; and

WHEREAS, the Purchaser and the Holder wish to also provide for the Holder to sell certain AOG Units held by the Holder to any Person, on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and undertakings contained herein and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

ARTICLE I
DEFINITIONS

SECTION 1.1 DEFINITIONS.

The following definitions shall be for all purposes, unless otherwise clearly indicated to the contrary, applied to the terms used in this Agreement.

"Affiliate" means in the case of a Person, another Person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with such Person; provided, that none of the Purchaser, the Apollo Operating Group and their respective subsidiaries will be deemed an Affiliate of Holder or any of Holder's Affiliates for purposes of this Agreement.

"Agreement" has the meaning set forth in the preamble of this Agreement.

"AOG Unit" refers to units in the Apollo Operating Group, which represent one (1) limited partnership interest or limited liability company interest, as applicable in each of the limited partnerships or limited liability companies that comprise the Apollo Operating Group.

"AOG Transaction" means the sale by the Holder to one or more Persons of AOG Units in one or more transactions that are exempt from the registration requirements of the Securities Act, including (but not limited to) Regulation D of the Securities Act; provided that no such Person shall be a Prohibited Transferee.

"APO Corp." means APO Corp., a corporation formed under the laws of the State of Delaware, and any successor thereto.

"APO FC" means APO (FC), LLC, an Anguilla limited liability company, and any successor thereto.

"APO FC II" means APO (FC II), LLC, an Anguilla limited liability company, and any successor thereto.

"APO FC III" means APO (FC III), LLC, a Cayman Islands limited liability company, and any successor thereto.

"APO LLC" means APO Asset Co., LLC, a limited liability company formed under the laws of the State of Delaware, and any successor thereto.

"APO UK" means APO UK (FC), Limited, a United Kingdom incorporated company, and any successor thereto.

"Apollo Operating Group" means any carry vehicles, management companies or other entities formed by Purchaser or its Affiliates to engage in the asset management business (including alternative asset management) and receiving management fees, incentive fees, fees paid by Portfolio Companies, carry or other remuneration which are directly owned by Purchaser or its Subsidiaries and AP Professional Holdings, L.P. and which are not subsidiaries of another member of the Apollo Operating Group, excluding any Funds and any Portfolio Companies. As of the date hereof, the Apollo Operating Group consists of Apollo Principal Holdings I, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings II, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings III, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings IV, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings V, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VI, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VII, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings VIII, L.P., a Cayman Islands exempted limited partnership, Apollo Principal

Holdings IX, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings X, L.P., a Cayman Islands exempted limited partnership, Apollo Principal Holdings XI, LLC, an Anguilla limited liability company, Apollo Principal Holdings XII, L.P., a Cayman Islands exempted limited partnership and AMH Holdings (Cayman), L.P., a Cayman Islands exempted limited partnership..

"Apollo Principal Entities" has the meaning set forth in the Founders Exchange Agreement.

"Apollo Principal Operating Agreements" means, collectively, the operating agreement of each Apollo Principal Entity, as each may be amended, supplemented or restated from time to time.

"beneficial ownership" or "beneficially owned" has the meaning set forth in Rule 13d-3 under the Securities Exchange Act of 1934, as amended, and any successor provision.

"Business Day" means each day that is not a Saturday, Sunday or other day on which banking institutions in New York, New York or Hamilton, Bermuda are authorized or required by law to close.

"Cash Amount" means (a) in the case of a Registered Sale, the cash proceeds that the Purchaser receives upon the consummation of a Sale Transaction after deducting any documented commissions, fees and expenses (including fees and expenses of counsel for the Purchaser); provided that the amounts of such commissions, fees and expenses shall be consistent with the customary and then-prevailing market practice for similar transactions (taking into account the size of the Sale Transaction and other relevant factors but assuming a seller other than Purchaser); provided further that in the case of a Piggyback Registration or a Demand Registration, any such commissions, fees and expenses (including fees and expenses of counsel for the Purchaser) shall be allocated to the holders participating in the related Sale Transaction on a pro rata basis based on the amount of Class A Shares sold in such registration by all such holders, (b) in the case of a Purchase Transaction, the cash proceeds to which the Purchaser and the Holder shall agree and (c) in the case of a Private Placement, the cash proceeds that the Purchaser receives upon the consummation of a Private Placement after deducting any documented commissions, fees and expenses (including fees and expenses of counsel for the Purchaser); provided that the amounts of such commissions, fees and expenses shall be consistent with customary and then-prevailing market practice for similar transactions (taking into account the size of the Private Placement and other relevant factors but assuming a seller other than Purchaser).

"Class A Shares" means the Class A common stock, \$.00001 par value per share, of the Purchaser.

"Code" means the Internal Revenue Code of 1986, as amended.

"Delaware Arbitration Act" has the meaning set forth in Section 3.8(d).

"Demand" has the meaning set forth in Section 2.6(a).

"Demand Registration" has the meaning set forth in the Founders Shareholders Agreement.

"Founders Exchange Agreement" means that certain Sixth Amended and Restated Exchange Agreement, dated as of September 5, 2019, among the Purchaser, the Apollo Principal Entities and the Apollo Principal Holders (as defined therein), as may be amended, supplemented or restated from time to time.

"Founders Shareholders Agreement" means the Amended and Restated Shareholders Agreement, dated as of September 5, 2019, among the Purchaser, AP Professional and the other parties thereto, as may be amended, supplemented or restated from time to time; other than such amendments, supplements or restatements that modify the agreement in a manner that would (or would be reasonably likely to) disproportionately and adversely affect the Holder in any material respect.

"Funds" means any pooled investment vehicle or similar entity sponsored or managed, directly or indirectly, by Purchaser or any of its subsidiaries.

"Holder" has the meaning set forth in the preamble of this Agreement.

"Insider Trading Policy" means the Insider Trading Policy of the Purchaser applicable to the directors, executive officers and employees of the Purchaser or its manager or the Purchaser's subsidiaries, as such Insider Trading Policy may be amended from time to time.

"Intent Notice Date" means, with respect to each Quarter, a single date that is not later than sixty (60) days immediately preceding the first Business Day that directors, executive officers and employees of the Purchaser or its manager or the Purchaser's subsidiaries are permitted to trade under the Insider Trading Policy..

"Investors" has the meaning set forth in the Founders Shareholders Agreement.

"Minimum Sale Price" has the meaning set forth in Section 2.2(b).

"Notice of Sale" has the meaning set forth in Section 2.2(b).

"Other Demanding Sellers" has the meaning set forth in the Founders Shareholders Agreement.

"Permitted Transferee" means, with respect to any Person, any Affiliate of such Person, a Transfer to which such Affiliate would not reasonably be expected to result in materially adverse tax or regulatory consequences to any party hereto, as reasonably determined by the board of directors of Purchaser in good faith; provided that any Permitted Transferee shall execute a joinder (x) to this Agreement and (y) upon the request of Purchaser, to the applicable organizational documents of the Apollo Operating Group.

"Person" shall be construed broadly and includes any individual, corporation, partnership, firm, joint venture, limited liability company, estate, trust, business association, organization, governmental entity or other entity.

"Piggyback Registration" has the meaning set forth in the Founders Shareholders Agreement.

"Piggyback Sellers" has the meaning set forth in the Founders Shareholders Agreement.

"Portfolio Companies" means any Person in which any Fund owns or has made, directly or indirectly, an investment.

"Price Floor" means a price per Class A Share equal to a 10% discount to the average VWAP of the Class A Shares in the 10 consecutive Business Days prior to the applicable measurement date.

"Private Placement" means a sale of Class A Shares by the Purchaser to any Person pursuant to an exemption from the registration requirements of the Securities Act, including (but not limited to) Regulation D of the Securities Act; provided that no such Person shall be a Prohibited Transferee.

"Prohibited Transferee" means (i) any Person who is a "Bad Actor" as defined in Regulation D of the Securities Act, (ii) any Person with which the Purchaser would be prohibited by any law or regulation from transacting, and (iii) any Person listed on Exhibit C hereto, which may be amended and supplemented from time to time with the Holder's prior written consent, not to be unreasonably withheld, and any Affiliate of any thereof.

"Purchase Transaction" means the purchase by the Purchaser of AOG Units from the Holder pursuant to a Notice of Sale at a price agreed upon, in good faith, by the Holder and the Purchaser that does not involve a Registered Sale or a Private Placement.

"Purchaser" has the meaning set forth in the preamble of this Agreement.

"Purchaser Certificate of Incorporation" means the Certificate of Incorporation of the Purchaser, dated as of September 5, 2019, as may be amended, supplemented or restated from time to time.

"Quarter" means, unless the context requires otherwise, a fiscal quarter of the Purchaser.

"Quarterly Sale Date" means, for each Quarter, unless otherwise required by Section 409A of the Code:

(i) with respect to any amount of Class A Shares to be issued and offered in a Registered Sale, the closing date of such offering (or if such Registered Sale does not occur, the next Business Day following the date when it has been determined such Registered Sale will not occur);

(ii) with respect to any amount of Class A Shares to be issued and offered pursuant to the exercise of an underwriter's over-allotment option granted in connection with a Registered Sale, the closing date of such sale of Class A Shares pursuant to the exercise of such over-allotment option (or if such over-allotment option is not exercised or is not exercised in full, the sale as to such portion shall occur on the Business Day immediately following the lapse of the over-allotment option period);

(iii) with respect to any amount of Class A Shares to be issued and offered in a Private Placement, the closing date of such Private Placement; and

(iv) with respect to any amount of AOG Units that shall be acquired by the Purchaser in a Purchase Transaction, the closing date of such Purchase Transaction.

"Ratio" means the ratio of Class A Shares to AOG Units specified in this Agreement. On the date of this Agreement, the initial Ratio shall be 100% and shall be subject to adjustments as provided in Section 2.3.

"Registered Sale" means a public offering of Class A Shares pursuant to an effective registration statement under the Securities Act, other than pursuant to a registration statement on Form S-4 or Form S-8 or any similar or successor form; provided that the parties hereto agree that such Registered Sale may be conducted as a block trade and may be either underwritten or a registered direct transaction; provided, further, that the Purchaser shall in its sole discretion select the underwriters (if any) and its counsel for any Registered Sale.

"Requested Information" has the meaning set forth in the Founders Shareholders Agreement.

"Sale" has the meaning set forth in Section 2.1(a) of this Agreement.

"Sale Notice Date" means, with respect to each Quarter, the single date that is ten (10) days prior to the first Business Day of the Purchaser's Trading Window.

"Sale Transaction" means (a) a Registered Sale of a number of Class A Shares equal to the product of (i) the AOG Units to be sold by the Holder pursuant to the applicable Notice of Sale and (ii) the Ratio, (b) a Purchase Transaction or (c) a Private Placement.

"Securities Act" means Securities Act of 1933, as amended.

"Shareholder" has the meaning set forth in the Founders Shareholders Agreement.

"Stock Exchange" means the principal securities exchange on which Class A Shares are then traded.

"Suspension Period" has the meaning set forth in Section 2.6(b)(iii) of this Agreement.

"Threshold Amount" means $50 million, which value shall be determined on the basis of the product of (i) such AOG Units listed on the applicable Notice of Sale, (ii) the Ratio on the date of such Notice of Sale and (iii) the Minimum Sale Price listed on the applicable Notice of Sale; provided that "Threshold Amount" means $0 if the Sale Transaction is a Demand Registration.

"Trading Window" means a period during which the directors, executive officers and/or employees of the Purchaser or its manager or the Purchaser's subsidiaries are permitted to transact in the Purchaser's securities pursuant to the Purchaser's Insider Trading Policy.

"Transfer" means any direct or indirect sale, assignment, bequest, conveyance, devise, gift (outright or in trust), pledge, charge, encumbrance, hypothecation, mortgage, creation of a security interest in, exchange, transfer or other disposition or act of alienation, whether voluntary or involuntary or by operation of law (including the creation of any derivative or synthetic interest).

"Transfer Agent" means such bank, trust company or other Person as shall be appointed from time to time by the Purchaser pursuant to the Purchaser Certificate of Incorporation to act as registrar and transfer agent for the Class A Shares.

"Underwriters Cut-Backs" means the reduction in the number of securities sought to be sold in any offering as a result of the written advice by any managing underwriter (or a nationally recognized independent investment bank selected by the Purchaser and reasonably acceptable to the Holder) that, in its opinion, the inclusion of the entire amount of the securities sought to be included in such offering would adversely affect the marketability of the equity securities sought to be sold pursuant to such offering.

"VWAP" means with respect to any publicly traded equity security, the volume weighted average price of such equity security over a specified period of time as reported by Bloomberg (or its equivalent, nationally recognized successor if Bloomberg ceases to provide such reports).

ARTICLE II
SALE OF AOG UNITS

SECTION 2.1 SALE OF AOG UNITS.

(a) Subject to adjustment and other provisions as provided in this Article II, once each Quarter, on the applicable Quarterly Sale Date, the Holder shall be entitled to sell to the Purchaser AOG Units held by the Holder representing at least the Threshold Amount. Holder shall, on the applicable Quarterly Sale Date, deliver and surrender AOG Units to the Purchaser in exchange for the payment by the Purchaser of the Cash Amount (such sale, a "Sale").

(b) On the Quarterly Sale Date, all rights and obligations of the Holder as holder of such AOG Units shall cease upon payment in full of the Cash Amount and surrender of the AOG Units subject to such sale.

(c) To the extent consent of any Person shall be required pursuant to the provisions of the Apollo Principal Operating Agreements, the Purchaser, APO Corp., APO FC, APO FC II, APO FC III, APO LLC and/or APO UK, as applicable, shall use commercially reasonable efforts to cause such consent to be obtained (if not already obtained).

(d) The parties hereto acknowledge and agree that the AOG Units held by Holder may not be Transferred to any Person, and the Holder shall not have any right to Transfer or otherwise dispose of any AOG Units, other than (x) subject to required regulatory approvals, to a Permitted Transferee or (y) through a Transfer in accordance with this Agreement.

(e) Any attempt to Transfer any AOG Units other than to a Permitted Transferee or in accordance with this Agreement shall be null and void and no right, title or interest in or to such AOG Units shall be Transferred to the purported transferee, buyer, donee, assignee or encumbrance holder in connection with any such attempted Transfer. Neither the Purchaser nor the members of the Apollo Operating Group will give, or permit their respective transfer agents to give, any effect to any such attempted Transfer on their records.

(f) Notwithstanding anything to the contrary in this Agreement, no limited partnership interest or limited liability company interest comprising an AOG Unit (an "Underlying AOG Interest") may be Transferred to any Person unless an equal number of each of the other limited partnership interests and limited liability company interests comprising an AOG Unit is Transferred concurrently therewith to the same transferee such that the transferee receives securities comprising AOG Units as defined under this Agreement. Any Transfer of any Underlying AOG Interest which does not comply with the preceding sentence shall be null and void and no right, title or interest in or to such Underlying AOG Interest shall be Transferred to the purported transferee, buyer, donee, assignee or encumbrance holder in connection with any such attempted Transfer. For so long as any subsidiary of Holder that holds Underlying AOG Interests as of the date hereof holds any Underlying AOG Interests other than as undivided Operating Group Units, Holder shall cause such subsidiary to (i) not conduct any business or operations or other activities and to not have any assets or liabilities except for ownership of Underlying AOG Interests and (ii) be a wholly owned subsidiary of Holder.

SECTION 2.2 SALE PROCEDURES; NOTICES AND REVOCATIONS.

(a) Notice of Intent.

(i) If the Holder determines that it may exercise the right to sell AOG Units as set forth in Section 2.1(a), the Holder shall, to the extent it has determined to do so, on the Intent Notice Date, provide a revocable written notice of its intent to sell such AOG Units, substantially in the form of Exhibit A hereto, which notice of intent shall include an estimate of the number of AOG Units intended to be so sold to the Purchaser.

(ii) A notice of intent shall permit, but not obligate, the Holder to sell any or all of the AOG Units included in such notice of intent up to the amount of AOG Units set forth in such notice of intent. The Holder shall not be entitled to sell AOG Units on a Quarterly Sale Date in excess of the number of AOG Units set forth in its notice of intent submitted with respect to such quarterly period.

(b) Notice of Sale. In the event that the Holder has satisfied the notice procedures in Section 2.2(a)(i), the Holder may exercise the right to sell AOG Units set forth in Section 2.1(a) by providing on or before the Sale Notice Date an irrevocable written notice of sale to the Purchaser, which shall include the number of AOG Units to be so sold to the Purchaser (which, for the avoidance of doubt, shall equal or exceed the Threshold Amount), substantially in the form of Exhibit B hereto (each, a "Notice of Sale"); provided, that a Notice of Sale shall include a minimum sale price (stated on a per-Unit basis before deducting for any commissions, fees and expenses) for the AOG Units included in such Notice of Sale that is equal to at least the Price Floor (such price, the "Minimum Sale Price").

(c) Purchaser's Options. If the Purchaser has received a Notice of Sale, the Purchaser in its sole discretion may elect either (i) to consummate a Sale Transaction or (ii) to permit the Holder to consummate an AOG Transaction.

(d) Sale Transaction.

(i) Purchase Transaction. If the Purchaser has received a Notice of Sale and has elected to consummate a Sale Transaction, the Purchaser and the Holder may agree to consummate the Sale Transaction through a Purchase Transaction.

(ii) Registered Sale. If the Purchaser has received a Notice of Sale and has elected to consummate a Sale Transaction, and the Purchaser and the Holder have not agreed to consummate a Purchase Transaction pursuant to Section 2.2(d)(i), the Purchaser shall use its best efforts to consummate one Registered Sale within the Trading Window following receipt of such Notice of Sale; provided that the Purchaser shall not be required to consummate such Registered Sale, and the Notice of Sale for such Sale Transaction shall be void and have no further effect, if the gross sale price per Class A Share that the Purchaser would receive upon the consummation of such Registered Sale shall be less than the Minimum Sale Price; provided further that in a Registered Sale the Holder shall be permitted to adjust the Minimum Sale Price prior to the pricing of such offering so long as such adjusted Minimum Sale Price remains in excess of the Price Floor on the date of such adjustment.

(iii) Private Placement. If the Purchaser notifies the Holder that it cannot consummate a Registered Sale pursuant to Section 2.2(d)(ii), the Holder may require the Purchaser to use its best efforts to consummate a Private Placement to one or more Persons; provided that the Purchaser shall not be required to consummate such Private Placement, and the Notice of Sale for such Sale Transaction shall be void and have no further effect, if the gross sale price per Class A Share that the Purchaser would receive upon the consummation of such Private Placement shall be less than the Minimum Sale Price on the applicable Quarterly Sale Date; provided further that the Purchaser shall not consummate a Private Placement to a Prohibited Transferee.

(iv) Limits. In the case of a Sale Transaction pursuant to Section 2.2(d)(ii) or (iii), the Purchaser may, in each case, refuse to consummate a Sale Transaction to any Person if the difference between (x) the beneficial ownership of Class A Shares by such Person following such Sales Transaction minus (y) the beneficial ownership of Class A Shares by such Person prior to such Sales Transaction, in each case computed on a fully diluted basis, would be greater than 2.0%.

(v) Settlement of Sale. Provided that the parties have not agreed to consummate a Purchase Transaction pursuant to Section 2.2(d)(i), the Purchaser's obligation to acquire any AOG Units from the Holder (x) in a Registered Sale is conditioned upon its ability to complete a Registered Sale of Class A Shares and receive gross cash proceeds per share at or above the Minimum Sale Price and (y) in a Private Placement is conditioned upon its ability to complete a Private Placement of Class A Shares and receive gross cash proceeds per share at or above the Minimum Sale Price on the applicable Quarterly Sale Date. As promptly as practicable following the consummation of a Sale Transaction and the surrender for exchange of AOG Units as set forth in Section 2.1(b), the Purchaser shall deliver or cause to be delivered to the Holder the Cash Amount by wire transfer of immediately available funds to the account of the Holder set forth on the applicable Notice of Sale.

(e) AOG Transaction. If the Purchaser has received a Notice of Sale and has elected not to consummate a Sale Transaction pursuant to Section 2.2(d), the Purchaser shall notify the Holder of such election and shall permit the Holder to consummate an AOG Transaction in accordance with Section 2.7.

(f) Procedures. The Purchaser may adopt reasonable procedures for the implementation of the provisions set forth in this Article II, including, without limitation, procedures for the giving of notice of an election for sale, subject to consent of the Holder to the extent contrary to any procedures expressly set forth herein. The Purchaser may consummate any Sale Transaction through one or more designees, provided that the use of such designee does not adversely affect any rights of the Holder, or the underlying obligation of the Purchaser, pursuant to this Agreement.

(g) Investment Bank. In connection with any Sale Transaction or Purchase Transaction, any investment bank will be selected by the Purchaser and any commissions and fees will be agreed by the investment bank and the Purchaser and, in each case, reasonably acceptable to the Holder.

SECTION 2.3 SPLITS, DISTRIBUTIONS AND RECLASSIFICATIONS.

If there is: (a) any subdivision (by split, distribution, reclassification, recapitalization or otherwise) or combination (by reverse split, reclassification, recapitalization or otherwise) of the AOG Units it shall be accompanied by an identical subdivision or combination of the Class A Shares; or (b) any subdivision (by split, distribution, reclassification, recapitalization or otherwise) or combination (by reverse split, reclassification, recapitalization or otherwise) of the Class A Shares it shall be accompanied by an identical subdivision or combination of the AOG Units. In the event of a reclassification, recapitalization, merger, consolidation, reorganization or other similar transaction as a result of which the Class A Shares are converted into another security, then all references in this agreement to the Class A Shares shall be substituted by a reference to such other security. Except as may be required in the immediately preceding sentence, no adjustments in respect of distributions shall be made upon the sale of any AOG Unit.

SECTION 2.4 BLACKOUT PERIODS.

Notwithstanding anything to the contrary herein, the Purchaser shall have the right to refuse to consummate a Sale if, (a) at any time the Purchaser reasonably determines that there may be material non-public information that the Purchaser has a bona fide business purpose for preserving as confidential, provided, however, that this shall not restrict the Holder from selling AOG Units if it is anticipated that the material non-public information will become public prior to, or in conjunction with, the applicable Quarterly Sale Date; or (b) if such Sale would be prohibited under applicable law or regulation. The Purchaser shall be entitled to so refuse to consummate a Sale for a reasonable period of time not to exceed ninety (90) consecutive days or one-hundred eighty (180) days in the aggregate in any twelve (12) month period.

SECTION 2.5 CONSIDERATIONS PERTAINING TO REGISTERED SALES.

(a) If a Registered Sale of any Class A Shares to be issued upon any Sale in respect of a Quarterly Sale Date is to occur and (A) such Registered Sale does not occur, the Purchaser is not obligated to consummate such Sale, (B) there are Underwriter Cut-Backs on such Registered Sale, the Purchaser may reduce the number of AOG Units to be purchased on the applicable Quarterly Sale Date according to the Ratio or (C) such Registered Sale includes an over-allotment option, which option shall lapse un-exercised in whole or in part, the Purchaser may reduce the number of AOG Units to be purchased on the applicable Quarterly Sale Date, as adjusted by the applicable Ratio, by the number of AOG Units attributable to such un-exercised portion of the over-allotment amount, as adjusted by the applicable Ratio.

(b) If a Registered Sale of any Class A Shares to be issued upon any Sale in respect of a Quarterly Sale Date is to occur, the Holder agrees that it shall (x) provide promptly the Requested Information to the Purchaser, (y) agree to customary indemnification provisions regarding the Requested Information in favor of the Purchaser and to any lock-up agreement requested by the underwriters (if any) of such Registered Sale and (z) provide to the Purchaser any additional materials or information reasonably requested by the Purchaser.

(c) The parties agree that a Registered Sale shall constitute a Piggyback Registration pursuant to the Founders Shareholders Agreement, which entitles each Shareholder to include its own Class A Shares on such Piggyback Registration. If (i) any Shareholder requests to include its own Class A Shares on such Piggyback Registration and (ii) such offering is the subject of Underwriter Cut-Backs, then the Class A Shares the Purchaser intended to issue in such Registered Sale shall be included together with Class A Shares requested to be included in such Piggyback Registration by any Shareholders, pro rata among the Purchaser and such Shareholders based upon the number of shares of Class A Shares deemed to be owned by such Persons.

SECTION 2.6 CONSIDERATIONS PERTAINING TO PRIVATE PLACEMENTS.

(a) If a Private Placement of any Class A Shares to be issued upon any Sale in respect of a Quarterly Sale Date is to occur and such Private Placement does not occur, the Purchaser will cancel all exchanges of the number of AOG Units attributable to the Class A Shares to be offered in such Private Placement in respect of such Quarterly Sale Date.

(b) If a Private Placement of any Class A Shares to be issued upon any Sale in respect of a Quarterly Sale Date is to occur, (x) the Holder shall be entitled to designate a placement agent that is reasonably satisfactory to the Purchaser to consummate such Private Placement and (y) each Person purchasing Class A Shares in such Private Placement shall enter into a customary purchase agreement, which shall, among other things, include customary representations and warranties to and indemnification provisions in favor of the Purchaser.

SECTION 2.7 CONSIDERATIONS PERTAINING TO AOG TRANSACTIONS.

(a) Subject to Section 2.7(b), the Holder agrees that any Person that acquires AOG Units from the Holder in an AOG Transaction shall be required to directly hold such AOG Units for at least 30 calendar days.

(b) Notwithstanding anything to the contrary in Section 2.7(a), in connection with any AOG Transaction, the Person that acquires such AOG Units from the Holder and the Purchaser shall enter into a shareholders agreement that shall provide that (i) such Person shall have the right to exchange any AOG Units it acquired into Class A Shares, (ii) the Purchaser shall have the right to require that such Person exchange any AOG Units it acquired into Class A Shares, (iii) such Person shall not be permitted to sell or transfer such AOG Units, provided that such Person shall be permitted to exchange such AOG Units into Class A Shares and sell or transfer such Class A Shares subject to compliance with applicable laws.

(c) The Holder shall not dispose of AOG Units in an AOG Transaction to any Person if the beneficial ownership of Class A Shares by such Person following such AOG Transaction would be greater than 3.5% of the number of total outstanding Class A Shares, in each case computed on a fully diluted basis.

(d) The Purchaser shall provide all reasonable and customary assistance to the Holder in connection with the consummation of any AOG Transaction.

SECTION 2.8 CONSIDERATIONS PERTAINING TO THE FOUNDERS SHAREHOLDERS AGREEMENT.

(a) The Purchaser agrees that it shall give written notice (the "Demand Notice") to the Holder of any demand for registration under the Securities Act (a "Demand") that the Purchaser receives pursuant to the Founders Shareholders Agreement within five (5) Business Days after receipt of such Demand.

(b) If the Holder submits a Notice of Sale which ultimately results in a Registered Sale pursuant to Section 2.2(d)(ii) after the Purchaser has delivered to the Holder a Demand Notice, the Holder acknowledges that Purchaser shall consummate such Registered Sale concurrently, and in the same registration statement, with the related Demand Registration.

(c) Notwithstanding anything to the contrary in the Founders Shareholders Agreement, the Holder agrees that if (i) the Purchaser consummates a Registered Sale concurrently, and in the same registration statement, with the Demand Registration relating to the Demand Notice and (ii) such offering is the subject to Underwriter Cut-Backs, then the Class A Shares that the Purchaser intended to issue in such Registered Sale shall be included together with Class A Shares requested to be included in such Demand Registration and any applicable Piggyback Registration by any Other Demanding Sellers, any Piggyback Sellers and any Investors, pro rata among the Purchaser, Other Demanding Sellers, Piggyback Sellers and the Investors based upon the number of shares of Class A Shares deemed to be owned by such Persons.

SECTION 2.9 TAXES.

The delivery of the Cash Amount upon sale of AOG Units shall be made without charge to the Holder for any stamp or other similar tax in respect of such issuance.

SECTION 2.10 APOLLO OPERATING GROUP.

Upon the formation after the date hereof of a new Apollo Principal Entity that becomes a member of the Apollo Operating Group and in which AP Professional Holdings, L.P. holds an interest, the Purchaser covenants that it shall cause such new Apollo Principal Entity to issue to the Holder a number of AOG Units of such new Apollo Principal Entity equal to the product of (a) the total number of AOG Units of such new Apollo Principal Entity and (b) the percentage of each other Apollo Principal Entity then owned by the Holder.

ARTICLE III

GENERAL PROVISIONS

SECTION 3.1 AMENDMENT.

(a) The provisions of this Agreement may be amended only by the written consent of each of the Purchaser and the Holder.

(b) Notwithstanding anything to the contrary in Section 3.1(a) above, upon any amendment (the "Exchange Amendment") to a provision of the Founders Exchange Agreement for which there is an analogous provision in this Agreement that improves the terms of the Founders Exchange Agreement for any Apollo Principal Holder (as defined in the Founders Exchange Agreement), the Purchaser shall notify the Holder and, upon the request of the Holder, the Purchaser shall agree to amend this Agreement to implement *mutatis mutandis* any such Exchange Amendment.

(c) If the Purchaser determines in good faith after the date of this Agreement that there is a material risk that one or more members of the Apollo Operating Group will be (or is reasonably likely to be) treated as an association taxable as a corporation for U.S. federal income tax purposes (including as a result of having more than 100 partners for U.S. federal income tax purposes), then the Purchaser and the Holder shall cooperate in good faith to amend the terms of this Agreement in order to reduce the risk of such treatment and provide for the sale of AOG Units in a mutually tax-efficient manner.

SECTION 3.2 ADDRESSES AND NOTICES.

All notices, requests, claims, demands and other communications hereunder shall be in writing and shall be given (and shall be deemed to have been duly given upon receipt) by delivery in person, by courier service, by fax, by electronic mail (delivery receipt requested) or by registered or certified mail (postage prepaid, return receipt requested) to the respective parties at the following addresses (or at such other address for a party as shall be as specified in a notice given in accordance with this Section 3.2):

(a) If to the Purchaser, to:

Apollo Global Management, Inc.
9 West 57th Street, 43rd Floor
New York, New York 10019
Attention: John J. Suydam, Esq.
Electronic Mail: jsuydam@apollo.com

with a copy to:

Paul, Weiss, Rifkind, Wharton & Garrison LLP
1285 Avenue of the Americas
New York, NY 10019-6064

Attention: John M. Scott, Esq., Brian P. Finnegan, Esq. and Ross A. Fieldston, Esq.
Electronic mail: jscott@paulweiss.com, bfinnegan@paulweiss.com and rfieldston@paulweiss.com

(b) If to the Holder:

Athene Holding Ltd.
Chesney House
96 Pitts Bay Road
Pembroke HM 08
Bermuda
Attention: Natasha Scotland Courcy
E-mail: NCourcy@athene.bm

with a copy (which shall not constitute notice) to:

Sidley Austin LLP
One South Dearborn Street
Chicago, IL 60603
United States of America
Attention: Perry J. Shwachman; Samir A. Gandhi; Jeremy Watson
E-mail: pshwachman@sidley.com; sgandhi@sidley.com; jcwatson@sidley.com

SECTION 3.3 FURTHER ACTION.

The parties shall execute and deliver all documents, provide all information and take or refrain from taking action as may be necessary or appropriate to achieve the purposes of this Agreement.

SECTION 3.4 BINDING EFFECT.

(a) This Agreement shall be binding upon and inure to the benefit of all of the parties and, to the extent permitted by this Agreement, their successors, executors, administrators, heirs, legal representatives and assigns.

(b) The Holder shall not transfer AOG Units to any Person, who is not a party to this Agreement without first obtaining an agreement from such Person to be a party to this Agreement; provided that the foregoing condition shall not apply to a Purchase Transaction, transfers of AOG Units to the Purchaser or any of its subsidiaries or to any Apollo Principal Entities or an AOG Transaction.

SECTION 3.5 SEVERABILITY.

If any term or other provision of this Agreement is held to be invalid, illegal or incapable of being enforced by any rule of law, or public policy, all other conditions and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic or legal substance of the transactions is not affected in any manner materially adverse to any party. Upon a determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in a mutually acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the fullest extent possible.

SECTION 3.6 INTERACTION.

This Agreement constitutes the entire agreement among the parties hereto pertaining to the subject matter hereof and supersedes all prior agreements and understandings pertaining thereto.

SECTION 3.7 WAIVER.

No failure by any party to insist upon the strict performance of any covenant, duty, agreement or condition of this Agreement or to exercise any right or remedy consequent upon a breach thereof shall constitute waiver of any such breach of any other covenant, duty, agreement or condition.

SECTION 3.8 SUBMISSION TO JURISDICTION: WAIVER OF JURY TRIAL.

(a) Any and all disputes which cannot be settled amicably, including any ancillary claims of any party, arising out of, relating to or in connection with the validity, negotiation, execution, interpretation, performance or non-performance of this Agreement (including the validity, scope and enforceability of this arbitration provision) shall be finally settled by arbitration conducted by a single arbitrator in New York in accordance with the then-existing Rules of Arbitration of the International Chamber of Commerce. If the parties to the dispute fail to agree on the selection of an arbitrator within thirty (30) days of the receipt of the request for arbitration, the International Chamber of Commerce shall make the appointment. The arbitrator shall be a lawyer and shall conduct the proceedings in the English language. Performance under this Agreement shall continue if reasonably possible during any arbitration proceedings.

(b) Notwithstanding the provisions of paragraph (a), the Purchaser may bring an action or special proceeding in any court of competent jurisdiction for the purpose of compelling a party to arbitrate, seeking temporary or preliminary relief in aid of an arbitration hereunder, and/or enforcing an arbitration award and, for the purposes of this paragraph (b), the Holder (i) expressly consents to the application of paragraph (c) of this Section 3.8 to any such action or proceeding, (ii) agrees that proof shall not be required that monetary damages for breach of the provisions of this Agreement would be difficult to calculate and that remedies at law would be inadequate, and (iii) irrevocably appoints the Purchaser as the Holder's agents for service of process in connection with any such action or proceeding and agrees that service of process upon such agent, who shall promptly advise the Holder of any such service of process, shall be deemed in every respect effective service of process upon the Holder in any such action or proceeding.

(c) (i) EACH PARTY TO THIS AGREEMENT HEREBY IRREVOCABLY SUBMITS TO THE JURISDICTION OF COURTS LOCATED IN NEW YORK, NEW YORK FOR THE PURPOSE OF ANY JUDICIAL PROCEEDING BROUGHT IN ACCORDANCE WITH THE PROVISIONS OF THIS SECTION 3.8, OR ANY JUDICIAL PROCEEDING ANCILLARY TO

AN ARBITRATION OR CONTEMPLATED ARBITRATION ARISING OUT OF OR RELATING TO OR CONCERNING THIS AGREEMENT. Such ancillary judicial proceedings include any suit, action or proceeding to compel arbitration, to obtain temporary or preliminary judicial relief in aid of arbitration, or to confirm an arbitration award. The parties acknowledge that the forum designated by this paragraph (c) has a reasonable relation to this Agreement, and to the parties' relationship with one another.

(ii) The parties hereby waive, to the fullest extent permitted by applicable law, any objection which they now or hereafter may have to personal jurisdiction or to the laying of venue of any such ancillary suit, action or proceeding brought in any court referred to in the preceding paragraph of this Section 3.8 and such parties agree not to plead or claim the same.

(d) Notwithstanding any provision of this Agreement to the contrary, this Section 3.8 shall be construed to the maximum extent possible to comply with the laws of the State of Delaware, including the Delaware Uniform Arbitration Act (10 Del. C. § 5701 et seq.) (the "Delaware Arbitration Act"). If, nevertheless, it shall be determined by a court of competent jurisdiction that any provision or wording of this Section 3.8, including any rules of the International Chamber of Commerce, shall be invalid or unenforceable under the Delaware Arbitration Act, or other applicable law, such invalidity shall not invalidate all of this Section 3.8. In that case, this Section 3.8 shall be construed so as to limit any term or provision so as to make it valid or enforceable within the requirements of the Delaware Arbitration Act or other applicable law, and, in the event such term or provision cannot be so limited, this Section 3.8 shall be construed to omit such invalid or unenforceable provision.

SECTION 3.9 COUNTERPARTS.

This Agreement may be executed and delivered (including by facsimile transmission) in one or more counterparts, and by the different parties hereto in separate counterparts, each of which when executed and delivered shall be deemed to be an original but all of which taken together shall constitute one and the same agreement. Copies of executed counterparts transmitted by telecopy or other electronic transmission service shall be considered original executed counterparts for purposes of this Section 3.9.

SECTION 3.10 TAX TREATMENT.

To the extent this Agreement imposes obligations upon a particular Apollo Principal Entity, this Agreement shall be treated as part of the relevant Apollo Principal Entity Agreement as described in Section 761(c) of the Code and Sections 1.704-1(b)(2)(ii)(h) and 1.761-1(c) of the Treasury Regulations. The parties shall report any Sale Transaction consummated hereunder as a taxable sale to the Purchaser of AOG Units by the Holder. No party shall take a contrary position on any income tax return, amendment thereof or communication with a taxing authority unless otherwise required by applicable law.

SECTION 3.11 APPLICABLE LAW.

THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF DELAWARE (WITHOUT GIVING EFFECT TO CONFLICT OF LAWS PRINCIPLES THEREOF).

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered, all as of the date first set forth above.

APOLLO GLOBAL MANAGEMENT, INC.

By: /s/ John J. Suydam

John J. Suydam

Title: Chief Legal Officer, Vice President and Secretary

ATHENE HOLDING, LTD.

By: /s/ Adam Laing

Adam Laing

Title: SVP, Finance

EXHIBIT A

FORM OF

NOTICE OF INTENT

Apollo Global Management, Inc.

9 West 57th Street

New York, NY 10019

Attention: John J. Suydam

Fax: (212) 515-3251

Electronic Mail: jsuydam@apollo.com

Reference is hereby made to the Liquidity Agreement, dated as of February 28, 2020 (the "Liquidity Agreement"), among Apollo Global Management, Inc. and Athene Holding Ltd., as amended or amended and restated from time to time, in accordance with its terms. Capitalized terms used but not defined herein shall have the respective meanings given to them in the Liquidity Agreement.

The undersigned Holder intends to sell AOG Units to the Purchaser pursuant to the terms of the Liquidity Agreement, as set forth below.

Legal Name of Holder:	[ ]
Address:	[ ]
Date of this Notice:	[ ]
Estimate of the Number of AOG Units Intended to be Sold:	[ ]

The undersigned acknowledges that the sale of AOG Units shall be subject to the terms and conditions of the Liquidity Agreement.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Notice of Intent to be executed and delivered by the undersigned or by its duly authorized attorney.

Name: ______________________________________

Dated: ______________________________________

EXHIBIT B

FORM OF

NOTICE OF SALE

Apollo Global Management, Inc.

9 West 57th Street

New York, NY 10019

Attention: John J. Suydam

Fax: (212) 515-3251

Electronic Mail: jsuydam@apollo.com

Reference is hereby made to the Liquidity Agreement, dated as of February 28, 2020 (the "Liquidity Agreement"), among Apollo Global Management, Inc. and Athene Holding Ltd., as amended or amended and restated from time to time, in accordance with its terms. Capitalized terms used but not defined herein shall have the respective meanings given to them in the Liquidity Agreement.

Reference is hereby also made to the Notice of Intent, dated as of [_], previously delivered by the Holder to the Purchaser pursuant to the terms of the Liquidity Agreement.

The undersigned Holder desires to sell the number of AOG Units set forth below to be issued in its name as set forth below:

Legal Name of Holder:	[ ]
Address:	[ ]
Wire Information:	[ ]
Number of AOG Units to be sold:	[ ]
Minimum Sale Price for AOG Units to be sold:	[ ]

The undersigned acknowledges that the number of AOG Units to be sold pursuant to this notice shall be equal to the lesser of (x) the number of AOG Units set forth above, and (y) the number of AOG Units that the undersigned is permitted to sell taking into account any subsequent revocation permitted by Section 2.2(b) of the Liquidity Agreement and any limitations imposed pursuant to Article II of the Liquidity Agreement.

The undersigned (1) hereby represents that the AOG Units set forth above are beneficially owned by the undersigned, (2) hereby agrees to sell such AOG Units at the Minimum Sale Price as set forth in the Liquidity Agreement, and (3) hereby irrevocably constitutes and appoints any officer of the Apollo Principal Entities, APO LLC, APO FC, APO FC II, APO FC III, APO UK, APO Corp., or the Purchaser as its attorney, with full power of substitution, to sell on behalf of such Holder such AOG Units on the books and records of the Apollo Principal Entities at the Minimum Sale Price.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Notice of Sale to be executed and delivered by the undersigned or by its duly authorized attorney.

Name:

Dated:

EXHIBIT C

Prohibited Transferees

1. Highland Capital Management, L.P.
2. Icahn & Co. Inc / High River LP
3. Aurelius Capital Management
4. Elliott Management
5. Cyrus Capital Partners, LP
6. Appaloosa Management L.P.
7. Oaktree Capital Management, L.P.
8. Any actually known or reasonably identifiable affiliate (reasonably identifiable by their name) of, and, if applicable, any actually known or reasonably identifiable fund or other entity managed by (in the case of such fund or such other entity, reasonably identifiable by their name), any of the entities listed above.

Exhibit 10.4

THIRD AMENDMENT TO SHAREHOLDERS AGREEMENT

This THIRD AMENDMENT TO SHAREHOLDERS AGREEMENT (this "Amendment"), effective as of February 13, 2020 (the "Third Amendment Effective Date"), is made by and among Athene Co-Invest Reinsurance Affiliate 1A Ltd., a Bermuda Class C insurer ("ACRA"), ADIP Holdings (A), L.P., a Cayman Islands limited partnership ("ADIP A"), ADIP Holdings (B), L.P., a Cayman Islands limited partnership ("ADIP B"), ADIP Holdings (C), L.P., a Cayman Islands limited partnership ("ADIP C"), ADIP Holdings (D), L.P., a Cayman Islands limited partnership ("ADIP D"), ADIP Holdings (E), L.P., a Cayman Islands limited partnership ("ADIP E") and ADIP Holdings (Lux), L.P., a Cayman Islands limited partnership ("ADIP Lux" and, together with ADIP A, ADIP B, ADIP C, ADIP D and ADIP E, the "Co- Investors" and each, a "Co-Investor") and Athene Life Re Ltd., a reinsurance company organized under the laws of Bermuda ("ALRe" and, together with the Co-Investors, the "Shareholders"). ACRA, the Co-Investors and ALRe are the "Parties" and each a "Party" to this Amendment.

WITNESSETH:

WHEREAS, the Parties are parties to that certain Shareholders Agreement effective as of October 1, 2019 (the "Shareholders Agreement"), as amended pursuant to that certain First Amendment to the Shareholders Agreement, effective as of October 25, 2019, and that certain Second Amendment to the Shareholders Agreement, effective as of December 4, 2019;

WHEREAS, the Parties desire to amend the Shareholders Agreement as provided herein; and

WHEREAS, pursuant to Section 4.5 of the Shareholders Agreement, the Shareholders Agreement may be amended by a written instrument duly executed by the proper officers of each party to the Shareholders Agreement.

NOW, THEREFORE, in consideration of the covenants and agreements contained herein, the Parties hereby agree as follows:

1. Definitions. Capitalized terms used but not otherwise defined in this Amendment shall have the respective meanings ascribed to such terms in the Shareholders Agreement.

2. Amendment.

(a) From and after the Third Amendment Effective Date, Section 2.2(b) of the Shareholders Agreement is hereby amended and restated in its entirety to read as follows:

> "(b) The capital stock of each New ACRA Investment Entity shall be divided into and shall consist of the New ACRA Investment Entity Class A Common Shares, which will be held in each case by the Co-Investors, and the New ACRA Investment Entity Class B Common Shares, which will be held in each case by ALRe. Subject to the applicable Bye-laws and Section 2.3, the New ACRA Investment Entity Class B Common Shares of each New ACRA Investment Entity will hold one hundred percent (100%) of the Total Voting Power of the applicable New ACRA Investment Entity. The New ACRA Investment Entity Class A Common Shares shall, in the aggregate, constitute sixty-seven percent (67%) (or such other percentage as determined in accordance with Section 3.11(b)) of the capital stock of each New ACRA Investment Entity, and the New ACRA Investment Entity Class B Common Shares shall, in the aggregate, constitute thirty-three percent (33%) (or such other percentage as determined in accordance with Section 3.11(b)) of the capital stock of each New ACRA Investment Entity, unless otherwise agreed to by ALRe and ACRA."

(b) From and after the Third Amendment Effective Date, Section 3.11(b) of the Shareholders Agreement is hereby amended and restated in its entirety to read as follows:

"(b) Issuance of Additional Shares to ALRe.

> (i) Notwithstanding anything to the contrary herein, if at any time ACRA (or any other relevant ACRA Investment Entity) determines, in its sole discretion, that the ownership or anticipated ownership of Shares by any Co-Investor could cause ACRA (or such other relevant ACRA Investment Entity) to fail to qualify for the benefits of the Treaty at any time while this Agreement is in effect, the parties hereto agree that ALRe will be permitted to purchase from each applicable ACRA Investment Entity, and each applicable ACRA Investment Entity will be required to issue and sell new Shares to ALRe (such Shares, the "True-up Shares" and the date ALRe purchases such Shares, the "True-up Date"), in such amount as ACRA determines, in its sole discretion, is necessary or appropriate to ensure that, following the consummation of such purchase, sale and issuance, ACRA (and each other relevant ACRA Investment Entity) will qualify for the benefits of the Treaty.

(ii) The purchase, sale and issuance of the True-up Shares shall be made at the initial purchase price paid by the Co-Investors for the Shares, *minus* the amount of any dividends paid by ACRA to the Shareholders prior to the True-up Date, *plus* the amount of any capital contributions made by the Shareholders to ACRA prior to the True-up Date, *plus* a cost of carry equal to six percent (6%) (compounded annually) calculated from the Closing Date, unless there has been a material change or significant event relating to an ACRA Investment Entity that would, in the sole discretion of ACRA, render it more appropriate to ascribe a different valuation to the cost of carry (the amount paid per True-up Share, the "True-up Share Price").

(iii) Notwithstanding anything to the contrary herein, if at any time following an issuance of True-up Shares pursuant to Section 3.11(b)(i) ACRA (or any other relevant ACRA Investment Entity) determines, in its sole discretion, that the issuance of True-up Shares exceeded the minimum amount of Shares necessary or appropriate to ensure that ACRA (and each other relevant ACRA Investment Entity) qualifies for the benefits of the Treaty, then the parties hereto agree that ACRA and each applicable ACRA Investment Entity will be required to redeem and purchase from ALRe, and ALRe will be required to return and sell to ACRA and each applicable ACRA Investment Entity a number of True-up Shares (such redeemed True-up Shares, the "Redemption Shares," and each date that ACRA redeems such True-up Shares, a "Redemption Date") as ACRA determines, in its sole discretion, is necessary or appropriate to reduce ALRe's economic ownership to as close to, but not less than, thirty-three percent (33%) as possible without causing ACRA (or any other relevant ACRA Investment Entity) to fail (either as of the Redemption Date or any other future date) to qualify for the benefits of the Treaty.

(iv) The purchase, sale and issuance of the Redemption Shares shall be made at the True-up Share Price, *minus* the amount of any dividends paid by ACRA to the Shareholders prior to the applicable Redemption Date, *plus* the amount of any capital contributions made by the Shareholders to ACRA prior to the applicable Redemption Date, *plus* a cost of carry equal to six percent (6%) (compounded annually) calculated from the True-up Date, unless there has been a material change or significant event relating to an ACRA Investment Entity that would, in the mutual agreement of ACRA and ALRe, render it more appropriate to ascribe a different valuation to the cost of carry.

(v) ACRA shall deliver notice to the Co-Investors and ALRe of any purchase, sale, issuance or redemption of Shares it determines is necessary or appropriate under this Section 3.11(b). Upon any issuance or redemption pursuant to this Section 3.11(b), each applicable ACRA Investment Entity shall update Schedule A-1 and Schedule A-2, and shall make any necessary updates to the applicable register of Shareholders pursuant to the applicable Bye-laws. In addition, the Parties acknowledge and agree that Exhibit A-1 to the Athene Subscription Agreement shall automatically be amended and restated to reflect any adjustments next to ALRe's name as contemplated by this Section 3.11(b).

(vi) The specific timing of any purchase, sale, issuance or redemption made pursuant to this Section 3.11(b) shall be determined by ACRA in its sole discretion."

(c) From and after the Third Amendment Effective Date, the definition of "Excluded Securities" is hereby amended and restated in its entirety to read as follows:

" "Excluded Securities" means (i) Equity Securities issued in respect of or in exchange for all Shares on a pro rata basis by way of a dividend, distribution, share split, reverse share split, merger, consolidation, reorganization, recapitalization or similar transaction, (ii) Equity Securities issued upon exercise, conversion or exchange of any options, warrants, rights or other convertible securities outstanding as of the date hereof or issued after the date hereof in accordance with the terms of this Agreement or the Organizational Documents, (iii) Equity Securities issued to a third party financing source (which is not a Class B Shareholder or an Affiliate of a Class B Shareholder, or an Affiliate of an ACRA Investment Entity) in connection with a debt financing of any ACRA Investment Entity and/or any of their respective Subsidiaries, (iv) Equity Securities issued to ceding companies or other insurance companies in connection with any reinsurance agreements, (v) Equity Securities issued to a seller or sellers of a business or the assets thereof (which is not a member of the Apollo Group or the Athene Group) or issued to any other un-Affiliated Persons, in each case, in connection with any ACRA Investment Entity's (or any of their respective Affiliates') acquisition of such seller's or sellers' business or the assets thereof, whether such acquisition is in the form of a merger, consolidation, asset purchase or other similar business combination, (vi) Equity

Securities issued or distributed in connection with a transaction permitted under Section 3.5 or Section 3.11(b)(i), (vii) Equity Securities issued at any time to directors, officers, employees or consultants of any ACRA Investment Entity or AAM pursuant to an ACRA Board-approved option or incentive plan of any ACRA Investment Entity or AAM and (viii) any Equity Securities issued to a Shareholder in connection with the funding in full of a capital call of such Shareholder related to an outstanding Commitment; provided, that in the case of clauses (i) through (vi), if and only to the extent such issuances or distributions are approved by the applicable ACRA Board."

3. Miscellaneous.

(a) Full Force and Effect. Except as expressly modified by this Amendment, all of the terms, covenants, agreements, conditions and other provisions of the Shareholders Agreement shall remain in full force and effect in accordance with their respective terms and are hereby ratified or confirmed. This Amendment shall not constitute an amendment or waiver of any provision of the Shareholders Agreement except as expressly set forth herein. Upon the execution and delivery hereof, the Shareholders Agreement shall thereupon be deemed to be amended and supplemented as hereinabove set forth as fully and with the same effect as if the amendments and supplements made hereby were originally set forth in the Shareholders Agreement, and this Amendment and the Shareholders Agreement shall henceforth be read, taken and construed as one and the same instrument, but such amendments and supplements shall not operate so as to render invalid or improper any action heretofore taken under the Shareholders Agreement. As used in the Shareholders Agreement, the terms "this Agreement," "herein," "hereinafter," "hereto," and words of similar import shall mean and refer to, from and after the Third Amendment Effective Date, unless the context requires otherwise, the Shareholders Agreement as amended by this Amendment.

(b) Counterparts. This Amendment may be executed in any number of counterparts, all of which taken together shall constitute one agreement, and any of the parties hereto may execute this Amendment by signing any such counterpart. Delivery of an electronic copy of an executed counterpart of a signature page to this Amendment by email or facsimile shall be as effective as delivery of a manually executed counterpart of this Amendment.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed effective as of the Third Amendment Effective Date.

ATHENE CO-INVEST REINSURANCE AFFILIATE 1A LTD.

By: /s/ Adam Laing

Name: Adam Laing

Title: Chief Financial Officer

ADIP HOLDINGS (A), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ADIP HOLDINGS (B), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ADIP HOLDINGS (C), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ADIP HOLDINGS (D), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ADIP HOLDINGS (E), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ADIP HOLDINGS (LUX), L.P.

By: Apollo ADIP Advisors, L.P., its general partner

By: Apollo ADIP Capital Management, LLC, its general partner

By: APH Holdings, L.P., its sole member

By: Apollo Principal Holdings III GP, Ltd., its general partner

By: /s/ Joseph D. Glatt

Name: Joseph D. Glatt

Title: Vice President

ATHENE LIFE RE LTD.

By: /s/ Brad Molitor

Name: Brad Molitor

Title: Chief Actuary

Exhibit 31.1

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY OF 2002

I, James R. Belardi, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Athene Holding Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 8, 2020

/s/ James R. Belardi

James R. Belardi

Chairman, Chief Executive Officer and Chief Investment Officer

(principal executive officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY OF 2002

I, Martin P. Klein, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Athene Holding Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 8, 2020

/s/ Martin P. Klein

Martin P. Klein

Executive Vice President and Chief Financial Officer

(principal financial officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY OF 2002

I, James R. Belardi, certify that Athene Holding Ltd.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Athene Holding Ltd.

Date: May 8, 2020	/s/ James R. Belardi
	James R. Belardi
	Chairman, Chief Executive Officer and Chief Investment Officer
	(principal executive officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.

Exhibit 32.2

CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY OF 2002

I, Martin P. Klein, certify that Athene Holding Ltd.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Athene Holding Ltd.

Date: May 8, 2020	/s/ Martin P. Klein
	Martin P. Klein
	Executive Vice President and Chief Financial Officer
	(principal financial officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.