ATHENE

Driven to do more®

A Decade of Difference

Athene Holding Ltd.

Annual Report 2019

Forward-Looking Statements

This letter may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These statements include, but are not limited to, expected future operating results; liquidity and capital resources; inorganic growth opportunities; the effects of the spread of the COVID-19 virus on economic conditions and the financial markets and the resulting effects on Athene's investment portfolio and price of its common shares; expected future share repurchase activity and the other non-historical statements. These forward-looking statements are based on management's beliefs, as well as assumptions made by, and information currently available to, management. When used in this letter, the words "believe," "anticipate," "estimate," "expect," "intend," "may," "will," "should," "seek," "plan" and similar expressions are intended to identify forward-looking statements. Although management believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that these expectations will prove to be correct. These statements are subject to certain risks, uncertainties and assumptions. For a discussion of the risks and uncertainties related to Athene's forward-looking statements, see its annual report on Form 10-K for the year ended December 31, 2019, its current report on Form 8-K filed on March 31, 2020 and its other SEC filings, which can be found at the SEC's website www.sec.gov. Due to these various risks, uncertainties and assumptions, actual events or results or Athene's actual performance may differ materially from that reflected or contemplated in such forward-looking statements. Athene undertakes no obligation to publicly update or review any forward-looking statements, whether as a result of new information, future developments or otherwise.

Jim Belardi,
Chairman and CEO

To Our Shareholders:

April 15, 2020

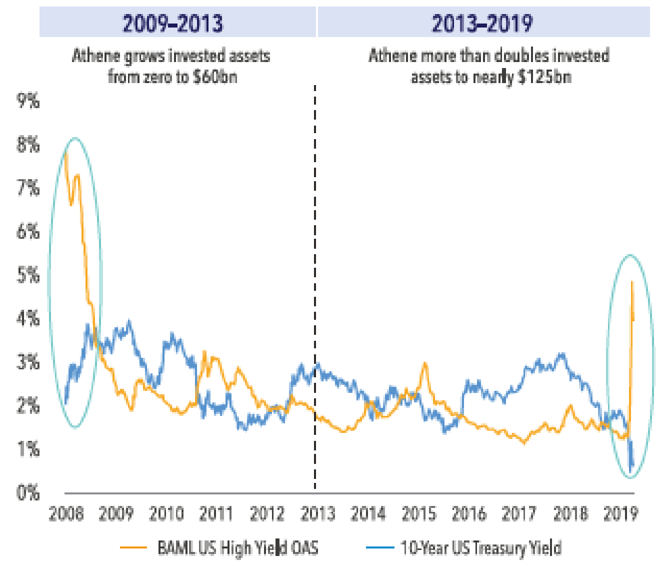
I am pleased to write my third annual shareholder letter since we went public and continue this important line of communication. As I begin this letter, over 90% of Americans are subject to stay-at-home orders, the economy has essentially been shuttered, and unemployment claims have jumped to levels not seen since the Great Depression. We are living in unprecedented times. Yet, while much of what is going on in the overall economy is unnerving, and while it is unknown how deeply this recession will cut, I remain confident about Athene's position of strength. Every day, I wake up proud to be the CEO of a large, investment grade financial services company with significant excess capital. Having capital in times of stress is extremely important and often determines which companies grow through dislocation and which ones face tremendous uncertainty. The proactive stress planning we consistently do, in good times and in bad, has paid dividends during this correction. I am confident Athene will emerge from this crisis better positioned than we entered.

We founded Athene in the wake of the 2009 financial crisis, and last year marked our 10-year anniversary as a company. Our first decade of business occurred during a period of unrivaled economic stability, when we were able to go on offense with a start-up platform rather than grappling with legacy pre-crisis issues.

We made the most of this environment, scaling to nearly $125 billion of invested assets, and growing adjusted book value per common share at a 17% rate annually. Yet, our performance, while industry leading, left a lingering question in the minds of many. How would Athene fare during a correction? Now, living through the steepest economic contraction in a century, I want to answer that question.

On March 25, 2020, we hosted a special investor update conference call that was well received. During that presentation, I explained that while each correction I have faced in my 35+ year career in the industry has been different, my playbook for volatile market environments has always been founded on the same core tenets.

Significant Market Dislocation Sets the Stage for Athene to Flourish



Invested assets refers to gross invested assets, which includes Athene's net invested assets, as well as the proportionate share of ACRA investments associated with the noncontrolling interest.

First, protect your most valuable assets. For Athene, that's our people and our policyholders. We were an early adopter of a largely remote-work model, and we were able to transition

Jim Belardi, Chairman and CEO of Athene Holding, and Grant Kvalheim, President and CEO of Athene USA, raise the Athene flag at its West Des Moines, Iowa, headquarters to celebrate the close of Athene's landmark acquisition of Aviva USA in 2013.

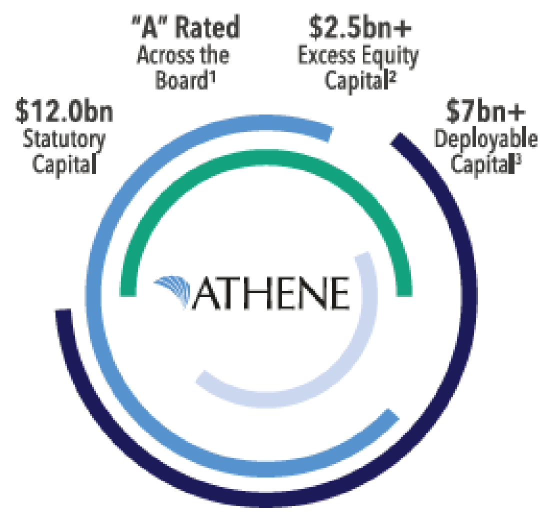
without a hitch. Our operations centers remained fully functional, and we continued to serve the hundreds of thousands of Americans who rely on us for their retirement needs. In fact, we actually ramped production, which is a testament to the spirit of Athene's workforce.

Second, focus on liquidity. It is the lifeblood of any business, and a necessity to play defense and offense in today's market. Consistent with our ability to remain nimble, we targeted building $10 billion of available liquidity, and we expect to meet that target within the next two months.

Third, analyze the existing investment portfolio. We evaluate our portfolio in the context of two historical bookends: a moderate recession and a deep recession, akin to the Great Financial Crisis of 2008-2009. While no one knows how this current correction will evolve, I believe these risk scenarios to be reasonable bookends. As we have disclosed, the net losses[1] we could incur under these bookends, before including the benefits of management actions, equates to less than one year of normal-course earnings in a moderate recession and between one to two years of earnings in a deep recession. In the context of our significant base of approximately $2.5 billion[2] of excess equity capital, the net capital impact we could incur would be fully absorbed in each scenario – equating to approximately 40% of our excess equity capital base in a moderate recession and 80% under a deep recession. In other words, while losses are to be expected, it is also reasonable to expect that these losses will be manageable for Athene given our strong earnings power and capitalization.

1 *Refers to expected other than temporary impairment (OTTI) estimates.*
2 *Pro forma for $500 million senior unsecured notes offering announced on March 31, 2020.*

Athene is Well Prepared to Take Advantage



1 *Relates to Athene's primary insurance subsidiaries; represents ratings from AM Best, S&P, and Fitch.*
2 *As of December 31, 2019, pro forma for mark-to-market valuation on Apollo Operating Group (AOG) units as of March 23, 2020, 1Q'20 share repurchase activity through March 23, 2020, as well as $500 million senior unsecured notes offering announced on March 31, 2020.*
3 *Includes pro forma excess equity capital of ~ $2.5bn, untapped debt capacity of $2bn pro forma for repayment of $475mn of short-term FHLB financing in 1H'20 and $500 million notes offering announced on March 31, 2020, and $2.6bn of undrawn third-party ACRA/ADIP capacity. Untapped debt capacity assumes capacity of 25% debt to capitalization and is subject to general availability and market conditions.*

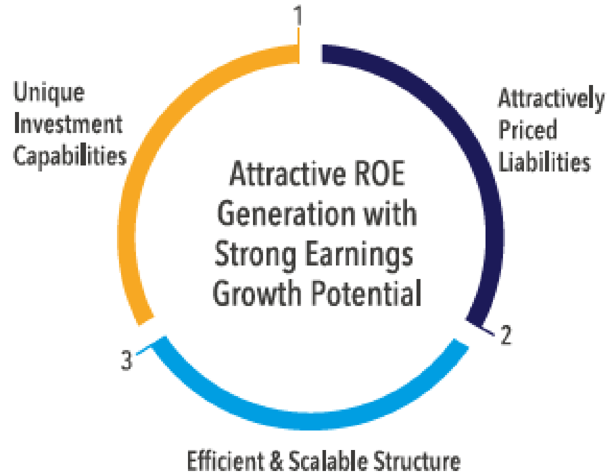
Ultimately, I believe our performance will reflect our credit-first philosophy at Athene. In the low-rate, low-spread environment of the past decade, we have not stretched for yield by investing down the credit spectrum. Instead, we have prioritized risks that are more appropriate for our business model – liquidity and complexity risk. We have aimed to create yield through less liquidity, rather than credit risk, insisting on structural protections and substantial credit enhancement, rather than owning the obligations of underlying issuers outright. In terms of allocation, this means we are definitionally underweight direct holdings of high-yield securities and bank loans. We should have fewer impairments than others who have invested directly in subordinated bonds in the search for yield. However, it also means that we should expect increased mark-to-market volatility in certain less liquid asset classes as forced sellers of these assets enter the market.

After protecting our people and ensuring continuity of service to policyholders, building liquidity, and analyzing the existing portfolio, the fourth step is to play offense. It is fitting that market dislocation is book-ending Athene's first decade. The Great Financial Crisis of 2008-2009 created the backdrop for an entrepreneurial company with a differentiated business model to establish its roots and thrive in the years that followed. Similar circumstances unfolding in the current environment underpin our expectation that profitable growth at a wide net investment spread should once again follow this period of significant volatility. As we have noted before, the insurance industry has estimated its future obligations using a set of optimistic macro assumptions. If the current crisis is prolonged, these assumptions will slip further and further out of reach, so I believe we will see many companies looking to shed liabilities that we, and our long-term strategic partner Apollo or related affiliates, may find attractive to acquire. With over $7 billion of deployable capital, an under-levered balance sheet, and a stockpile of liquidity, we are very well-positioned to execute on our strategy. At this time next year, I expect to be writing about the significant value generation we were able to achieve.

Athene's Differentiated Business Model has Several Fundamental Advantages

One of the reasons I am confident that Athene will emerge from the current crisis in a position of strength lies in the fundamental advantages that are embedded in our differentiated business model. Despite the substantial growth of our business over the last decade, our simple, spread-based business model has remained constant. At its core, we drive profitability by generating attractive net investment spread through a combination of asset outperformance, disciplined liability underwriting, and our efficient and scalable structure. This has driven our sustained, mid-teens ROE generation since inception.

Differentiated Business Model Drives Value in Three Phases



On the asset side, our key advantage is the ability to consistently generate superior risk-adjusted net investment returns by working with Apollo. This helps us generate a higher spread than others, resulting in more profitability for shareholders.

In 2019, we invested more than $32 billion for the year, a record level, while generating a yield on our fixed income purchases that was approximately 35 basis points higher than the BBB corporate index despite a mixed interest rate environment. Even while investing a record level of flows, we maintained our discipline around credit quality. At year-end, 94% of our available for sale fixed

Jim Belardi provides a company update at an employee town hall meeting in West Des Moines to recognize Athene's acquisition of Aviva USA in 2013.

maturity portfolio was designated NAIC 1 or 2, in line with the life insurance industry. Outside the NAIC purview, we hold high-quality first lien commercial mortgages, 97% of which have comparable investment grade designations, as well as residential mortgages which are virtually all "in good standing." Additionally, we have significant credit enhancement in our structured product portfolio, and we employ a differentiated Alternatives strategy that has a defensive orientation that is less prone to binary outcomes.

As a reminder, our focus is on avoiding loss of principal, not mark-to-market noise. Generally, Athene can hold investments to maturity and is not a forced seller. We re-underwrite our portfolio periodically and feel very comfortable with where our portfolio is today. As we've disclosed, even under deep stress scenarios akin to the great financial crisis of 2008-2009, we anticipate our structured products including CLOs, residential mortgage-backed securities (RMBS), and commercial mortgage loans (CML) to continue generating a positive return after incorporating manageable expected losses.

One of the key long-term initiatives at Athene is working with Apollo to build out senior secured direct origination capabilities. We see alpha-generating opportunities across a variety of asset classes that generate attractive investment spreads without assuming incremental credit risk, including US residential and commercial mortgage loans, non-US residential loans, and franchisee loans, among others. We invested nearly $3.5 billion in directly originated senior secured assets in 2019, including the acquisition of an aviation lending portfolio, PK AirFinance, from GE Capital, which is expected to generate yields in excess of comparable investment grade corporate bonds, with significant credit enhancement. We own PK AirFinance at a mid-50s loan-to-value on the underlying metal value of the aircraft. While this does not guarantee lack of loss, it does reflect why we like the direct origination strategy: better return for better risk. We are confident this important initiative to continue building out direct origination capabilities will generate significant shareholder value for years to come.

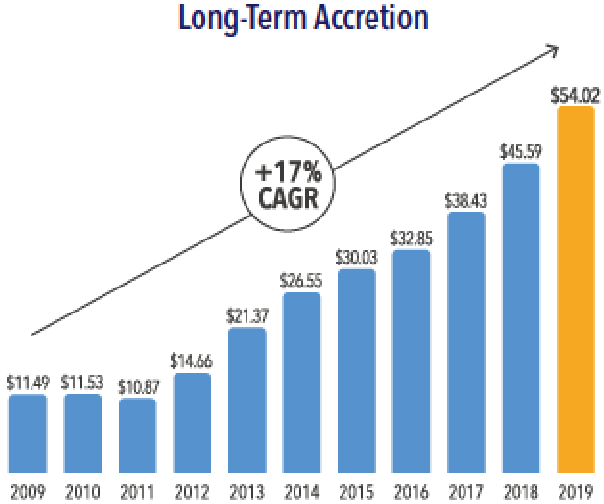
Our prudent and disciplined approach to underwriting liabilities and balance sheet management is one of Athene's key differentiators. As you know, we have one of the cleanest balance sheets in the industry with no legacy issues. We believe we operate with some of the most conservative reserving assumptions in the industry. For example, Athene's long-term net investment earned rate assumption underpinning liability reserves is consistent with a long-term 10-year Treasury rate that we believe is approximately 100 basis points lower than the industry average, consistent with the prudent approach we take across all areas of the business. In addition, only about 20% of our liability base is comprised of fully guaranteed riders, for which we hold significant reserves.

Lastly, our efficient and scalable structure plays a key role in our ability to drive superior returns as the low-cost provider. The efficiencies of scale inherent in our operations allow us to onboard incremental business at a low cost and translate most of our incremental spread-based earnings into bottom line profitability.

2019 Was a Memorable Capstone on our First Decade

2019 was a record year of performance for Athene, marking the completion of a "decade of difference" – our theme for this year's annual report. Supported by a best-in-class business model, we generated record annual adjusted operating income of nearly $1.3 billion or $6.97 per share. This translated to a strong return on adjusted equity exceeding 14% on a consolidated basis and 17% for the Retirement Services segment, achieving our target of at least mid-teens returns despite a historically low interest rate backdrop. We also grew our adjusted book value to a new high of $54 per common share, representing 18% growth year-over-year. As many of you know, Athene has outperformed by a wide margin over the past decade, producing compound growth in adjusted book value per common share of 17%, a remarkable achievement which is approximately triple the amount of book value appreciation generated by other life insurance companies over the same timeframe.

Significant Growth in Adjusted Book Value Per Common Share Reflects Desire for Long-Term Accretion



While 2019 was a banner year and record adjusted operating earnings headlined our financial performance, in many respects, several other accomplishments during the year prepared us for the environment at hand. For example, what may be less appreciated are the various ways in which we strengthened our capital position.

Andrew Walters from our Sales team and Janie Borror from Marketing discuss programming to meet the needs of our distribution partners.

Early in 2019 we structured a new strategic capital solution (named "Athene Co-Investment Reinsurance Affiliate" or "ACRA") that allows us to have capital on-demand to augment our standalone deployment capacity without diluting the earnings power of Athene. Apollo and Athene leveraged the breadth and depth of our global relationships to raise more than $3 billion of fully-committed third-party capital – the largest pool of sidecar capital in the insurance industry.

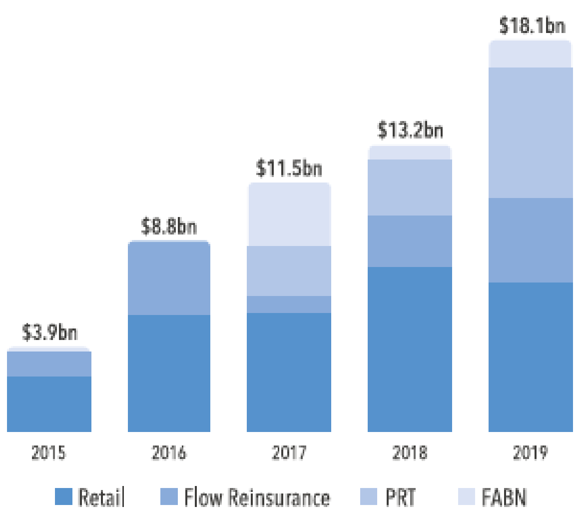
Then, in June and September, we opportunistically raised a total of $1.2 billion of perpetual preferred equity capital in two separate offerings with a low weighted average cost of approximately 6%. Further, in December, we worked with several banks to extend and enlarge our revolving credit facility, which remains undrawn, to further bolster potential liquidity resources.

Looking back, all these initiatives to proactively strengthen our capital position and relative flexibility proved to be prescient given the environment we're experiencing now. As of mid-April, we had "A" financial strength ratings across the board with a stable outlook, $12 billion of statutory capital, more than $6 billion of available liquidity, and more than $7 billion of deployable capital.

Athene executives, board members, and guests outside the New York Stock Exchange on the day of the company's December 2016 initial public offering.

Turning to our growth engines, Athene's organic business channels generated record gross deposits of over $18 billion in 2019, underwritten to very attractive, above-average returns. The strength of our multi-channel distribution model manifested itself, as softness in Retail sales driven by lower interest rates was more than offset by record deposits in our pension risk transfer and reinsurance channels, complemented by re-emerging funding agreement issuance in the back half of the year.

Record Organic Deposit Activity in 2019



Gross deposits include all deposits sourced by Athene, including all of the deposits reinsured to ACRA.

In our Retail business, we generated nearly $7 billion of deposits in 2019, which declined approximately 10% compared to peak levels in 2018, reflecting our disciplined approach to pricing in a challenging interest rate environment. Our sales activity during the year was underwritten to returns consistent with our mid-teens targets. This meant that sales of our multi-year guaranteed annuity (MYGA) product dried up as we were unable to underwrite them profitably while other market participants were willing to sacrifice returns. However, our core fixed-index annuity (FIA) products continued to perform well and generated a level of volume only modestly below 2018. While the environment remains generally challenging reflecting low interest rates and increasing competition, we have seen a notable increase in demand amid the pickup in market volatility as consumers seek safer investment products with principal protection features. As such, we remain confident in the strength and resilience of our Retail business and expect to remain a leader in the FIA market.

In our Pension Risk Transfer (PRT) business, we generated a record $6 billion of transaction volume in 2019, more than double 2018 activity. One notable win during the year was a $2.6 billion landmark transaction with Bristol-Myers Squibb, the largest PRT transaction of the year and largest full plan termination ever. Through 2019, Athene has closed on more than $10 billion of PRT transactions, which is impressive considering we only entered the market in 2017. Over the last few years, we have quickly solidified our position as an industry leader in PRT, reflecting many of the same attributes that drive success in our Retail business, including our solutions-oriented approach. Building on our success in the US PRT market, we expanded our business in 2019 by entering the UK PRT market as a reinsurer for domestic UK insurers. In December, we completed our first UK PRT transaction for approximately $800 million of deposits and we expect more transactions to emerge in 2020. Since the volume of risk transfer transactions in the UK market significantly exceeds the US, we expect the UK market to be a significant long-term growth opportunity for our platform.

Liza Veren from our Human Resources team volunteers at the Iowa Veterans Cemetery as part of Athene's Day of Action during the annual United Way campaign week.

In our third-party Flow Reinsurance channel, we generated approximately $4 billion of volumes in 2019, up more than 60% versus 2018. This was mainly driven by strong volumes from key partnerships established over the past few years. More importantly, deposits continued to be underwritten at our targeted returns despite low interest rates.

Lastly, we issued a total of $1.3 billion in funding agreements, most of which were generated in the back half of the year. As the spread environment improved, we moved swiftly to engage the market and nearly doubled our 2018 activity in a relatively short period of time. Included within the activity was our first 7-year funding agreement backed note transaction, which lends itself well to our long-term approach to investing and expands the duration of our maturity profile versus the typical 5-year note. Looking forward, we are optimistic 2020 could be another year of healthy issuance at attractive returns provided the bond markets stabilize, including potential expansion into non-US dollar denominated transactions.

On the inorganic side, Athene maintained its disciplined approach to evaluating numerous opportunities in 2019, a year which saw "plain vanilla" liability platforms once again trading at robust premiums to book value. Although there were no new deal announcements during the year, we were active in conversations for transactions that draw on the core competitive advantages which enable us to provide holistic solutions to the industry. We also laid the foundation for larger and more numerous transactions moving forward through the creation of ACRA.

While it is difficult to predict the likelihood and timing of potential inorganic transactions, we are optimistic about the current pipeline. We are finding that certain counterparties remain focused on making fundamental long-term changes to their business models to reduce exposure to complex liabilities, shed non-core businesses, or exit entire businesses altogether, regardless of the favorability of market conditions at any point in time. We also expect that the recent market pressures and historically low interest rate environment could further strain some companies' balance sheets, which could be an impetus for additional transactions in the years to come. We are well-positioned as a solutions provider to capitalize on these dynamics. We have enough deployable capital to support approximately $90 billion of acquired liabilities, which would nearly double our gross invested assets and be significantly accretive to Athene's run-rate earnings power.

Chip Gillis, recently retired co-founder of Athene, and Bermuda employees present local children with computers in 2018 through "Computers for a Better Education," an initiative that strives to improve the learning experience at public schools.

Keith Brooks from our Insurance Operations team delivers a new coat to an elementary student as part of Athene's annual Coats & Boots program.

In addition to our organic and inorganic growth efforts in 2019, we also demonstrated a willingness to control the factors we could to help close the gap between our best-in-class operating performance and our undervalued stock. Even though Athene's financial performance and execution have been exemplary, we have unfortunately received little recognition from the market. As we stepped back and observed this dynamic and received feedback from market participants, including many of you, it became clear that our multi-class share structure was preventing us from being included in all relevant benchmarks. Furthermore, it became apparent that the structure could be a meaningful inhibitor to broader investor appeal over the long term.

In October, we jointly announced a strategic transaction with our partners at Apollo to strengthen the alignment between our companies and eliminate Athene's multi-class share structure. As a result of this important structural change in governance, which was completed at the end of February 2020, Athene has removed any impediments to be included in major stock indices, such as the S&P 500 or MidCap 400. While inclusion could take time and is partially subject to certain technical indicators and committee discretion, Athene would otherwise not be considered without taking this important step. When we look at Athene's investor base versus other financial and insurance companies, it's clear to us that there's a meaningful opportunity to increase Athene's appeal across a broader investor universe, including both active and passive managers. I can confirm that since the announcement in October, we have seen encouraging evidence of broader investor interest and ownership, which will lead to a more balanced and diversified shareholder base over time.

The second major initiative that we employed in 2019 to take advantage of our undervalued stock price was to deploy additional capital into share repurchases. In the absence of inorganic transactions, we viewed the repurchase of our shares as the most attractive use for our capital, and with our stock trading well below book value, we were opportunistically repurchasing shares at high-teens returns.

What We Plan to Accomplish in 2020 and Beyond

As we turn the page on Athene's record performance in 2019 and shift our focus to 2020 and beyond, we believe our strong operating performance and relative position of flexibility within the industry reflect our proven ability to effectively allocate capital to capture wide spreads and generate long-term shareholder value. It's no secret that capital is a crucial ingredient to our continued success. Being opportunistic and efficient with shareholder capital has resulted in sustained deployment at high returns over time. For example, over the past three years, we've deployed over $5 billion of capital to add nearly $70 billion of attractive liabilities, which has more than doubled the size of our business and driven robust earnings growth.

Nick Lampe from Legal and Compliance team reads to a student as part of Athene's Read to Succeed volunteer event, which supports childhood literacy efforts.

In addition to our initial efforts to play defense amid the current crisis, we are focused on identifying attractive opportunities to further enhance our franchise. The current market turbulence will likely provide attractive opportunities to put money to work, as the toll of the crisis works its way through the economy and financial markets. Not surprisingly, we have found that growth is most profitable when capital is most scarce, and that is why we believe the companies with the most capital will win in the long run. At Athene, we have a sizeable and stable in-force business that will generate a steady base of income for years to come and we are armed with an unmatched deployable capital position and strong liquidity to swiftly take advantage of volatility wherever prudent. We are also underwriting new business to attractive targeted returns and maintaining our pricing discipline, serving as a source of strength for the retirement savings industry at a time when many others are pulling back to conserve capital.

Importantly, we are also making a difference in the communities in which we live and work, which demonstrates who we are as a company. In the current volatile environment, Athene's value proposition of offering customers principal protection is more important than ever. Athene's team of 1,336 employees has remained focused on delivering on this important mission, and as a result, we have been able to serve our one million policyholders and pension participants at a high standard, even while most employees are working remotely amid COVID-19 containment measures. Beyond maintaining our core product and service offering, there are consistent examples of how we are doing more, from our annual Coats & Boots drive providing Iowa youth with additional warmth, to starting the largest ever scholarship program at Bermuda College, to raising over $1 million for United Way in 2019 (our largest campaign to date), to donating 900 N-95 face masks to a local Des Moines hospital. Serving our various stakeholders the right way and thinking beyond ourselves is woven into the fabric of Athene's culture, and I am proud of the progress we are making in this important area.

What we have accomplished together over the last decade at Athene is truly remarkable. As I've mentioned before, Athene was a start-up a decade ago – we had a vision to help Americans save for retirement by creating a different kind of insurance company, built to thrive across a variety of economic environments and take advantage of periodic market dislocations.

Amid the significant uncertainties in the market today, it's clear we have a tremendous opportunity ahead, we are very well-positioned to execute. We are confident that we will be able to face the challenges of today head-on and emerge even stronger.

We have a dedicated group of employees, led by a management team with tremendous experience, that consistently strives to do more and push the business forward. We remain convinced in our ability to generate massive shareholder value for years to come and I'm certain that our best days lie ahead.

We thank you for your continued support and look forward to another successful year, and decade, together.

Sincerely,

Jim Belardi

Jim Belardi
Chairman and Chief Executive Officer

Notable Recognition

Iowa's Top Workplaces
2015, 2016, 2017, 2018, 2019

Top Ten Employer in Bermuda
2019

Structured Retail Products (SRP)

Best Carrier Award
2017, 2018

FIA of the Year
2019

Carrier Hedging Team of the Year
2019

Best Educational Initiative
2019

United Way of Central Iowa Awards

2016: Advocate, Volunteer

2017: Spirit of Central Iowa

2018: Game-Changer, Impact-Maker, Trail Blazer

2019: Spirit of Central Iowa

Military Friendly® Employer
2017, 2018, 2019, 2020

Military Spouse Friendly® Employer
2017, 2018, 2019, 2020

2018: Patriot Awards
2019: Pro Patria Award, Seven Seals Award

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2019

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 Symbols	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 if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☑

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

Indicate by check mark whether the registrant has submitted electronically 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 June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $6.4 billion. For purposes of this calculation, we define affiliates as directors, executive officers and shareholders possessing greater than 10% of our aggregate voting power. Class B and Class M common shares are excluded from this calculation.

The number of shares of each class of our common stock outstanding is set forth in the table below, as of January 31, 2020:

Class A common shares	143,296,155	Class M-2 common shares	841,011
Class B common shares	25,381,321	Class M-3 common shares	1,000,000
Class M-1 common shares	3,263,890	Class M-4 common shares	3,948,905

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Form 10-K incorporates by reference certain information from the registrant's definitive proxy statement for the 2020 Annual General Meeting of Shareholders to be filed by the registrant with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the year ended December 31, 2019.

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As used in this Annual Report on Form 10-K (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 and cash flows may differ materially from those 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 *Item 1A. Risk Factors*. 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;
- 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;
- 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 obtain approval of the share exchange transaction with Apollo by our shareholders or regulators;
- our failure to recognize the benefits expected to be derived from the share exchange transaction with Apollo;
- unexpected difficulties or expenditures related to the share exchange transaction with Apollo;
- the failure to achieve the economic benefits expected to be derived from the ACRA capital raise or future ACRA capital raises; and
- other risks and factors listed under *Item 1A. Risk Factors* and those discussed elsewhere in this 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. 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	AP Alternative Assets, L.P.
AAA Investor	AAA Guarantor – Athene, L.P.
AADE	Athene Annuity & Life Assurance Company
AAIA	Athene Annuity and Life Company
AAM	Athene Asset Management LLC, now known as Apollo Insurance Solutions Group LLC
AARe	Athene Annuity Re Ltd., a Bermuda reinsurance subsidiary
ACRA	Athene Co-Invest Reinsurance Affiliate 1A Ltd., together with its subsidiaries
ACRA 1A	Athene Co-Invest Reinsurance Affiliate 1A Ltd., a Bermuda reinsurance subsidiary
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
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 of AGM whom AGM designates, in a written notice delivered to Athene Holding Ltd., as a member of the Apollo Group for purposes of Athene Holding Ltd.'s bye-laws and (6) any affiliate of any of the foregoing (except that Athene, Athene employees, and ISG employees are not members of the Apollo Group)
Athene USA	Athene USA Corporation
Athora	Athora Holding Ltd., formerly known as AGER Bermuda Holding Ltd.
BMA	Bermuda Monetary Authority
CoInvest Other	AAA Investments (Other), L.P.
CoInvest VI	AAA Investments (Co-Invest VI), L.P.
CoInvest VII	AAA Investments (Co-Invest VII), L.P.
DOL	United States Department of Labor
ISG	Apollo Insurance Solutions Group LLC, 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	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
BEAT	Base Erosion and Anti-Abuse Tax
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 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). 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). 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

Term or Acronym	Definition
MCR	Minimum capital requirements
MMS	Minimum margin of solvency
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 invested assets divided by the average 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

PART I

Item 1. Business

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Item 1. Business

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. Our differentiated investment strategy benefits from our strategic relationship with Apollo, which provides a full suite of services for our investment portfolio, 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 provides us with access to Apollo's investment professionals around the world as well as Apollo's global asset management infrastructure across a broad array of asset classes. We are led by a highly skilled management team with extensive industry experience. We are based in Bermuda with our U.S. subsidiaries' headquarters located in Iowa.

We began operating in 2009 when the burdens of the financial crisis and resulting capital demands caused many companies to exit the retirement market, creating the need for a well-capitalized company with an experienced management team to fill the void. Taking advantage of this market dislocation, we have been able to acquire substantial blocks of long-duration liabilities and reinvest the related investments to produce profitable returns.

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. Retirement Services has retail operations, which provide annuity retirement solutions to our policyholders. Retirement Services also has reinsurance operations, which reinsure fixed indexed annuities (FIA), multi-year guaranteed annuities (MYGA), traditional one year guarantee fixed deferred annuities, immediate annuities and institutional products from our reinsurance partners. In addition, our funding agreement activities and our pension risk transfer (PRT) operations are included in our Retirement Services segment. Corporate and Other includes certain other operations related to our corporate activities, including corporate allocated expenses, merger and acquisition costs, debt costs, certain integration and restructuring costs, certain stock-based compensation and intersegment eliminations. Additionally, prior to 2018, Corporate and Other included our former German operations. In Corporate and Other we also hold strategic capital in excess of the level of capital we hold in Retirement Services to support our operating strategy.

We believe we hold a sufficient amount of capital in our Retirement Services segment to support our core operating strategies and to maintain or improve our current ratings as well as our risk appetite based on our internal capital and risk models. Our excess capital is currently allocated to our Corporate non-reportable segment and may fluctuate depending on the mix of both our assets and our liabilities as well as our growth and investment in our organic and inorganic channels. We view this excess as strategic capital, which we expect to deploy for future growth opportunities. We further expect our excess capital position to contribute to ratings improvements over time. We manage our capital to levels which we believe would remain consistent with our current ratings in a recessionary environment. In addition to the excess capital that we hold, we have untapped debt capacity and uncalled capital commitments at Athene Co-Invest Reinsurance Affiliate 1A Ltd. (ACRA 1A, and together with its subsidiaries, ACRA), each of which may be used to capitalize on future growth opportunities. See –*Capital* for further discussion.

We have developed organic and inorganic channels to address the retirement services market and grow our assets and liabilities. By focusing on the retirement services market, we believe that we will benefit from several demographic and economic trends, including the increasing number of retirees in the U.S. and the lack of tax advantaged alternatives for people trying to save for retirement. To date, most of the products that we have sold or acquired have been fixed annuities, which offer people saving for retirement a product that is tax advantaged, has a minimum guaranteed rate of return or minimum cash value and provides protection against investment loss.

Within our organic channels, we have focused on developing a diverse suite of products that allow us to meet our risk and return profiles, even in today's low rate environment. Our organic channels currently include: (1) retail, from which we provide retirement solutions to our policyholders primarily through independent marketing organizations (IMOs), banks and broker-dealers; (2) flow reinsurance, through which we partner with insurance companies to improve their product offerings and enhance their financial results; and (3) institutional, which includes funding agreements and PRT transactions. Our inorganic channel, comprised of acquisitions and block reinsurance, has contributed significantly to our growth, and we expect that it will continue to be an important source of 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, which makes us a competitive counterparty for acquisitions and block reinsurance transactions. In conjunction with Apollo, we are able to provide bespoke solutions to insurance companies seeking to restructure their businesses. We are highly selective in the transactions we pursue, ultimately closing only those that are well aligned with our core competencies and pricing discipline.

We intend to maintain a presence within each of our distribution channels. However, we do not have any market share targets across our organization, which we believe provides us flexibility to respond to changing market conditions in one or more channels and to opportunistically grow liabilities that generate our desired levels of profitability. In a rising interest rate environment, we believe we will be able to profitably increase the volumes generated through our organic channels, while more challenging market environments may give rise to increased growth opportunities through our inorganic channel.

Through our efficient corporate structure and operations, we believe we have built a cost-effective platform to support our growth opportunities. We believe our fixed operating cost structure supports our ability to maintain an attractive financial profile across market environments. Additionally, we believe we have designed our platform to be highly scalable and support growth without significant incremental investment in infrastructure, which allows us to scale our business production up or down to meet demand for our products and services. As a result, we believe we will be able to convert a significant portion of our new business spread into adjusted operating income.

Relationship with Apollo

We have a strategic relationship with Apollo which allows us to leverage the scale of its asset management platform. In addition to co-founding the Company, Apollo assists us in identifying and capitalizing on acquisition opportunities that have been critical to our ability to significantly grow our business. We expect our strategic relationship with Apollo to continue for the foreseeable future. For purposes of our bye-laws, the Apollo Group consists of (1) Apollo, (2) the AAA Guarantor – Athene, L.P. (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 of AGM whom AGM designates, in a written notice delivered to us, as a member of the Apollo Group for purposes of AHL's Bye-laws (which designation shall remain in effect until such designee ceases to be an executive officer of AGM) and (6) any affiliate of any of the foregoing (except that none of Athene, Athene's employees or employees of Apollo Insurance Solutions Group LLC (ISG, formerly Athene Asset Management LLC (AAM)) are members of the Apollo Group). For avoidance of doubt, for purposes of our bye-laws, any person managed by AGM or by one or more of AGM's subsidiaries pursuant to a managed account agreement (or similar arrangement) without AGM or by one or more of AGM's subsidiaries controlling such person as a general partner or managing member shall not be part of the Apollo Group.

The Apollo Group currently has 45% of, and is expected to continue to have a significant portion of, the total voting power of AHL and six of our fifteen directors are employees of or consultants to Apollo, including our Chairman, Chief Executive Officer and Chief Investment Officer, who is also the Chief Executive Officer of ISG, our investment manager and a subsidiary of AGM. Further, our bye-laws generally limit the voting power of our Class A common shares (and certain other of our voting securities) such that no person owns (or is treated as owning) more than 9.9% of the total voting power of our common shares (with certain exceptions, including the interest held by the Apollo Group). See *Item 1A. Risk Factors–Risks Relating to Investment in Our Class A Common Shares–The interest of the Apollo Group, which currently controls 45% of, and is expected to continue to control a significant portion of, the total voting power of AHL and holds a number of the seats on our board of directors, may conflict with that of other shareholders and could make it more difficult for you and other shareholders to influence significant corporate decisions* and *Item 13. Certain Relationships and Related Transactions, and Director Independence*.

On October 27, 2019, we entered into a transaction agreement (Transaction Agreement) with AGM and certain of its affiliates which collectively comprise the Apollo Operating Group (AOG), pursuant to which we agreed to sell Class A common shares to the AOG in exchange for AOG units and cash (Share Exchange). We also granted to AOG and another AGM affiliate certain other rights, including the right to purchase additional Class A common shares at a later time, subject to certain conditions. Further, in connection with the transaction, certain of our executive officers entered into a voting agreement, pursuant to which such executive officers irrevocably appointed an AGM affiliate as their proxy and attorney-in-fact to vote all of their Class A common shares at any meeting of our shareholders or in connection with any written consent of our shareholders following the closing of the transaction. Completion of the Share Exchange and associated transactions is expected to result in the elimination of our multi-class common share structure and better alignment of Apollo's voting rights with its economic interests. See *Note 14 – Related Parties – Other Related Party Transactions – Apollo Share Exchange and Related Transactions* to the consolidated financial statements for further discussion.

Item 1. Business

Growth Strategy

The key components of our long-term growth strategy are as follows:

- **Expand Our Organic Distribution Channels.** We plan to grow organically by expanding our retail, flow reinsurance and institutional distribution channels. These organic channels generally allow us to adjust our product mix to originate liabilities that meet our return targets in diverse market environments.

  We expect our retail channel to continue to benefit from our improving credit profile, strong financial position, suite of capital efficient products and product design capabilities. We believe that this should support growth in sales at our desired cost of crediting through increased volumes in each of our existing retail channels, including via expanding our small to mid-sized bank and broker-dealer network. However, we do not seek to achieve volume growth at the expense of profitability. As a result, we respond to adjust our retail pricing more rapidly for changes in asset yields than do many of our peers. In an economic environment characterized by declining asset yields, our products may be less competitive than those of our peers and in the short-term, we may experience reduced sales volumes.

  Within 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 long-term liabilities with attractive crediting rates. We expect our improving credit profile and growing reputation as a valuable reinsurance counterparty will enable us to attract additional flow reinsurance partners. Similar to our retail channel, we do not seek to achieve volume growth at the expense of profitability and therefore tend to respond rapidly to adjust our pricing for changes in asset yields than do many of our peers.

  We expect to grow our institutional channel by continuing to engage in opportunistic issuances of funding agreements and pursuing additional PRT transactions. We believe that our demonstrated ability to create customized solutions for PRT counterparties seeking to reduce or eliminate their exposure to pension obligations will continue to drive the positive momentum that we have seen in this channel. In addition, through the use of reinsurance arrangements, we believe that we will be able to provide similar PRT solutions to the significant PRT market that exists in the United Kingdom (UK), thereby accelerating our growth in this channel. In December 2019, we signed our inaugural UK PRT reinsurance arrangement, pursuant to which we reinsured $818 million in UK PRT obligations.

- **Pursue Attractive Inorganic Growth Opportunities.** We plan to continue leveraging our expertise in sourcing and evaluating inorganic transactions to grow our business profitably. From our founding through December 31, 2019, we have grown to total assets of $146.9 billion, primarily through acquisitions and block reinsurance transactions. We believe that our demonstrated ability to successfully consummate complex transactions, as well as our relationship with Apollo, provides us with distinct advantages relative to other acquisition and block reinsurance counterparty candidates. Furthermore, we have achieved sufficient scale to provide meaningful operational synergies for the businesses and blocks of business that we acquire and reinsure, respectively. Consequently, we believe we are often sought out by companies looking to restructure their businesses.

- **Expand Our Product Offering.** We seek to build products that meet our policyholders' retirement savings objectives, such as accumulation, income and legacy planning. Our products are customized for each of the retail channels through which we distribute, including IMOs, banks and independent broker dealers, and represent innovative solutions that meet the needs of policyholders in each of these channels. We continue to release updated or new products to meet the evolving needs of policyholders. To further provide innovative solutions to policyholders, in 2019 we launched our first registered product, Amplify, an index-linked product that offers policyholders an opportunity to participate in increases in equity market indices to a greater degree than was previously available within our product portfolio, in exchange for limited risk of loss to principal due to decreases in such equity market indices. Unlike more traditional deferred annuities, as a registered product, Amplify will only be distributed through registered financial representatives, broker dealers and banks.

- **Leverage Our Unique Relationship with Apollo.** We intend to continue leveraging our unique relationship with Apollo to source high-quality assets with attractive risk-adjusted returns. Apollo's global scale and reach provide us with broad market access across environments and geographies and allow us to actively source assets that exhibit our preferred risk and return characteristics. For example, through our relationship with Apollo, we have access to, or the ability to partner with, Apollo's portfolio of origination platforms, which provides us assets with higher spreads than those available in the public markets. See –*Investment Management* for more information regarding Apollo's origination platforms.

  Our relationship with Apollo also allows us to offer creative solutions to insurance companies seeking to restructure their businesses and may enable us source additional volumes of attractively-priced liabilities. For example, in December 2017 a consortium of investors, led by affiliates of Apollo, and certain other investors including us, agreed to purchase Voya Insurance and Annuity Company (VIAC), including its closed block variable annuity segment. In connection with this transaction, we reinsured $19 billion of fixed annuities. These transactions provided Voya Financial, Inc. (Voya) with a comprehensive solution to its variable annuity exposure, while providing us with a substantial block of fixed annuities, which are well aligned with our core business, without requiring that we acquire Voya's variable annuity business.

Finally, our relationship with Apollo has provided us with access to on-demand capital through ACRA. We believe that this capital will be instrumental to executing our growth strategy. See *–Capital* for additional information regarding ACRA.

- **Allocate Assets during Market Dislocations.** As we have done successfully in the past, we plan to fully capitalize on future market dislocations to opportunistically reposition our portfolio to capture incremental yield. For example, regulatory changes in the wake of the financial crisis have made it more expensive for banks and other traditional lenders to hold certain illiquid and complex assets, notwithstanding the fact that these assets may have prudent credit characteristics. The repressed demand for these asset classes has provided opportunities for investors to acquire high-quality assets that offer attractive returns. For example, we see emerging opportunities as banks retreat from direct mortgage lending, structured and asset-backed products, and middle-market commercial loans. We intend to maintain a flexible approach to asset allocation, which will allow us to act quickly on similar opportunities that may arise in the future across a wide variety of asset types.

- **Maintain Risk Management Discipline.** Our risk management strategy is to proactively manage our exposure to risks associated with interest rate duration, credit risk and structural complexity of our invested assets. We address interest rate duration and liquidity risks by managing the duration of the liabilities we source with the assets we acquire through asset liability management (ALM) modeling. We assess credit risk by modeling our liquidity and capital under a range of stress scenarios. We manage the risks related to the structural complexity of our invested assets through Apollo's modeling efforts. The goal of our risk management discipline is to be able to continue to grow and achieve profitable results across various market environments. See *Item 7A. Quantitative and Qualitative Disclosures About Market Risk* for additional information.

Products

We principally offer two product lines: annuities and funding agreements. Our primary product line is annuities and includes fixed, payout and group annuities issued in connection with PRT transactions. We also offer funding agreements, including those issued to institutions and to a special-purpose unaffiliated trust in connection with our funding agreement backed notes (FABN) program. The following summarizes our total premiums and deposits by product:

	Years ended December 31,		
(In millions)	2019	2018	2017
Annuities			
Fixed indexed	$ 7,304	$ 29,973	$ 5,480
Fixed rate	3,192	5,501	873
Payout	624	1,362	129
Group annuities – PRT	6,049	2,581	2,249
Total annuities products	17,169	39,417	8,731
Funding agreements	1,301	650	3,054
Life and other (excluding German products)	37	58	84
German products	—	—	203
Gross premiums and deposits, net of ceded	18,507	40,125	12,072
Premiums and deposits attributable to ACRA noncontrolling interests	(544)	—	—
Net premiums and deposits, net of ceded and noncontrolling interests	$ 17,963	$ 40,125	$ 12,072

Gross premiums and deposits are comprised of all products deposits, which generally are not included in revenues on the consolidated statements of income, and premiums collected. Gross premiums and deposits include directly written business, flow reinsurance assumed as well as premiums and deposits generated from assumed block reinsurance transactions, net of those ceded through reinsurance. Net premiums and deposits includes premiums and deposits associated with our proportionate share of ACRA premiums and deposits, based on our economic ownership, but does not include the proportionate share associated with the noncontrolling interest. Organic and inorganic deposits do not correspond to the gross premiums and deposits presented above as gross premiums and deposits includes renewal deposits, annuitizations, as well as premiums and deposits from life and other products other than deferred annuities and institutional products, all of which are not included in our organic deposits.

Reserve liabilities represents our policyholder liability obligations, including liabilities assumed through reinsurance and net of liabilities ceded through reinsurance, and therefore does not correspond to interest sensitive contract liabilities, future policy benefits, dividends payable to policyholders and other policy claims and benefits as disclosed on our consolidated balance sheets. Reserve liabilities includes the reserves related to assumed modified coinsurance (modco) and funds withheld agreements to encompass the liabilities for which costs are being recognized in the consolidated statements of income. Reserve liabilities is net of the ceded liabilities to third-party reinsurers as the costs of those 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. 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.

The following summarizes our reserve liabilities by product:

(In millions, except percentages)	December 31, 2019		December 31, 2018	
Annuities				
Fixed indexed	$ 73,346	64.0%	$ 73,224	68.0%
Fixed rate	19,481	17.0%	17,802	16.5%
Group annuities – PRT	8,230	7.2%	4,710	4.4%
Payout	6,383	5.6%	6,009	5.6%
Total annuities products	107,440	93.8%	101,745	94.5%
Funding agreements	5,107	4.4%	3,826	3.5%
Life and other	2,105	1.8%	2,161	2.0%
Total reserve liabilities	$ 114,652	100.0%	$ 107,732	100.0%

Annuities

We offer deferred and payout annuities, which are focused on meeting the needs and objectives of people preparing for, approaching or living in retirement. The combination of financial strength, innovative product design and an effective sales strategy enables us to compete successfully in the market and meet the evolving needs of the rapidly growing population of retirees.

Fixed Indexed Annuities

The majority of our reserve liabilities are FIAs. An FIA is a type of insurance contract in which the policyholder makes one or more premium deposits which earn interest, on a tax deferred basis, at a crediting rate based on a specified market index. The policyholder is entitled to receive periodic or lump sum payments a specified number of years after the contract is issued. FIAs allow policyholders the possibility of earning interest without significant risk to principal, unless the contract is surrendered during a surrender charge period. A market index tracks the performance of a specific group of stocks or other assets representing a particular segment of the market, or in some cases, an entire market. Our FIAs include a provision for a minimum guaranteed surrender value calculated in accordance with applicable law, as well as death benefits as required by non-forfeiture regulations. We generally buy options on the indices to which the FIAs are tied to hedge the associated market risk. The cost of the option is priced into the overall economics of the product as an option budget.

The value to the policyholder of an FIA contract is equal to the sum of premiums paid, premium bonuses, if any, and index credits based on the change in the relevant market index, subject to a cap (a maximum rate that may be credited), spread (a credited rate determined by deducting a specific rate from the index return) and/or a participation rate (a credited rate equal to a percentage of the index return), less any fees for riders. Caps on our FIA products generally range from 2.0% to 6.0% when measured annually and 0.5% to 2.5% when measured monthly. Participation rates generally range from 25% to 150% of the performance of the applicable market index. Caps, spreads and participation rates can typically be reset no more frequently than annually, and in some instances no more frequently than every two to four years, at the relevant U.S. insurance subsidiary's discretion, subject to stated policy minimums. Certain riders provide a variety of benefits, such as lifetime income or additional liquidity, for a set charge. As this charge is fixed, the policyholder may lose principal if the index credits received do not exceed the amount of such charge.

We generate income on FIA products by earning an investment margin, which is based on the difference between (1) income earned on the investments supporting the liabilities and (2) the interest credited to customers and the cost of providing guarantees (net of rider fees).

Registered Index-Linked Annuities

A registered index-linked annuity (RILA) is similar to an FIA in that it offers the policyholder the opportunity for tax-deferred growth based in part on the performance of a market index. Compared to an FIA, a RILA has the potential for higher returns but also has the potential limited risk of loss to principal and related earnings. A RILA provides the ability for the policyholder to participate in the positive performance of certain market indices during a term, limited by a cap or adjusted for a participation rate. Negative performance of the market indices during a term can result in negative policyholder returns. Downside protection is typically provided in the form of either a "buffer" or a "floor" to limit the policyholder's exposure to market loss. A "buffer" is protection from negative exposure up to a certain percentage, typically 10 or 20 percent. A "floor" is protection from negative exposure less than a stated percentage (i.e., the policyholder risks exposure of loss up to the "floor," but is protected against any loss in excess of this amount).

Fixed Rate Annuities

Fixed rate annuities include annual reset annuities and MYGAs. Unlike FIAs, fixed rate annuities earn interest at a set rate (or declared crediting rate), rather than a rate that may vary based on an index. Fixed rate annual reset annuities have a crediting rate that is typically guaranteed for one year. After such period, we have the ability to change the crediting rate at our discretion, generally once annually, to any rate at or above a guaranteed minimum rate. MYGAs are similar to annual reset annuities except that the initial crediting rate is guaranteed for a specified number of years, rather than just one year, before it may be changed at our discretion. After the initial crediting period, MYGAs can generally be reset annually. As of December 31, 2019, crediting rates on outstanding annual reset annuities ranged from 1% to 6% and crediting rates on outstanding MYGAs ranged from 1% to 6%. As of December 31, 2019, 41% of our fixed rate annuities were set at the guaranteed minimum crediting rate.

Income Riders to Fixed Annuity Products

We broadly characterize the income riders on our deferred annuities as either guaranteed or participating. Guaranteed income riders provide policyholders with a guaranteed lifetime withdrawal benefit (GLWB), the amount of which is determined based upon the age of the policyholder when the policy is purchased and when the lifetime income is elected. Riders providing GLWB features permit policyholders to elect to receive guaranteed payments for life from their contract without having to annuitize their policies, which provides policyholders with greater flexibility in the future. Participating income riders tend to have lower levels of guaranteed income than guaranteed income riders, but provide policyholders the opportunity to receive greater levels of income if the policies' indexed crediting strategies perform well.

Income riders, particularly on FIAs, have become very popular among policyholders. The Life Insurance and Market Research Association (LIMRA) estimates that 53% of FIA premium for the nine months ended September 30, 2019 (the most recent period that specific market share data is currently available) included an income rider. Much of our in-force block of deferred annuities contains policies with income riders, which were sourced through retail and reinsurance operations as well as acquisitions, such as the substantial block of these policies acquired with Aviva USA Corporation (Aviva USA). Many of our in-force deferred annuities contain policies that provide GLWB. As of December 31, 2019, approximately 42% of our deferred annuities account value have rider benefits and the reserve associated with the rider benefits was 10.9% of the related account value. Of the deferred annuities sourced through our retail and flow reinsurance channels, for the year ended December 31, 2019, 14% contained participating income riders and 12% contained guaranteed income riders.

Withdrawal Options for Deferred Annuities

After the first year following the issuance of a deferred annuity, the policyholder is typically permitted to make withdrawals up to 5% or 10% (depending on the contract) of the prior year's value without a surrender charge or market value adjustment (MVA), subject to certain limitations. Withdrawals in excess of the allowable amounts are assessed a surrender charge and MVA if such withdrawals are made during the surrender charge period of the policy. The surrender charge of most of our products is typically between 8% and 18% of the contract value at contract inception and generally decreases by approximately one percentage point per year during the surrender charge period. The surrender charge period of our most popular products ranges from 3 to 20 years. The average surrender charge (excluding the impact of MVAs) is 6% for our deferred annuities as of December 31, 2019.

At maturity, the policyholder may elect to receive proceeds in the form of a single payment or an annuity. If the annuity option is selected, the policyholder will receive a series of payments either over the policyholder's lifetime or over a fixed number of years, depending upon the terms of the contract. Some contracts permit annuitization prior to maturity. In addition to the foregoing rights, a policyholder may also elect to purchase a guaranteed minimum withdrawal benefit rider which provides the policyholder with a guaranteed minimum withdrawal benefit for the life of the contract.

Payout Annuities

Payout annuities primarily consist of single premium immediate annuities (SPIA), supplemental contracts and structured settlements. Payout annuities provide a series of periodic payments for a fixed period of time or for the life of the policyholder, based upon the policyholder's election at the time of issuance. The amounts, frequency and length of time of the payments are fixed at the outset of the annuity contract. SPIAs are often purchased by persons at or near retirement age who desire a steady stream of payments over a future period of years. Supplemental contracts are typically created upon the conversion of a death claim or the annuitization of a deferred annuity. Structured settlements generally relate to legal settlements.

Group Annuities

PRT transactions usually involve a single premium group annuity contract issued to discharge certain pension plan liabilities. The group annuities that we issue are nonparticipating contracts. The assets supporting the guaranteed benefits for each contract may be held in a separate account. Group annuity benefits may be purchased for current, retired and/or terminated employees and their beneficiaries covered under terminating or continuing pension plans. Both immediate and deferred annuity certificates may be issued pursuant to a single group annuity contract. Immediate annuity certificates cover those retirees and beneficiaries currently receiving payments, whereas deferred annuity certificates cover those participants who have not yet begun receiving benefit payments. Immediate annuity certificates have no cash surrender rights, whereas deferred annuity certificates may include an election to receive a lump sum payment, exercisable by the participant upon either the participant achieving a specified age or the occurrence of a specified event, such as termination of the participant's employment.

A PRT transaction may be structured as a buyout or buy-in transaction. A buyout transaction involves the issuance by an insurer of a group annuity contract to the plan sponsor and individual annuity certificates to each plan participant, resulting in the transfer of the contractual obligation to pay pension benefits from the plan sponsor to the insurer. A buyout transaction may be a full buyout or a partial buyout. A full buyout covers all obligations outstanding under the plan and involves the termination of the plan, whereas, a partial buyout covers benefits for a subset of the plan population with the remaining plan participants continuing with the plan sponsor. A partial buyout may or may not involve a plan termination. A buy-in similarly involves the issuance of a group annuity contract to the plan sponsor, but the plan sponsor retains the contractual obligation to pay pension benefits to the plan participants and receives reimbursement from the insurer for those payments related to plan participants covered by the group annuity contract. The buy-in group annuity contract is considered a plan asset. A PRT transaction structured as a buy-in includes an option to convert to buyout at the election of the plan sponsor. Generally, a buy-in structure is selected when the plan sponsor seeks to eliminate risk but is not yet prepared to terminate the plan or recognize any adverse accounting impact that may accompany a plan termination. A buy-in contract may be surrendered at the election of the plan sponsor, subject to certain conditions, resulting in a refund to the plan sponsor in an amount determined in accordance with the group annuity contract.

We earn income on group annuities based upon the spread between the return on the assets received in connection with the PRT transaction and the cost of the pension obligations assumed. Group annuities expose us to longevity risk, which would be realized if plan participants live longer than assumed in underwriting the transaction, resulting in aggregate payments that exceed our expectations.

Funding Agreements

We focus on opportunistically issuing funding agreements at attractive risk-adjusted funding costs to institutional investors. Funding agreements are negotiated privately between an investor and an insurance company. They are designed to provide an agreement holder with a guaranteed return of principal and periodic interest payments, while offering competitive yields and predictable returns. The interest rate can be fixed or floating. If the interest rate is a floating rate, it may be linked to the London Interbank Offered Rate (LIBOR), the federal funds rate or other major index. See *Item 1A. Risk Factors–Risks Relating to Our Business–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.*

Life and Other (Excluding German Products)

Life and other products include other retail products, including run-off or ceded business, statutory closed blocks and ceded life insurance.

German Products

Prior to the deconsolidation of Athora Holding Ltd. (together with its subsidiaries, Athora) as discussed below, German products included annuity, life insurance and unit-linked products. The primary German product type was endowment policies, which were traditional German life insurance policies that included legally guaranteed interest, the right of policyholders to participate in certain portions of results and a death benefit.

Athora Deconsolidation

Prior to January 1, 2018, Athora was a wholly-owned subsidiary of AHL. In order to fully capitalize on the opportunity presented by the European market, Athora raised capital as part of a private offering of its equity securities. In April 2017, Athora entered into subscription agreements pursuant to which Athora secured commitments to purchase new common shares in Athora (Athora Offering). On January 1, 2018, the Athora Offering closed and Athora called capital from all of its investors, excluding us. In connection with the closing of Athora Offering, our equity interest in Athora was exchanged for new common shares of Athora and our interest in Athora was reduced. As of December 31, 2019, we held 10% of the aggregate voting power of and 16% of the economic interest in Athora. Our interest in Athora is held as a related party investment rather than as a consolidated subsidiary.

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.

Distribution Channels

We have developed four dedicated distribution channels: retail, flow reinsurance, institutional and acquisitions and block reinsurance, which support opportunistic origination across differing market environments. Additionally, we believe these distribution channels enable us to achieve stable asset growth while maintaining attractive returns.

We are diligent in setting our return targets based on market conditions and risks inherent in the products we offer and in the acquisition or block reinsurance transactions we pursue. Generally, we target mid-teen returns for sources of organic growth and mid-teen or higher returns for sources of inorganic growth. However, specific return targets are established with due consideration to the facts and circumstances surrounding each growth opportunity and may be higher or lower than those that we target more generally. Factors that we consider in establishing return targets for a given growth opportunity include, but are not limited to, the certainty of the return profile, the strategic nature of the opportunity, the size and scale of the opportunity, the alignment and fit of the opportunity with our existing business, the opportunity for risk diversification and the existence of increased opportunities for higher returns or growth. If market conditions or risks inherent in a product or transaction create return profiles that are not acceptable to us, we generally will not sacrifice our profitability merely to facilitate growth.

Retail

We have built a scalable platform that allows us to originate and rapidly grow our business in deferred annuity products despite today's low interest rate environment. We have developed a suite of retirement savings products, distributed through our network of approximately 50 IMOs; approximately 48,000 independent agents in all 50 states; and our growing network of 13 small and mid-sized banks and 90 regional broker-dealers. We are focused in every aspect of our retail channel on providing high quality products and service to our policyholders and maintaining appropriate financial protection over the life of their policies.

Flow Reinsurance

Reinsurance is an arrangement under which an insurance company, the reinsurer, agrees to indemnify another insurance company, the ceding company or cedant, for all or a portion of the insurance risks underwritten by the ceding company. Reinsurance is designed to (1) reduce the net amount at risk on individual risks, thereby enabling the ceding company to increase the volume of business it can underwrite, as well as increase the maximum risk it can underwrite on a single risk, (2) stabilize operating results by reducing volatility in the ceding company's loss experience, (3) assist the ceding company in meeting applicable regulatory requirements and (4) enhance the ceding company's financial strength and surplus position.

Within our flow reinsurance channel, we generally conduct third-party flow reinsurance transactions through our subsidiary, Athene Life Re Ltd. (ALRe). As a fixed annuity reinsurer, ALRe partners with insurance companies to develop solutions to their capital requirements, enhance their presence in the retirement market and improve their financial results. The specific liabilities that ALRe targets to reinsure include FIAs, MYGAs, traditional one-year guarantee fixed deferred annuities, immediate annuities and institutional products. ALRe only targets business consistent with our preferred liability characteristics, and as such, flow reinsurance provides another opportunistic channel for us to source long-term liabilities with attractive crediting rates. For various transaction-related reasons, from time to time, our U.S. insurance subsidiaries, in particular Athene Annuity & Life Assurance Company (AADE), will reinsure business from third-party ceding companies. In these instances, the respective U.S. insurance subsidiary will generally retrocede a portion of the reinsured business to Athene Annuity Re Ltd. (AARe) or ALRe.

As of December 31, 2019, we had on-going flow reinsurance and retrocession agreements involving 12 third-party cedants, for a quota share of such cedants' new deposits, including both FIAs and MYGAs.

Institutional

Funding Agreements

We participate in an FABN program through which we may issue funding agreements to a special-purpose trust that issues marketable medium-term notes. The notes are underwritten and marketed by major investment banks' broker-dealer operations and are sold to institutional investors. The proceeds of the issuance of notes are used by the trust to purchase one or more funding agreements from us with matching interest and maturity payment terms. We are also a member of the Federal Home Loan Bank (FHLB) and we have issued funding agreements to the FHLB in exchange for cash advances. The following represents the aggregate principal amount of funding agreement deposits:

	Years ended December 31,		
(In millions)	2019	2018	2017
FABN	$ 1,001	$ —	$ 2,750
FHLB	300	650	250
Total funding agreement deposits	$ 1,301	$ 650	$ 3,000

As of December 31, 2019, we had funding agreements of $3.7 billion outstanding under our FABN program and $1.2 billion outstanding with the FHLB. As of February 20, 2020, we had $5.4 billion of capacity remaining under our FABN program.

Pension Risk Transfer

Through PRT, we partner with institutions seeking to transfer and thereby reduce their obligation to pay future pension benefits to retirees and deferred participants. We have built an experienced team and continue to enhance our capabilities in this channel by, among other things, expanding into the deferred liability segment, offering a buy-in product and expanding into the UK market by reinsuring the PRT obligations of UK counterparties through our subsidiary Athene Life Re International Ltd. (ALReI). We work with advisors, brokers and consultants to source PRT transactions and design solutions that meet the needs of prospective PRT counterparties. In the U.S., we are focused on medium- and large-sized deals involving retirees and/or deferred participants that are structured as either a buyout or a buy-in transaction. In the UK, we are focused on reinsuring direct writers of medium- and large-sized deals involving retirees and/or deferred participants that are structured as PRT transactions. We entered the PRT channel during 2017 and from our entry through the year ended December 31, 2019, we had closed 16 deals involving more than 168,000 plan participants resulting in the issuance of group annuities and entry into UK PRT reinsurance arrangements in the aggregate principal amount of $10.9 billion.

We believe we have established ourselves as a trusted PRT solutions provider and expect that our experience in crafting customized PRT solutions and our improving credit profile will enable us to continue to source and execute PRT transactions. Our ability to design tailored solutions that meet the needs of our PRT counterparties was highlighted in our landmark transaction with Bristol-Myers Squibb Company (Bristol-Myers), which closed in August of 2019. Pursuant to that transaction, we provided Bristol-Myers with an innovative solution to facilitate the complete termination of its pension plan. This innovative solution involved us agreeing to provide a group annuity contract covering all obligations that remained after certain plan participants exercised their right to receive a lump sum payment in July 2019. The resulting group annuity contract covered $2.6 billion of remaining pension obligations. Further, we demonstrated our ability to deliver upon our value proposition in the UK market through our inaugural UK PRT reinsurance arrangement, pursuant to which we reinsured approximately $818 million in UK PRT obligations.

Acquisitions and Block Reinsurance

Acquisitions

Acquisitions are an important source of growth in our business. We have a proven ability to acquire businesses in complex transactions at terms favorable to us, manage the liabilities that we acquire and reinvest the associated assets. Through December 31, 2019, we have closed four acquisition transactions in the U.S.: Liberty Life Insurance Corporation (Liberty Life), Investors Insurance Corporation, Presidential Life Corporation and Aviva USA; and one acquisition transaction internationally: Delta Lloyd Deutschland AG (DLD); collectively representing reserve liabilities backed by approximately $65.9 billion in total assets (net of $9.3 billion in assets ceded through reinsurance).

The acquisition of Aviva USA marked a significant milestone in our history. As a result of the acquisition we grew to approximately four times our size immediately prior to the acquisition (as measured by total assets). The acquisition significantly enhanced our retail channel, increased our scale, improved our infrastructure and further demonstrated our integration abilities, in this case having successfully integrated a company with a significantly larger employee headcount and IT and operational footprint.

We plan to continue leveraging our expertise in sourcing and evaluating transactions to profitably grow our business. We believe our demonstrated ability to source transactions, consummate complex transactions and reinvest assets into higher yielding investments as well as our relationship with Apollo and access to capital provide us with distinct advantages relative to other acquisition candidates.

Block Reinsurance

Through block reinsurance transactions, we partner with life and annuity companies to decrease their exposure to one or more products or to divest of lower-margin or non-core segments of their businesses. Unlike acquisitions in which we must acquire the assets or stock of a target company, block reinsurance allows us to contractually assume assets and liabilities associated with a certain book of business. In doing so, we contractually assume responsibility for only that portion of the business that we deem desirable, without assuming additional liabilities. The benefit of the block reinsurance structure was highlighted in the transaction with Voya, pursuant to which we reinsured $19 billion in fixed annuities without assuming any of Voya's variable annuities.

Investment Management

Investment activities are an integral part of our business and our net investment income is a significant component of our total revenues. Our investment philosophy is to invest a portion of our assets in securities that earn us incremental yield by taking liquidity risk and complexity risk and capitalizing on our long-dated and persistent liability profile to prudently achieve higher net investment earned rates, rather than assuming solely credit risk. A cornerstone of our investment philosophy is that given the operating leverage inherent in our business, modest investment outperformance can translate to outsized return performance. For example, if we generate investment returns that exceed those of our peers by 40 basis points (net of fees), we would expect our return on equity (ROE) to exceed those of our peers by approximately 400 basis points or more, assuming consistent operating leverage of approximately 10 times. Because we have remained disciplined in underwriting attractively priced liabilities, we have the ability to invest in a broad range of high-quality assets to generate attractive earnings.

Our differentiated investment strategy benefits from our strategic relationship with Apollo, which provides a full suite of services for our investment portfolio, 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. Apollo provides portfolio management services for substantially all of our net invested assets.

We are downside focused and our asset allocations reflect the results of stress testing. Additionally, we establish risk thresholds which in turn define risk tolerance across a wide range of factors, including credit risk, liquidity risk, concentration risk and caps on specific asset classes. We protect against rising interest rates, as our assets are generally shorter in effective duration than our liabilities, resulting in a risk profile that we believe could sustain substantial increases in interest rates over and above what is implied by current futures markets without sustaining net losses.

Apollo's investment team and credit portfolio managers employ 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 interest rate-sensitive investments, including collateralized loan obligations (CLO), non-agency residential mortgage-backed securities (RMBS) and various types of structured products. These asset classes permit us to earn incremental yield by assuming liquidity risk and complexity risk, rather than assuming solely credit risk.

Apollo sources assets for our investment portfolio based upon the unique characteristics of our business, including desired asset allocation and risk tolerance, and with regard to the ever-changing macroeconomic environment in which we operate. In recent years, we and Apollo have recognized that a heightened demand for investment grade marketable securities has placed substantial downward pressure on credit spreads of such securities, which adversely impacts the returns we are able to achieve on new investment purchases. Rather than increase our allocation to higher risk securities to increase yields, we have decided with Apollo to pursue the direct origination of high-quality, predominantly senior secured assets, which possess greater alpha-generating qualities than securities that would otherwise be readily available in public markets.

We believe that a greater focus on direct origination will afford us both quantitative and qualitative advantages, including eliminating the cost of intermediaries, recognizing an illiquidity premium, having direct access to diligence and having greater control over the terms of the investment. Furthermore, we believe that direct origination will often provide us with the flexibility to choose the location of the capital structure in which we invest, affording us the opportunity to select the risk/return profile that we deem optimal. By capitalizing on these advantages, we seek to increase yields on our investment portfolio while maintaining investment discipline and limiting our exposure to assets with sub-optimal risk/return characteristics. Investing in directly originated assets comports well with our investment philosophy of earning incremental spread by taking liquidity and complexity risk, rather than taking excessive credit risk.

We and Apollo have made and are continuing to make significant investments in establishing a portfolio of asset origination platforms and investment teams across a variety of asset classes. The asset origination platforms that Apollo currently controls and/or operates and a brief description of each follows.

midcap	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.
AmeriHome mortgage	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.
MERX AVIATION	Merx Aviation is a global aircraft leasing, management and finance company based in New York and Dublin. Merx has an open mandate to invest in aviation assets, with full flexibility across the spectrum of investment scale, duration, asset type, asset age and structure. Merx targets investment opportunities that provide attractive risk-adjusted returns with downside protection from the underlying aircraft metal value and collateral package. Merx sources proprietary deal flow from its extensive aviation relationship network, composed of other lessors, airlines, private equity firms, hedge funds, aircraft asset managers, part-out shops, and original equipment manufacturers. Merx leverages its operational expertise across marketing, technical, legal, finance, and portfolio management functions to ensure performance across its owned and managed portfolio.
APOLLO	Apollo Net Lease Co. is a net lease origination platform focused on the acquisition of operationally-essential, triple net lease real estate assets located throughout the U.S. and is an indirect subsidiary of AGM. The platform sources, underwrites, structures and actively manages net lease real estate assets diversified by both geography and tenancy on behalf of Athene. Apollo Net Lease Co. provides access to a diverse asset base through its experienced management team and fully integrated origination platform.
Haydock Finance	Haydock Finance is an established lender focused on providing lease finance to UK-based small and medium-sized enterprises backed by business-critical hard assets. Collateral includes, among others, commercial vehicles, industrial plant & machinery and agricultural equipment. By nature of the agreements, the portfolio is granular and has a short weighted average life. For distribution, Haydock relies on a panel of approved brokers and direct sales.
REDDING RIDGE ASSET MANAGEMENT	Redding Ridge Asset Management (Redding Ridge) is a registered investment advisor specializing in leveraged loans and global CLO management. Redding Ridge's primary business consists of acting as collateral manager for CLO transactions and related warehouse facilities and as holder of CLO Retention interests in both U.S. and Europe. Redding Ridge was established and seeded by AGM in response to risk retention regulations. The firm is strategically positioned with access to significant CLO management and structuring expertise, industry contacts and investor relationships. Pursuant to various service agreements with AGM, Redding Ridge is supported by top tier credit research, credit risk management, credit trading platform and other corporate / administrative services.
PK Air	PK AirFinance is a leading provider and arranger of loans secured by commercial aircraft, aircraft engines and helicopters. PK AirFinance has comprehensive origination, underwriting, and syndication lending capabilities across products and geographies. PK AirFinance's customer base includes airlines, aircraft traders, lessors, investors and financial institutions with product expertise spanning senior secured loans, finance leases, conditional sales, loan participations, pre-delivery payment loans, and bridge loans. PK AirFinance maintains a global footprint with extensive experience in attractive emerging markets that are not core for some traditional banks. PK AirFinance employs a differentiated, asset-focused underwriting approach underpinned by EDGE (data analytics tool) and supplemented by credit underwriting and cash flow analysis.

We opportunistically allocate 5–10% of our portfolio to alternative investments where we primarily focus on fixed income-like, cash flow-based investments. Our alternative investment strategy is inherently opportunistic rather than being derived from allocating a fixed percentage of assets to the asset class and the strategy is subject to internal concentration limits. Individual alternative investments are selected based on the investment's risk-reward profile, incremental effect on diversification and potential for attractive returns due to sector and/or market dislocations. We have a strong preference for alternative investments 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. In general, we target returns for alternative investments of 10% or higher on an internal rate of return basis over the expected lives of such investments.

Our asset portfolio is managed 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, commercial mortgage-backed securities (CMBS), CLO, commercial mortgage whole loans and mezzanine loans and alternative investments. We also set credit risk limits for exposure to a single issuer that vary based on ratings. In addition, our asset portfolio is constrained by its scenario-based capital ratio limit and its stressed liquidity limit.

Capital

As discussed previously in –*Growth Strategy*, we seek to achieve profitable growth that maximizes shareholder value. Executing on our growth strategy requires that we have access to adequate amounts of capital. Our deployable capital and uses thereof are set forth below.

Deployable Capital

Our deployable capital is comprised of capital from three sources: excess equity capital, untapped debt capacity and uncalled capital commitments from ACRA. As of December 31, 2019, we believe that we have over $6.7 billion in total excess equity capital, untapped debt capacity and uncalled ACRA commitments available to be deployed, subject, in the case of debt capacity, to market conditions and general availability.

Excess Equity Capital

Capital in excess of the amount required to support our core operating strategies is considered excess equity capital. The amount of capital required to support our core operating strategies is determined based upon internal modeling and analysis of economic risk and also reflects rating agencies capital model inputs and NAIC risk-based capital (RBC) requirements. As of December 31, 2019, this was consistent with an RBC ratio of approximately 370%. As of December 31, 2019, we held approximately $2.0 billion in excess equity capital.

Debt Capacity

As of December 31, 2019, our debt to capital ratio was 9.9% and our adjusted debt to capital ratio was 12.1%. Based upon an estimated peer average adjusted debt to capital ratio of approximately 25%, we believe that we have approximately $2.1 billion in untapped debt capacity that could be drawn, assuming favorable market conditions and general availability. Additionally, we expect to repay the $475 million of short-term borrowings in early 2020.

ACRA

ACRA 1A was initially formed as a wholly owned subsidiary of ALRe with the objective of raising third-party capital for the purpose of pursuing inorganic transactions, PRT transactions and certain flow reinsurance transactions (collectively, Qualifying Transactions). On September 11, 2019, ALRe entered into a framework agreement (Framework Agreement) with ACRA, in connection with which ACRA received capital commitments from ALRe and certain funds managed by AGM referred to collectively as the Apollo/Athene Dedicated Investment Program (ADIP).

On October 1, 2019, ALRe sold 67% of its economic interests in ACRA to ADIP for $575 million. The shares held by ADIP are non-voting. The shares held by ALRe represent 100% of the voting power and 33% of the economic interests in ACRA. In connection with the sale of ACRA economic interests to ADIP, ALRe entered into a shareholders agreement (Shareholders Agreement) with ACRA and ADIP. The terms of the Shareholders Agreement were approved by the disinterested members of our board of directors, acting under authority granted by our board of directors.

To ensure that ACRA 1A continues to qualify for certain benefits under the income tax treaty between the U.S. and the UK (UK Treaty), the economic ownership interests of ACRA 1A may need to be adjusted. In that event, ALRe may purchase newly issued ACRA 1A shares (True-up Shares) in an amount determined by ACRA 1A. Any such purchase would cause ALRe to hold greater than 33% of the economic interests in ACRA 1A. In addition, if, following any such purchase, it is determined that ALRe's ownership percentage may be reduced without causing ACRA 1A to fail to qualify for UK Treaty benefits, ACRA 1A may redeem all or a portion of the True-up Shares. It is likely that one or more such purchases will be necessary during the 2020 calendar year, and it is possible that one or more such redemptions may be subsequently effected.

During a commitment period ranging from approximately three to five years, ACRA has the right to participate in substantially all Qualifying Transactions. ALRe may also offer ACRA the right to participate in flow reinsurance transactions with existing third-party counterparties and reinsurance transactions involving new funding agreements from time to time, subject to certain conditions. ACRA's election to participate in Qualifying Transactions is determined by ACRA's Transaction Committee, which is a committee of the board of directors of ACRA comprised of our representatives and those of AGM. If ACRA elects not to participate in a Qualifying Transaction, we will have the right to pursue such Qualifying Transaction without ACRA. ACRA's right to participate in Qualifying Transactions is subject to capital requirements and other terms and conditions.

In connection with each Qualifying Transaction in which ACRA elects to participate (each, a Participating Transaction), ACRA will generally pay ALRe a fee (Wrap Fee) on the reserves of the assumed or acquired business. The Wrap Fee is expected to be approximately 15 bps per year, based on a scale which increases from 10 basis points as the portion of the reserves economically attributed to ADIP increases.

In general, (a) on or about the 10th anniversary of the effective date of any Participating Transaction (other than a flow reinsurance transaction) or (b) on or about the 10th anniversary of the date on which reinsurance is terminated as to new business under any Participating Transaction that is a flow reinsurance transaction (which would occur no later than the end of the commitment period), ALRe or its applicable affiliate has the right (Commutation Right) to terminate ACRA's participation in such Participating Transaction based on a book value pricing mechanism and subject to ADIP's ability to reject the commutation if a minimum return with respect to such Participating Transaction is not achieved. If ALRe does not exercise the Commutation Right with respect to a Participating Transaction, then ACRA's obligation to pay the Wrap Fee in connection with such Participating Transaction will terminate, and, subject to certain exceptions (and the applicable terms and conditions of the Framework Agreement and related transaction documents), ALRe will be required to pay ACRA a fee calculated in the same manner as the Wrap Fee. In addition, if ACRA fails to satisfy minimum aggregate capital requirements, ALRe has the right to recapture or assign to another of our subsidiaries a portion of the business retroceded to ACRA (and/or any of its insurance or reinsurance subsidiaries) to the extent necessary to cure such failure.

As of December 31, 2019, ALRe and ALReI had retroceded to ACRA 100% of approximately $9.8 billion of reserve liabilities. In connection with future Participating Transactions, ACRA will draw from ADIP and from ALRe their respective share of the amount of capital necessary to consummate such Participating Transactions.

ACRA has a board of directors comprised of up to eleven directors (the ACRA Board). ALRe is permitted to nominate seven directors to serve on the ACRA Board: (1) one is the Chairman, (2) one is a representative of AGM, (3) one is our representative, (4) two are representatives of AGM or us and (5) two are independent directors. ADIP and its investors are permitted to nominate the other four directors to serve on the ACRA Board, at least three of which must be independent directors.

The terms of any Participating Transaction may vary from the terms described above upon mutual agreement of us and the ACRA Transaction Committee.

As of December 31, 2019, ADIP had raised approximately $3.2 billion in capital commitments, of which $2.6 billion remained uncalled and was available to deploy into Qualifying Transactions.

Uses of Capital

There are two forms of capital deployment: (1) a payment for a business opportunity, such as the payment of a ceding commission to enter into a block reinsurance transaction or the payment of cash to acquire our shares on the open market, and (2) the retention of capital pursuant to the risk based capital framework of the applicable regulatory authority and pursuant to our internal assessment of our capital needs. Currently, we deploy capital in four primary ways: (1) supporting organic growth, (2) supporting inorganic growth, (3) opportunistically repurchasing shares and (4) retaining capital to support financial strength ratings upgrades. We generally seek returns on our capital deployment of mid-teens or higher.

Organic Growth

We deploy capital to support the organic growth of our primary business channels, including retail, flow reinsurance and institutional products. Organic growth is generally funded through our ongoing operations by capital generated from profitability and the release of capital in connection with the run-off of historical business. Capital generated through our ongoing operations in excess of that deployed into organic growth results in an incremental increase in our excess equity capital, to the extent not otherwise deployed.

Inorganic Growth

We opportunistically deploy capital in connection with block reinsurance and acquisition transactions, which may include corporate carve-outs or whole-company purchases.

Share Repurchases

From time to time, we and our board of directors may determine it appropriate to deploy capital into repurchasing our common shares. Repurchasing undervalued common shares can be one of the most value-generative and lowest risk investments a company can make. We have implemented a share repurchase program that is intended to be opportunistic in nature, whereby repurchase activity is governed by the calculated returns achievable for shareholders based on the publicly traded value of our common shares relative to adjusted book value per share. During the year ended December 31, 2019, we deployed $827 million of capital in connection with the repurchase of our common shares. From the inception of the share repurchase program, we have repurchased 22.4 million common shares for $927 million at an average price-to-adjusted book value multiple of 0.86x.

Ratings Upgrades

As of December 31, 2019, each of our significant insurance subsidiaries is rated "A" by the three rating agencies that evaluate the financial strength of such subsidiaries. See *–Financial Strength Ratings* for further discussion regarding our ratings. To achieve our financial strength ratings aspirations, we may choose to retain additional capital above the level required by the rating agencies to support our operating needs. We believe there are numerous benefits to achieving stronger ratings over time, including increased recognition of and confidence in our financial strength by prospective business partners, particularly within product distribution, as well as potential profitability improvements in certain organic channels though lower funding costs.

Outsourcing

With regard to our U.S. business, we outsource some portion or all of each of the following functions to third-party service providers:

- hosting of financial systems;
- policy administration of existing policies;
- custody;
- information technology development and maintenance; and
- investment management.

We closely monitor our outsourcing partners and integrate their services into our operations. We believe that outsourcing such functions allows us to focus capital and our employees on our core business operations and perform higher utility functions, such as actuarial, product development and risk management. In addition, we believe an outsourcing model provides predictable pricing and service levels and operational flexibility and further allows us to benefit from technological developments that enhance our capabilities, each in a manner that we would not otherwise be able to achieve without investing more of our own capital.

For our retail annuity business, all aspects of new business, including call centers and in-force administration is handled in-house. For some closed in-force blocks of business we partner with Alliance – One Services, Inc., Concentrix Insurance Administrative Solutions Corporation and Infosys McCamish Systems, LLC to provide policy administration services. For annuities issued in support of PRT transactions, we partner with Conduent Health Administration Inc. and Alight Administration Solutions LLC to provide administration services. For information technology services, we use some providers for managed services or supplemental labor, including Tata Consulting Services Limited and UST Global Inc., and for data center, infrastructure and related services we use a combination of OneNeck (a TDS company) and State Street Global Exchange (US) LLC. for hosting, and UST Global Inc. for managed services. For investment management services, we use Apollo. We believe we have a good relationship with our principal outsource service providers.

Hedging Program and Derivatives

We use, and may continue to use, derivatives, including swaps, options, futures and forward contracts, and reinsurance contracts to hedge risks such as current or future changes in the fair value of our assets and liabilities, current or future changes in cash flows, changes in interest rates, equity markets, currency fluctuations and changes in longevity. Our hedging program is focused on hedging our economic risk exposures. See *Item 7A. Quantitative and Qualitative Disclosures About Market Risk* for additional information regarding the risks to which we are subject and the strategies that we employ to manage those risks.

Financial Strength Ratings

Financial strength and credit ratings directly affect our ability to access funding and the related cost of borrowing, the attractiveness of certain of our products to customers, our attractiveness as a reinsurer to potential ceding companies and requirements for derivatives collateral posting. Such ratings are periodically reviewed by the rating agencies.

Credit ratings represent the opinions of rating agencies regarding an entity's ability to repay its indebtedness. Financial strength ratings represent the opinions of rating agencies regarding the financial ability of an insurer or reinsurer to meet its obligations under an insurance policy or reinsurance arrangement and generally involve quantitative and qualitative evaluations by rating agencies of a company's financial condition and operating performance. Generally, rating agencies base their financial strength ratings upon information furnished to them by the respective company and upon their own investigations, studies and assumptions. Financial strength ratings are based upon factors of concern to policyholders, agents, intermediaries and ceding companies and are not directed toward the protection of investors. Credit and financial strength ratings are not recommendations to buy, sell or hold securities and they may be revised or revoked at any time at the sole discretion of the rating organization.

As of December 31, 2019, A.M. Best, Standard & Poor's Rating Services (S&P) and Fitch Ratings (Fitch) had issued credit or financial strength ratings and outlook statements regarding us as follows:

Company	A.M. Best	S&P	Fitch
Athene Holding Ltd.			
Issuer Credit Rating/Counterparty Credit Rating/Issuer Default Rating	bbb	BBB+	BBB+
Outlook	Positive	Stable	Stable
Athene Life Re Ltd.			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Life Re International Ltd.			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Annuity & Life Assurance Company			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Annuity & Life Assurance Company of New York			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Annuity and Life Company			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Life Insurance Company of New York			
Financial Strength Rating	A	Not Rated	Not Rated
Outlook	Stable	Not Rated	Not Rated
Athene Co-Invest Reinsurance Affiliate 1A Ltd. and Athene Co-Invest Reinsurance Affiliate 1B Ltd.			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable
Athene Co-Invest Reinsurance Affiliate International Ltd.			
Financial Strength Rating	A	A	A
Outlook	Stable	Stable	Stable

Rating Agency	Financial Strength Rating Scale	Senior Unsecured Notes Credit Rating Scale
A.M. Best[1]	"A++" to "S"	"aaa" to "rs"
S&P[2]	"AAA" to "R"	"AAA" to "D"
Fitch[3]	"AAA" to "C"	"AAA" to "D"

[1] *A.M. Best's financial strength rating is an independent opinion of an insurer's or reinsurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. The analysis may include comparisons to peers, industry standards and proprietary benchmarks as well as assessments of operating plans, philosophy, management, risk appetite and the implicit or explicit support of a parent or affiliate. A.M. Best's long-term credit ratings reflect its assessment of the ability of an obligor to pay interest and principal in accordance with the terms of the obligation. Ratings from "aa" to "ccc" may be enhanced with a "+" (plus) or "-" (minus) to indicate whether credit quality is near the top or bottom of a category. A.M. Best's short-term credit rating is an opinion as to the ability of the rated entity to meet its senior financial commitments on obligations maturing in generally less than one year.*

[2] *S&P's insurer financial strength rating is a forward-looking opinion about the financial security characteristics of an insurance organization with respect to its ability to pay under its insurance policies and contracts in accordance with their terms. Generic rating categories range from "AAA" to "D". A "+" or "-" indicates relative strength within a generic category. An S&P credit rating is an assessment of default risk, but may incorporate an assessment of relative seniority or ultimate recovery in the event of default. Short-term issuer credit ratings reflect the obligor's creditworthiness over a short-term time horizon.*

[3] *Fitch's financial strength ratings provide an assessment of the financial strength of an insurance organization. The National Insurer Financial Strength Rating is assigned to the insurance company's policyholder obligations, including assumed reinsurance obligations and policyholder obligations, such as guaranteed investment contracts. Within long-term and short-term ratings, a "+" or a "-" may be appended to a rating to denote relative status within major rating categories.*

In addition to the financial strength ratings, rating agencies use an outlook statement to indicate a medium or long-term trend which, if continued, may lead to a rating change. A positive outlook indicates a rating may be raised and a negative outlook indicates a rating may be lowered. A stable outlook is assigned when ratings are not likely to be changed. Outlooks should not be confused with expected stability of the issuer's financial or economic performance. A rating may have a stable outlook to indicate that the rating is not expected to change, but a stable outlook does not preclude a rating agency from changing a rating at any time without notice.

A.M. Best, S&P and Fitch review their ratings of insurance companies from time to time. There can be no assurance that any particular rating will continue for any given period of time or that it will not be changed or withdrawn entirely if, in the respective rating agency's judgment, circumstances so warrant. While the degree to which ratings adjustments will affect sales and persistency is unknown, we believe if our ratings were to be negatively adjusted for any reason, we could experience a material decline in the sales of our products and the persistency of our existing business. See *Item 1A. Risk Factors–Risks Relating to Our Business–A financial strength rating downgrade, potential downgrade or any other negative action by a rating agency could make our product offerings less attractive, inhibit our ability to acquire future business through acquisitions or reinsurance and increase our cost of capital, which could have a material adverse effect on our business* for further discussion about risks associated with financial strength ratings.

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. As a result, scale and the ability to provide value-added services and build long-term relationships are important factors to compete effectively. See *Item 1A. Risk Factors–Risks Relating to Our Business–We operate in a highly competitive industry that includes a number of competitors, many of which are larger and more well-known than we are, which could limit our ability to achieve our growth strategies and could materially and adversely affect our business, financial condition, results of operations, cash flows and prospects* for further discussion on competitive risks. 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.

We face competition in the FIA market from traditional insurance carriers such as Allianz Life Insurance Company of North America (Allianz), American International Group Companies (AIG) and American Equity Investment Life Insurance Company. Principal competitive factors for FIAs are initial crediting rates, reputation for renewal crediting action, product features, brand recognition, customer service, cost, distribution capabilities and financial strength ratings of the provider. Competition may affect, among other matters, both business growth and the pricing of our products and services. See *Item 7.–Management's Discussion and Analysis of Financial Condition and Results of Operations–Industry Trends and Competition–Competition* for a discussion of our ranking and market share within the FIA market and the fixed annuity market more broadly.

Reinsurance markets are highly competitive, as well as cyclical by product and market. As a reinsurer, ALRe competes on the basis of many factors, including, among other things, financial strength, pricing and other terms and conditions of reinsurance agreements, reputation, service and experience in the types of business underwritten. The impact of these and other factors is generally not consistent across lines of business, domestic and international geographical areas and distribution channels. ALRe's competition includes other insurance and reinsurance companies, such as Reinsurance Group of America, Incorporated and Global Atlantic Financial Group Limited (together with its subsidiaries, Global Atlantic).

We face strong competition within our institutional channel. With respect to funding agreements, namely those issued in connection with our FABN program, we compete with other insurers that have active FABN programs, such as MetLife, Inc. (MetLife) and New York Life Insurance Company. Within the funding agreement market, we compete primarily on the basis of perceived financial strength, interest rates and term. With respect to group annuities, we compete with other insurers that offer such annuities, such as MetLife and Prudential Financial, Inc. Within the PRT market, we compete primarily on the basis of price, underwriting and investment capabilities.

Finally, we face competition in the market for acquisition targets and profitable blocks of insurance. Such competition is likely to intensify as insurance businesses become more attractive acquisition targets for both other insurance companies and financial and other institutions and as the already substantial consolidation in the financial services industry continues. We compete for potential acquisition and block reinsurance opportunities based on a number of factors including perceived financial strength, brand recognition, reputation and the pricing we are able to offer, which, to the extent we determine to finance a transaction, is in turn dependent on our ability to do so on suitable terms. We believe that our demonstrated ability to source and consummate large and complex transactions is a competitive advantage over other similar acquisition candidates.

Employees

As of December 31, 2019, we had 1,325 employees located in Bermuda, the United States and Canada. We believe our employee relations are good. None of our employees located in Bermuda, the United States or Canada are subject to collective bargaining agreements and we are not aware of any current efforts to implement such agreements.

Item 1. Business

Regulation

Our U.S. insurance subsidiaries are licensed to transact insurance business in, and are subject to regulation and supervision by, all 50 states of the United States and the District of Columbia. Our Bermuda reinsurance subsidiaries are subject to regulation and supervision by the Bermuda Monetary Authority (BMA) and compliance with all applicable Bermuda law and Bermuda insurance statutes and regulations, including but not limited to Bermuda's Insurance Act 1978 (Bermuda Insurance Act). Our business is also subject to certain international regulations and frameworks as well as the laws and regulations of various other jurisdictions. A summary of certain of the laws, regulations and frameworks to which we are subject is set forth below.

United States

General

Each of our U.S. insurance subsidiaries, with the exception of Athene Re USA IV, Inc. (Athene Re IV) discussed further below, is organized and domiciled in one of the following states: Delaware, Iowa, or New York (each, an Athene Domiciliary State) and is also licensed in such state as an insurer. The insurance department of each Athene Domiciliary State regulates the applicable U.S. insurance subsidiary, and each U.S. insurance subsidiary is regulated by each of the insurance regulators in the other states where such company is authorized to transact insurance business. The primary purpose of such regulatory supervision is to protect policyholders rather than holders of any securities, such as the AHL common shares. Generally, insurance products underwritten by our U.S. insurance subsidiaries must be approved by the insurance regulators in each state in which they are sold.

As part of our acquisition of Aviva USA, we acquired a special-purpose insurance company, Athene Re IV, which is a subsidiary of Athene Annuity and Life Company (AAIA). Athene Re IV is domiciled in Vermont and provides reinsurance to AAIA in order to facilitate the reserve financing associated with a closed block of policies resulting from the demutualization of a prior insurance company currently part of AAIA. As part of the acquisition of AAIA, the liabilities associated with such closed block of insurance policies, including any exposure to payments due from such special-purpose insurance company subsidiary, were reinsured to Accordia. We do not write business that requires the use of captive reinsurers.

State insurance authorities have broad administrative powers over our U.S. insurance subsidiaries with respect to all aspects of their insurance business including: (1) licensing to transact business; (2) licensing of producers; (3) prescribing which assets and liabilities are to be considered in determining statutory surplus; (4) regulating premium rates for certain insurance products; (5) approving policy forms and certain related materials; (6) determining whether a reasonable basis exists as to the suitability of the annuity purchase recommendations producers make; (7) regulating unfair trade and claims practices; (8) establishing reserve requirements, solvency standards and minimum capital requirements (MCR); (9) regulating the amount of dividends that may be paid in any year; (10) regulating the availability of reinsurance or other substitute financing solutions, the terms thereof and the ability of an insurer to take credit on its financial statements for insurance ceded to reinsurers or other substitute financing solutions; (11) fixing maximum interest rates on life insurance policy loans, minimum crediting rates on accumulation products and minimum allowable surrender values; (12) regulating the type, amounts and valuations of investments permitted; (13) setting parameters for transactions with affiliates; and (14) regulating other matters.

The rates, forms, terms and conditions of our U.S. insurance subsidiaries' reinsurance agreements with unaffiliated third parties generally are not directly subject to regulation by any state insurance department in the United States. This contrasts with primary insurance where, as discussed above, the policy forms and premium rates are generally regulated by state insurance departments.

From time to time, increased scrutiny has been placed upon the U.S. insurance regulatory framework, and a number of state legislatures have considered or enacted legislative measures that alter, and in many cases increase, state authority to regulate insurance and reinsurance companies. In addition to legislative initiatives of this type, the National Association of Insurance Commissioners (NAIC) and state insurance regulators are regularly involved in a process of reexamining existing laws and regulations and their application to insurance and reinsurance companies.

Furthermore, while the federal government in most contexts currently does not directly regulate the insurance business, federal legislation and administrative policies in a number of areas, such as employee benefits regulation, age, sex and disability-based discrimination, financial services regulation and federal taxation, can significantly affect the insurance business. It is not possible to predict the future impact of changing regulation on our operations. See *Item 1A. Risk Factors–Risks Relating to Insurance and Other Regulatory Matters*.

NAIC

The NAIC is an organization, the mandate of which is to benefit state insurance regulatory authorities and consumers by promulgating model insurance laws and regulations for adoption by the states. The NAIC also provides standardized insurance industry accounting and reporting guidance through the NAIC Accounting Manual. However, model insurance laws and regulations are only effective when adopted by the states, and statutory accounting and reporting principles continue to be established by individual state laws, regulations and permitted practices. Changes to the NAIC Accounting Manual or modifications by the various state insurance departments may affect the statutory capital and surplus of our U.S. insurance subsidiaries.

Some of the NAIC pronouncements, particularly as they affect accounting issues, take effect automatically in the various states without affirmative action by the states. Statutes, regulations and interpretations may be applied with retroactive impact, particularly in areas such as accounting and reserve requirements. Also, regulatory actions with prospective impact can potentially have a significant impact on products that we currently sell. The NAIC continues to work to reform state regulation in various areas, including comprehensive reforms relating to certain reserving practices.

In December 2012, the NAIC approved a new valuation manual containing a principle-based approach to life insurance company reserves. Principle-based reserving is designed to tailor the reserving process to specific products in an effort to create a principle-based modeling approach to reserving rather than the factor-based approach historically employed. Pursuant to the NAIC's Standard Valuation Law (SVL) principle-based reserving became effective prospectively on January 1, 2017 followed by a three-year phase-in period for business issued on or after this date. Delaware and Iowa have each adopted a form of the SVL. New York has enacted legislation to adopt principle-based reserving, which became effective by emergency regulation for life insurers on December 7, 2018 and for all others on January 1, 2020.

Restrictions on Dividends and Other Distributions

Current law of two of the Athene Domiciliary States, Delaware and Iowa, permits the payment of dividends or distributions which, together with dividends or distributions paid during the preceding twelve months do not exceed the greater of (a) 10% of the insurer's surplus as regards policyholders as of the immediately preceding year end or (b) the net gain from operations of the insurer for the preceding twelve-month period ending as of the immediately preceding year end. Current law of New York permits the payment of dividends or distributions which, together with dividends or distributions paid during any calendar year, (1) is out of earned surplus and does not exceed the greater of (a) 10% of the insurer's surplus as regards policyholders as of the end of the immediately preceding calendar year or (b) the net gain from operations of the insurer for the immediately preceding calendar year, not including realized capital gains, not to exceed 30% of the insurer's surplus as regards policyholders as of the end of the immediately preceding calendar year or (2) do not exceed the lesser of (a) 10% of the insurer's surplus as regards policyholders as of the end of the immediately preceding calendar year or (b) the net gain from operations of the insurer for the immediately preceding calendar year, not including realized capital gains. Any proposed dividend in excess of these amounts is considered an extraordinary dividend or extraordinary distribution and may not be paid until it has been approved, or a 30-day waiting period has passed during which it has not been disapproved, by the Commissioner. Additionally, under current law of the Athene Domiciliary States, AAIA may only pay dividends from the insurer's earned profits on its business, which shall not include contributed capital or contributed surplus, AADE may only pay dividends from that part of its available and accumulated surplus funds which is derived from realized net operating profits on its business and realized capital gains, and ALICNY may only pay dividends pursuant to the "greater of" standard described above from that part of its positive unassigned funds, excluding 85% of the change in net unrealized capital gains or losses less capital gains tax, for the immediately preceding calendar year. The Athene Domiciliary States' insurance laws and regulations also require that each of our U.S. insurance subsidiaries' surplus as regards policyholders following any dividend or distribution be reasonable in relation to such U.S. insurance subsidiary's outstanding liabilities and adequate to meet its financial needs.

Credit for Reinsurance Ceded

The ability of a ceding insurer to take reserve and capital credit for the reinsurance purchased from reinsurance companies is a significant component of reinsurance regulation. Typically, a ceding insurer will only enter into a reinsurance agreement if it can obtain credit on its statutory basis financial statements against its reserves (report lower net reserves) and/or toward its MCR (the denominator in its RBC calculation) for the business ceded to the reinsurer. With respect to U.S.-domiciled ceding companies, credit is usually granted when the reinsurer is licensed or accredited in the state where the ceding company is domiciled. States also generally permit ceding insurers to take credit for reinsurance if the reinsurer: (1) is domiciled in a state with a credit for reinsurance law that is substantially similar to the credit for reinsurance law in the ceding insurer's state of domicile, and (2) meets certain financial requirements. Credit for reinsurance purchased from a reinsurer that does not meet the foregoing conditions is generally allowed to the extent that such reinsurer secures its obligations with qualified collateral.

AARe has provided, and may in the future provide, reinsurance to our U.S. insurance subsidiaries in the normal course of business. AAIA has entered into a funds withheld coinsurance agreement with AARe under which it will cede to AARe a 100% quota share of its respective obligations to repay the principal upon maturity or earlier termination and to make periodic interest payments under funding agreements issued by it. AADE has entered into a similar arrangement on a modco basis with ALRe, subject in certain cases to amounts retained by AADE and/or periodic payments based on reserve levels. Our U.S. insurance subsidiaries have similar arrangements with AARe with respect to substantially all of their other core business, under which between 80% and 100% of all such business is ceded to AARe on a modco basis, net of third party reinsurance. None of our Bermuda reinsurance subsidiaries are licensed, accredited or approved in any state in the U.S. and, consequently, each must collateralize its obligations to our U.S. insurance subsidiaries or any third-party cedant in order for any of our U.S. insurance subsidiaries or any third-party cedant to obtain credit against its reserves on its statutory basis financial statements (unless the basis for such reinsurance transaction is modco). AARe and ALRe are both domiciled in Bermuda, which has a regulatory regime deemed to be equivalent to the European Union (EU) Directive (2009/138/EC) (Solvency II).

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) provides that only the state in which a ceding insurer is domiciled may regulate the financial statement credit for reinsurance taken by that ceding insurer; other states are no longer able to require additional collateral from unauthorized reinsurers or otherwise impose their own credit for reinsurance laws on ceding insurers that are licensed, but not domiciled, in such other states.

Under the amended Credit for Reinsurance Model Law and Regulation, collateral requirements may be reduced from 100% for unauthorized or non-accredited reinsurers meeting certain criteria as to financial strength and reliability that are domiciled in jurisdictions that are found to have strong systems of insurance regulation (each, a "Qualified Jurisdiction"). Pursuant to the Credit for Reinsurance Model Law and Regulation reinsurers are eligible to apply for "certified reinsurer" status and certified reinsurers are permitted to post collateral at reduced levels in the respective state. Delaware and Iowa have adopted the reduced collateral requirements under the Credit for Reinsurance Model Law and Regulation, and New York has adopted the reduced collateral requirements under a predecessor statute.

The NAIC recently completed its five-year re-evaluation of Bermuda and re-approved Bermuda as a "Qualified Jurisdiction" with respect to certain classes of insurers, including Class C and Class E insurers such as our Bermuda reinsurance subsidiaries. The recognition of Bermuda as a Qualified Jurisdiction permits our Bermuda reinsurance subsidiaries to apply for "certified reinsurer" status with the ability (if so certified) to post reduced collateral for coverage provided by our Bermuda reinsurance subsidiaries to ceding insurers in the U.S. (including our U.S. insurance subsidiaries). The amount of collateral required to be posted by an insurer with this designation varies based upon the insurers' credit rating. ALRe has been approved by the Delaware Department of Insurance as a certified reinsurer and is therefore eligible to post reduced collateral equal to 20% of statutory reserves ceded under coinsurance agreements with ceding companies domiciled in the state of Delaware, including AADE, with respect to new reinsurance agreements. ALRe has not been approved as a certified reinsurer in any other jurisdiction.

In June of 2019, the NAIC adopted revisions to the Credit for Reinsurance Model Law and Regulation to allow a ceding insurer to take credit for reinsurance ceded to a qualifying unauthorized reinsurer without collateral if the reinsurer satisfies certain criteria, including being domiciled in a "reciprocal jurisdiction." The NAIC is currently reviewing a new accreditation standard that would require states to adopt the 2019 revisions to the Credit for Reinsurance Model Law and Regulation (including the recognition of all categories of "reciprocal jurisdictions") no later than September 1, 2022. The NAIC has approved Bermuda as a "reciprocal jurisdiction" and as a result, it is expected that as states adopt the 2019 revisions to the Credit for Reinsurance Model Law and Regulation, reinsurers domiciled in Bermuda, such as our Bermuda reinsurance subsidiaries, will receive similar treatment to reinsurers domiciled in covered agreement jurisdictions and will not need to post collateral in order for ceding insurers to take credit for reinsurance ceded to our Bermuda reinsurance subsidiaries.

Statutory Investment Valuation Reserves

Life insurance companies domiciled in the U.S. are required to establish an asset valuation reserve (AVR) to stabilize statutory policyholder surplus from fluctuations in the market value of investments. The AVR consists of two components: (1) a "default component" for possible credit-related losses on fixed maturity investments and (2) an "equity component" for possible market-value losses on all types of equity investments, including real estate-related investments. Although future additions to the AVR will reduce the future statutory capital and surplus of our U.S. insurance subsidiaries, we do not believe that the impact under current regulations of such reserve requirements will materially affect our U.S. insurance subsidiaries. Insurers domiciled in the U.S. also are required to establish an interest maintenance reserve (IMR) for net realized capital gains and losses, net of tax, on fixed maturity investments where such gains and losses are attributable to changes in interest rates, as opposed to credit-related causes. The IMR provides a buffer to our statutory capital and surplus in the event we have to sell securities in an unrealized loss position. The IMR is required to be amortized into statutory earnings on a basis reflecting the remaining period to maturity of the fixed maturity securities. These reserves are required by state insurance regulatory authorities to be established as liabilities on a life insurer's statutory financial statements and may also be included in the liabilities assumed by our U.S. insurance subsidiaries pursuant to their reinsurance agreements with U.S.-based life insurer ceding companies.

Policy and Contract Reserve Adequacy Analysis

The Athene Domiciliary States and other states have adopted laws and regulations with respect to policy and contract reserve sufficiency. Under applicable insurance laws, our U.S. insurance subsidiaries are each required to annually conduct an analysis of the adequacy of all life insurance and annuity statutory reserves. A qualified actuary appointed by each such subsidiary's board must submit an opinion annually for each such subsidiary which states that the statutory reserves make adequate provision, according to accepted actuarial standards of practice, for the anticipated cash flows resulting from the contractual obligations and related expenses of such subsidiary. The adequacy of the statutory reserves is considered in light of the assets held by such U.S. insurance subsidiary with respect to such reserves and related actuarial items, including, but not limited to, the investment earnings on such assets and the consideration anticipated to be received and retained under the related policies and contracts. At a minimum, such testing is done over a number of economic scenarios prescribed by the states, with the scenarios designed to stress anticipated cash flows for higher and/or lower future levels of interest rates. Our U.S. insurance subsidiaries may find it necessary to increase reserves, which may decrease their statutory surplus, in order to pass additional cash flow testing requirements.

U.S. Statutory Reports and Regulatory Examinations

Our U.S. insurance subsidiaries are required to file detailed annual reports, including financial statements, in accordance with prescribed statutory accounting rules, with regulatory officials in the jurisdictions in which they conduct business. In addition, each U.S. insurance subsidiary is required to file quarterly reports prepared on the same basis, though with considerably less detail.

As part of their routine regulatory oversight process, state insurance departments conduct periodic detailed examinations, generally once every three to five years, of the books, records, accounts and operations of insurance companies that are domiciled in their states. Examinations are generally carried out in cooperation with the insurance departments of other, non-domiciliary states under guidelines promulgated by the NAIC. In May 2019, we completed such an examination for the period from January 1, 2014 through December 31, 2017. This exam was led by the Delaware Department of Insurance in coordination with the Iowa Insurance Division and the New York State Department of Financial Services (NYSDFS). In connection with the exam, the Delaware Department of Insurance conducted an exam of AADE and Athene Life Insurance Company (ALIC), the Iowa Insurance Division conducted an exam of AAIA and Structured Annuity Reinsurance Company (STAR), and the NYSDFS conducted an exam of Athene Annuity & Life Assurance Company of New York (AANY) and ALICNY. The exam resulted in no significant findings.

Vermont insurance laws and regulations applicable to Athene Re IV require it to file financial statements with the Commissioner of the Insurance Division of the Vermont Department of Financial Regulation. Additionally, Athene Re IV is subject to periodic financial examinations by the Insurance Division of the Vermont Department of Financial Regulation.

Market Conduct Regulation

State insurance laws and regulations include numerous provisions governing the marketplace activities of insurers, including provisions governing claims settlement practices, the form and content of disclosure to consumers, illustrations, advertising, sales and complaint process practices. State regulatory authorities generally enforce these provisions through periodic market conduct examinations. In addition, our U.S. insurance subsidiaries must file, and in many jurisdictions and for some lines of business, obtain regulatory approval for, rates and forms relating to the insurance written in the jurisdictions in which they operate. Our U.S. insurance subsidiaries are currently undergoing the following market conduct examinations, each in the ordinary course of business: (1) the NYSDFS is conducting a market conduct examination of AANY, (2) the Iowa Insurance Division is conducting a market conduct examination of AAIA, (3) the Maryland Insurance Administration is conducting a market conduct examination of AAIA, (4) the Illinois Department of Insurance is conducting a market conduct examination of AAIA and (5) the Minnesota Department of Commerce is conducting a market conduct examination of AAIA and AADE. The California Department of Insurance is completing a review of the rating and underwriting practices of AAIA, AADE and AANY and the Massachusetts Division of Insurance is completing a limited scope market analysis of AAIA. On January 14, 2020, the Missouri Department of Insurance, Financial Institutions & Professional Registration concluded a market conduct exam of AAIA with no significant findings.

Capital Requirements

Regulators of each state have discretionary authority in connection with our U.S. insurance subsidiaries' continued licensing to limit or prohibit sales to policyholders within their respective states if, in their judgment, the regulators determine that such entities have not maintained the required level of minimum surplus or capital or that the further transaction of business would be hazardous to policyholders.

In order to enhance the regulation of insurers' solvency, the NAIC adopted a model law to implement RBC requirements for life, health and property and casualty insurance and reinsurance companies. All states have adopted the NAIC's model law or a substantively similar law. The NAIC Risk-Based Capital for Insurers Model Act requires life insurance companies to submit an annual report (the Risk-Based Capital Report), which compares an insurer's total adjusted capital (TAC) to its authorized control level RBC (ACL), each such term as defined pursuant to applicable state law. A company's RBC is calculated by using a specified formula that applies factors to various risks inherent in the insurer's operations, including risks attributable to its assets, underwriting experience, interest rates and other business expenses. The factors are higher for those items deemed to have greater underlying risk and lower for items deemed to have less underlying risk. Statutory RBC is measured on two bases, ACL and company action level RBC (CAL), with ACL calculated as one-half of CAL. Regulators typically use ACL in assessing companies and reviewing solvency requirements. Companies themselves typically report and are compared using the CAL standard.

The Risk-Based Capital Report is used by regulators to set in motion appropriate regulatory actions relating to insurers that show indications of weak or deteriorating status. RBC is an additional standard for MCR that insurers must meet to avoid being placed in rehabilitation or liquidation by regulators. The annual Risk-Based Capital Report, and the information contained therein, is not intended by the NAIC as a means to rank insurers.

RBC is a method of measuring the level of capital appropriate for an insurance company to support its overall business operations, in light of its size and risk profile. It provides a means of assessing capital adequacy, where the degree of risk taken by the insurer is the primary determinant. The value of an insurer's TAC in relation to its RBC, together with its trend in its TAC, is used as a basis for determining regulatory action that a state insurance regulator may be authorized or required to take with respect to an insurer. The four action levels include:

- CAL: The insurer is required to submit a plan for corrective action when its TAC is equal to or less than 200% of ACL;
- Regulatory Action Level: The insurer is required to submit a plan for corrective action and is subject to examination, analysis and specific corrective action when its TAC is equal to or less than 150% of ACL;
- ACL: Regulators may place the insurer under regulatory control when its TAC is equal to or less than 100% of ACL; and
- Mandatory Control Level: Regulators are required to place the insurer under regulatory control when its TAC is equal to or less than 70% of ACL.

TAC and RBC are calculated annually by insurers, as of December 31 of each year. As of December 31, 2019, each of our U.S. insurance subsidiaries' TAC was significantly in excess of the levels that would prompt regulatory action under the laws of the Athene Domiciliary States. As of December 31, 2019, the CAL RBC ratio of AADE (U.S. RBC ratio) was 429%. The calculation of RBC requires certain judgments to be made, and, accordingly, our U.S. insurance subsidiaries' current RBC may be greater or less than the RBC calculated as of any date of determination.

Insurance Regulatory Information System Ratios

The NAIC has established the Insurance Regulatory Information System (IRIS) to assist state insurance departments in their oversight of the financial condition of insurance companies operating in their respective states. IRIS is a series of financial ratios calculated by the NAIC based on financial information submitted by insurers on an annual basis. Each ratio has an established "usual range" of results. The NAIC shares the IRIS ratios calculated for each insurer with the interested state insurance departments. Generally, an insurance company will be required to explain ratios that fall outside the usual range, and may be subject to regulatory scrutiny and action if one or more of its ratios fall outside the specified ranges. None of our U.S. insurance subsidiaries are currently subject to non-ordinary course regulatory scrutiny based on their IRIS ratios.

Regulation of Investments

Each of our U.S. insurance subsidiaries is subject to laws and regulations in each Athene Domiciliary State that require diversification of its investment portfolio and limit the amounts of investments in certain asset categories, such as below-investment grade fixed income securities, real estate-related equity, partnerships, other equity investments, derivatives and alternative investments. Failure to comply with these laws and regulations would cause investments exceeding regulatory limitations to be treated as non-admitted assets for purposes of measuring statutory surplus and, in some instances, could require the divestiture of such non-qualifying investments. Accordingly, the investment laws in the Athene Domiciliary States could prevent our U.S. insurance subsidiaries from pursuing investment opportunities which they believe are beneficial to their shareholders, which could in turn preclude us from realizing our investment objectives.

Guaranty Associations

All 50 states and the District of Columbia have insurance guaranty fund laws requiring insurance companies doing business within those jurisdictions to participate in guaranty associations. Guaranty associations are organized to cover, subject to limits, contractual obligations under insurance policies issued by life insurance companies which later become impaired or insolvent. These associations levy assessments, up to prescribed limits, on each member insurer doing business in a particular state on the basis of their proportionate share of the premiums written by all member insurers in the lines of business in which the impaired or insolvent insurer previously engaged. Most states limit assessments in any year to 2% of the insurer's average annual premium for the three years preceding the calendar year in which the impaired insurer became impaired or insolvent. Some states permit member insurers to recover assessments paid through full or partial premium tax offsets, usually over a period of years. Assessments levied against our U.S. insurance subsidiaries by guaranty associations during the year ended December 31, 2019 were not material. While we cannot accurately predict the amount of future assessments or future insolvencies of competitors which would lead to such assessments, we believe that assessments with respect to pending insurance company impairments and insolvencies will not have a material effect on our financial condition, results of operations or cash flows.

Federal Oversight

Although the insurance business in the United States is primarily regulated by the states, federal initiatives can affect the businesses of our U.S. insurance subsidiaries in a variety of ways. From time to time, federal measures are proposed which may significantly affect the insurance business. These areas include financial services regulation, securities regulation, derivatives regulation, pension regulation, money laundering, privacy regulation, taxation and the economic and trade sanctions implemented by the Office of Foreign Assets Control (OFAC). OFAC maintains and enforces economic sanctions against certain foreign countries and groups and prohibits U.S. persons from engaging in certain transactions with certain persons or entities. OFAC has imposed civil penalties on persons, including insurance and reinsurance companies, arising from violations of its economic sanctions program. In addition, various forms of direct and indirect federal regulation of insurance have been proposed from time to time, including proposals for the establishment of an optional federal charter for insurance companies.

Title I of the Dodd-Frank Act established the Financial Stability Oversight Council (FSOC) and authorized the FSOC to designate non-bank financial companies as systemically important financial institutions (SIFIs), thereby subjecting them to enhanced prudential standards and supervision by the Board of Governors of the Federal Reserve System (Federal Reserve). The prudential standards for non-bank SIFIs include enhanced RBC requirements, leverage limits, liquidity requirements, single counterparty exposure limits, governance requirements for risk management, stress test requirements, special debt-to-equity limits for certain companies, early remediation procedures, and recovery and resolution planning. There are currently no such non-bank financial companies designated by FSOC as "systemically significant." The Economic Growth, Regulatory Relief and Consumer Protection Act, which became effective May 24, 2018, made limited changes to Title I of the Dodd-Frank Act. In March 2019, the FSOC issued for public comment proposed guidance regarding a revised process for designating non-bank SIFIs. The proposed guidance would substantially change the FSOC's existing procedures, including by shifting to a process that emphasizes the activities-based approach to risk assessment. As a result, there is considerable uncertainty as to the future of federal regulation of non-bank SIFIs and/or systemically important activities.

The Dodd-Frank Act, which effected the most far-reaching overhaul of financial regulation in the U.S. in decades, established the Federal Insurance Office within the Treasury Department. While he or she does not currently have general supervisory or regulatory authority over the business of insurance, the Director of the Federal Insurance Office performs various functions with respect to insurance, including serving as a non-voting member of the FSOC and making recommendations to the FSOC regarding non-bank financial companies to be designated as SIFIs.

The Dodd-Frank Act also authorizes the Federal Insurance Office to assist the Secretary of the Treasury Department in negotiating covered agreements. A covered agreement is an agreement between the United States and one or more foreign governments, authorities or regulatory entities, regarding prudential measures with respect to insurance or reinsurance. The Federal Insurance Office is further charged with determining, in accordance with the procedures and standards established under the Dodd-Frank Act, whether state laws are preempted by a covered agreement. Pursuant to this authority, in September 2017, the U.S. and the EU signed a covered agreement to address, among other things, reinsurance collateral requirements (EU Covered Agreement) and the United States released a "Statement of the United States on the Covered Agreement with the European Union," (Policy Statement) providing the United States' interpretation of certain provisions in the EU Covered Agreement. The Policy Statement provides that the United States expects that the group capital calculation, which is currently being developed by the NAIC, will satisfy the EU Covered Agreement's group capital assessment requirement. In addition, on December 18, 2018, the the Bilateral Agreement between the U.S. and the UK on Prudential Measures Regarding Insurance and Reinsurance (UK Covered Agreement) was signed in anticipation of the UK's exit from the EU. U.S. state regulators have until September 22, 2022 to adopt reinsurance reforms removing reinsurance collateral requirements for EU and UK reinsurers that meet the prescribed minimum conditions set forth in the applicable EU Covered Agreement or UK Covered Agreement or else state laws imposing such reinsurance collateral requirements may be subject to federal preemption. The NAIC has adopted amendments to the Credit for Reinsurance Model Law and Regulation that would, if adopted by state legislatures, implement the reinsurance collateral provisions of the EU Covered Agreement and UK Covered Agreement. The reinsurance collateral provisions of the EU Covered Agreement and the UK Covered Agreement may increase competition, in particular with respect to pricing for reinsurance transactions, by lowering the cost at which competitors of ALRe are able to provide reinsurance to U.S. insurers. We cannot predict with any certainty what impact the EU Covered Agreement or UK Covered Agreement will have on our business, whether either agreement will be implemented or what the impact of such implementation will be on our business.

FIAs and other Annuity Products

In recent years, the SEC and state securities regulators have questioned whether FIAs, such as those sold by our U.S. insurance subsidiaries, should be treated as securities under the federal and state securities laws rather than as insurance products exempted from such laws. On December 17, 2008, the SEC voted to approve Rule 151A, and apply federal securities oversight to FIAs issued on or after January 12, 2011. On July 12, 2010, the District of Columbia Circuit Court of Appeals vacated Rule 151A. Under the Dodd-Frank Act, annuities that meet specific requirements are specifically exempted from being treated as securities by the SEC. We expect that the types of FIAs that our U.S. insurance subsidiaries currently sell will meet applicable requirements for exemption from treatment as securities and therefore will remain exempt from being treated as securities by the SEC and state securities regulators. However, there can be no assurance that federal or state securities laws or state insurance laws and regulations will not be amended or interpreted to impose further requirements on FIAs. Treatment of these products as securities would require additional registration and licensing of these products and the agents selling them, as well as cause our U.S. insurance subsidiaries to seek new or additional marketing relationships for these products, any of which may impose significant restrictions on their ability to conduct business as currently operated.

NYSDFS Insurance Regulation 210: Life Insurance and Annuity Non-Guaranteed Elements establishes standards for the determination and readjustment of non-guaranteed elements (NGEs) that may vary at the insurer's discretion for life insurance policies and annuity contracts delivered or issued in New York. In addition, the regulation establishes guidelines for related disclosure to NYSDFS and policy owners prior to any adverse change in NGEs. The regulation applies to all individual life insurance policies, individual annuity contracts and certain group life insurance and group annuity certificates that contain NGEs. NGEs include premiums, expense charges, cost of insurance rates and interest credits.

Unclaimed Property Laws

Each of our U.S. insurance subsidiaries is subject to the laws and regulations of states and other jurisdictions concerning the identification, reporting and escheatment of abandoned or unclaimed money or property. State treasurers, controllers and revenue departments have been scrutinizing escheatment practices of life insurance companies with regard to unclaimed life insurance and annuity death benefits. As with state insurance regulators, state revenue authorities have been looking at how life insurance companies handle unreported deaths, maturity of life insurance and annuity contracts, and contracts that have exceeded limiting age to determine if the companies are appropriately determining when death benefits or other payments under the contracts should be treated as unclaimed property. State treasurers, controllers and revenue departments have audited life insurance companies, required escheatments and imposed interest penalties on amounts escheated for failure to escheat death benefits or other contract benefits when beneficiaries could not be found at the expiration of statutory dormancy periods.

Several states have enacted new laws or adopted new regulations mandating the use by insurance companies of the U.S. Social Security Administration's Social Security Death Index (Death Master File) or other similar databases to identify deceased persons and to implement more rigorous processes to find beneficiaries. In 2013, prior to our acquisition of Aviva USA, it entered into multi-state settlement agreements with the insurance regulators and treasurers for 48 states in connection with certain of its subsidiaries' use of the Death Master File. As part of the settlement, AAIA and its subsidiary ALICNY agreed to pay a $4 million assessment for examination, compliance and monitoring costs without admitting any liability or wrongdoing, and further agreed to adopt policies and procedures reasonably designed to ensure timely payment of valid claims to beneficiaries in accordance with insurance laws and to timely report and remit unclaimed proceeds to the appropriate states in connection with unpaid property laws. Our U.S. insurance subsidiaries could continue to be subject to risks related to unpaid benefits, the Death Master File, and the procedures required by the prior multi-state settlement as they relate to our annuity business. Furthermore, administrative challenges associated with implementing the procedures described above may make compliance with the multi-state settlement and applicable law difficult and could have a material and adverse effect on our results of operations.

AADE is currently undergoing a multi-state unclaimed property examination led by Verus Financial, on behalf of California, Florida, Georgia, Indiana, Louisiana, North Carolina, Ohio, Pennsylvania, Tennessee and Texas. We do not expect this matter will have a material adverse effect on our business, financial condition, results of operations or cash flows. AADE was also a defendant in a lawsuit filed by the West Virginia Treasurer, State of West Virginia ex rel. John D. Perdue v. Liberty Life Ins. Co., Case No. 12-C-419, pursuant to which the Treasurer alleged that Liberty Life, now known as AADE, failed to adopt reasonable procedures, such as using the Death Master File, to identify deceased insureds with unpaid death benefits and timely escheat those unclaimed benefits to the state. The Treasurer accordingly sought to recover unpaid death benefits, statutory interest and penalties. During September 2019, AADE resolved the matter with the Treasurer for an immaterial amount.

Regulation of OTC Derivatives

We use derivatives to mitigate a wide range of risks in connection with our businesses, including options purchased to hedge the derivatives embedded in the FIAs that we have issued, and swaps, futures and/or options may be used to manage the impact of increased benefit exposures from our annuity products that offer guaranteed benefits as well as market exposures. Title VII of the Dodd-Frank Act creates a comprehensive framework for the federal oversight and regulation of the OTC derivatives market and entities, such as us, that participate in the derivatives market and requires U.S. regulators to promulgate rules and regulations implementing its provisions. Regulations have been finalized and implemented in many areas and are being finalized for implementation in others.

Title VII of the Dodd-Frank Act divides the regulatory responsibility for swaps in the United States between the SEC and the Commodity Futures Trading Commission (CFTC). The CFTC regulates swaps and swap entities, and the SEC regulates security-based swaps and security-based swap entities. The CFTC and the SEC have jointly finalized certain regulations under Title VII of the Dodd-Frank Act, including critical rulemakings on the definitions of "swap," "security-based swap," "swap dealer," and "security-based swap dealer." In addition, the CFTC has substantially finalized its required rulemaking under Title VII of the Dodd-Frank Act, including regulations relating to the registration and regulation of swap dealers and swap execution facilities, reporting, recordkeeping, mandatory clearing, mandatory on-facility trade execution and mandatory minimum margin requirements. The SEC has yet to implement its regulatory regime for security-based swaps and market participants transacting in security-based swaps. As a result of this bifurcation and the different pace at which the agencies have promulgated and implemented regulations, different transactions are subject to different levels of regulation.

Title VII of the Dodd-Frank Act and the CFTC rules thereunder require us, in connection with certain swap transactions, to comply with mandatory clearing and on-facility trade execution requirements, and it is anticipated that the types of swaps subject to these requirements will be expanded over time. In addition, regulations promulgated under Title VII of the Dodd-Frank Act require us to comply with mandatory minimum margin requirements for uncleared swaps and, in some instances, uncleared security-based swaps. Derivative clearing requirements and mandatory margin requirements have increased the cost of our risk mitigation and have had other implications as well. For example, increased margin requirements, combined with netting restrictions and restrictions on securities that qualify as eligible collateral are expected to reduce our liquidity and require increased holdings of cash and highly liquid securities with lower yields causing a reduction in income. In addition, the requirement that certain trades be centrally cleared through clearinghouses subjects us to documentation that is significantly more counterparty-favorable and entitles counterparties to unilaterally change terms such as trading limits and the amount of margin required. The ability of such counterparties to take such actions could create trading disruptions and liquidity concerns. Finally, the requirement that certain trades be centrally cleared through clearinghouses concentrates counterparty risk in both clearinghouses and clearing members. The failure of a clearinghouse could have a significant impact on the financial system. Even if a clearinghouse does not fail, large losses could force significant capital calls on clearinghouse members during a financial crisis, which could lead clearinghouse members to default. Because clearinghouses are still developing and the related bankruptcy process is untested, it is difficult to anticipate or identify all risks related to the concentration of counterparty risk in clearinghouses and clearing members and the risk of a clearinghouse default.

Title VII of the Dodd-Frank Act and new regulations thereunder and similar regulations adopted by non-U.S. jurisdictions that may indirectly apply to us could significantly increase the cost of derivative contracts, reduce the availability of derivatives to protect against risks we encounter, reduce our ability to monetize or restructure our existing derivative contracts, and increase our credit risk exposure. If we reduce our use of derivatives as a result of such regulations, our results of operations may become more volatile and our cash flows may be less predictable which could adversely affect our financial performance. Additionally, we have always been subject to the risk that hedging and other management procedures might prove ineffective in reducing the risks to which insurance policies expose us or that unanticipated policyholder behavior or mortality, combined with adverse market events, could produce economic losses beyond the scope of the risk management techniques employed. Any such losses could be increased by the increased cost of entering into derivatives and the reduced availability of customized derivatives that might result from the implementation of Title VII of the Dodd-Frank Act and other similar regulations.

Notwithstanding the foregoing, the long-term future of Title VII of the Dodd-Frank Act and the related regulations implemented by the CFTC and the SEC and their impact on us remain uncertain and unpredictable, particularly in light of actions taken by the federal government. Two executive orders were issued in 2017 that established core principles for regulating the U.S. financial system and provided a framework for comprehensive change to current financial regulation. Additionally, the executive orders required federal agencies to designate a "Regulatory Reform Officer" and a "Regulatory Reform Task Force" to evaluate existing regulations and make recommendations to repeal, replace or modify regulations that, among others, inhibit job creation, are ineffective or impose costs that exceed benefits. In response to these executive orders, the CFTC announced its project to simplify and modernize the CFTC's rules and regulations regarding derivatives within its jurisdiction. The CFTC has published various white papers that identify areas for regulatory streamlining and clarity and has indicated that staff is working on regulatory revisions to existing rules. While the CFTC has published some final rules reflecting regulatory revisions, it is anticipated that further regulatory revisions will continue to be forthcoming from the CFTC as a result of the on-going project. Additionally, the SEC has adopted certain rules to implement the regulation of security-based swaps; however, at this point it is uncertain when the SEC will adopt the remainder of its proposed rules which will trigger the effectiveness of the security-based swap regulatory scheme. We cannot predict the impact of the executive orders on Title VII of the Dodd-Frank Act, the SEC's security-based swap regulatory scheme or the derivatives regulatory schemes in other jurisdictions on our derivatives activities, if any.

Consumer Protection Laws and Privacy and Data Security Regulation

Numerous other federal and state laws also affect our operations, including federal and state consumer protection laws. As part of the Dodd-Frank Act, Congress established the Consumer Financial Protection Bureau (CFPB) to supervise and regulate institutions that provide certain financial products and services to consumers. Although the consumer financial services subject to the CFPB's jurisdiction generally exclude insurance business of the kind in which our U.S. insurance subsidiaries engage, the CFPB does have authority to regulate non-insurance consumer services which are offered by issuers of securities in our U.S. insurance subsidiaries' investment portfolio.

Federal and state laws and regulations require financial institutions, including insurers, to protect the security and confidentiality of nonpublic personal information, including certain health-related and customer information, and to notify customers and other individuals about their policies and practices relating to their collection and disclosure of health-related and customer information and their practices relating to protecting the security and confidentiality of that information. State laws regulate use and disclosure of Social Security numbers and federal and state laws require notice to affected individuals, law enforcement, regulators and others if there is a breach of the security of certain nonpublic personal information, including Social Security numbers. In addition, state laws and regulations restrict the disclosure of the medical record and health status information obtained by insurers.

Federal and state lawmakers and regulatory bodies may be expected to consider additional or more detailed regulation regarding these subjects and the privacy and security of nonpublic personal information. Furthermore, the issues surrounding data security and the safeguarding of consumers' protected information are under increasing regulatory scrutiny by state and federal regulators, particularly in light of the number and severity of recent U.S. companies' data breaches. The Federal Trade Commission, the Federal Bureau of Investigation, the Federal Communications Commission, the NYSDFS and the NAIC have undertaken various studies, reports and actions regarding data security for entities under their respective supervision. Some states have enacted new insurance laws that require certain regulated entities to implement and maintain comprehensive information security programs to safeguard the personal information of insureds and enrollees.

On March 1, 2017, the NYSDFS enacted 23 NYCRR 500, a cybersecurity regulation governing financial companies. This rule requires banks, insurance companies, and other financial services institutions regulated by the NYSDFS, including us, to establish and maintain a cybersecurity program "designed to protect consumers and ensure the safety and soundness of New York State's financial services industry." Since the rule's effective date, we have committed significant time and resources to comply with the rule's requirements. We anticipate that the NYSDFS will continue to examine the cybersecurity programs of financial institutions in the future and such examinations may result in additional regulatory scrutiny, expenditure of resources and possible regulatory actions and reputational harm.

In October 2017, the NAIC adopted a new Insurance Data Security Model Law, which is intended to establish the standards for data security and standards for the investigation and notification of data breaches applicable to insurance licensees in states adopting such law, with provisions that are generally consistent with the NYSDFS cybersecurity regulation discussed above. Under the model law, it is intended that companies that are compliant with the NYSDFS cybersecurity regulation are, in general, in compliance with the model law. As with all NAIC model laws, this model law must be adopted by a state before becoming law in such state. The model law has only been adopted in a few states, which include Delaware. Iowa has not yet adopted a version of the Insurance Data Security Model Law. We anticipate that more states will begin adopting the model law in the near term. The NAIC has also adopted a guidance document that sets forth twelve principles for effective insurance regulation of cybersecurity risks based on similar regulatory guidance adopted by the Securities Industry and Financial Markets Association and the "Roadmap for Cybersecurity Consumer Protections," which describes the protections to which the NAIC believes consumers should be entitled from their insurance companies, agents and other businesses concerning the collection and maintenance of consumers' personal information, as well as what consumers should expect when such information has been involved in a data breach. We expect cybersecurity risk management, prioritization and reporting to continue to be an area of significant regulatory focus by such regulatory bodies and self-regulatory organizations.

The California Consumer Privacy Act of 2018 (CCPA) was signed in June 2018 and was later amended in September 2018. The CCPA became effective on January 1, 2020. The CCPA imposes stringent data privacy and data protection requirements for the data of California residents, including providing the right to request that a business delete any personal information about the consumer under certain circumstances. We have committed significant time and resources to comply with the rule's requirements. We anticipate that California will continue to examine the cybersecurity programs of businesses in the future and such examinations may result in additional regulatory scrutiny, expenditure of resources and possible regulatory actions and reputational harm. We expect that data privacy will continue to be an area of significant regulatory focus, and it is possible that other jurisdictions consider or enact data privacy regulations.

The Gramm-Leach-Bliley Act of 1999, which implemented fundamental changes in the regulation of the financial services industry in the United States, includes privacy requirements for financial institutions, including obligations to protect and safeguard consumers' nonpublic personal information and records, and limitations on the re-disclosure and re-use of such information.

Our investment in a limited partnership which is in the business of originating residential mortgage loans (RML), as well as our direct investment in any residential or other mortgage loans, may expose us to various environmental and other regulation. For example, to the extent that we hold whole mortgage loans as part of our investment portfolio, we may be responsible for certain tax payments or subject to liabilities under the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980. Additionally, we may be subject to regulation by the CFPB as a mortgage holder or property owner. We are currently unable to predict the impact of such regulation on our business.

Broker-dealers

Our securities operations, principally conducted by our limited purpose SEC-registered broker-dealer, Athene Securities, LLC, are subject to federal and state securities and related laws, and are regulated principally by the SEC, state securities authorities and the Financial Industry Regulatory Authority (FINRA). Athene Securities, LLC does not hold customer funds or safekeep customer securities or otherwise engage in any securities transactions. Athene Securities, LLC is the principal underwriter for the RILA product that we offer and previously served as the principal underwriter of a block of variable annuity contracts which has been closed to new investors since 2002. The closed block of variable annuity contracts was issued by a predecessor of AAIA. Athene Securities, LLC continues to receive concessions on those variable annuity contracts. Athene Securities, LLC also provides supervisory oversight to Athene employees who are registered representatives.

Athene Securities, LLC and employees or personnel registered with Athene Securities, LLC are subject to the Exchange Act and to regulation and examination by the SEC, FINRA and state securities commissioners. The SEC and other governmental agencies and self-regulatory organizations, as well as state securities commissions in the United States, have the power to conduct administrative proceedings that can result in censure, penalties and fines, disgorgement of profits, restitution to customers, cease-and-desist orders or suspension, termination or limitation of the activities of the regulated entity or its employees.

As a registered broker-dealer and member of various self-regulatory organizations, Athene Securities, LLC is subject to the SEC's net capital rule, which specifies the minimum level of net capital a broker-dealer is required to maintain and requires a minimum part of its assets to be kept in relatively liquid form. These net capital requirements are designed to measure the financial soundness and liquidity of broker-dealers. The net capital rule imposes certain requirements that may have the effect of preventing a broker-dealer from distributing or withdrawing capital and may require that prior notice to the regulators be provided prior to making capital withdrawals. Compliance with net capital requirements could limit operations that require the intensive use of capital, such as trading activities and underwriting, and may limit the ability of our broker-dealer subsidiaries to pay dividends to us.

Employee Retirement Income Security Act of 1974, as amended (ERISA)

We also may be subject to regulation by the U.S. Department of Labor (DOL) when providing a variety of products and services to employee benefit plans governed by ERISA. ERISA is a comprehensive federal statute that applies to U.S. employee benefit plans sponsored by private employers and labor unions. Plans subject to ERISA include pension and profit sharing plans and welfare plans, including health, life and disability plans. Among other things, ERISA imposes reporting and disclosure obligations, prescribes standards of conduct that apply to plan fiduciaries and prohibits transactions known as "prohibited transactions," such as conflict-of-interest transactions, self-dealing and certain transactions between a benefit plan and a "party in interest." ERISA also provides for a scheme of civil and criminal penalties and enforcement. Our insurance businesses provide services to employee benefit plans subject to ERISA. We are also subject to ERISA's prohibited transaction rules for transactions with ERISA plans, which may affect our ability to, or the terms upon which we may, enter into transactions with those plans, even in businesses unrelated to those giving rise to "party in interest" status. The applicable provisions of ERISA and the U.S. Internal Revenue Code of 1986, as amended (Internal Revenue Code) are subject to enforcement by the DOL, the Internal Revenue Service (IRS) and the U.S. Pension Benefit Guaranty Corporation. Severe penalties are imposed for breach of duties under ERISA.

In April 2016, the DOL issued regulations expanding the definition of "investment advice" and broadening the circumstances under which distributors and manufacturers of insurance and annuity products could be considered "fiduciaries" and subject to certain standards in providing advice. These regulations were vacated effective June 2018. The DOL has indicated that it has been working with the SEC to develop a new proposed rule defining the term "fiduciary" for purposes of ERISA. Originally, the new proposed rule was expected to be issued in the fall of 2019 but no guidance has yet been issued. If a new fiduciary rule is adopted by the DOL, it is likely to apply to our business.

Fiduciary Standards

In response to Dodd Frank's directive that the SEC propose rules creating a uniform standard of conduct applicable to broker-dealers and investment advisers, the SEC adopted a new rule under the Exchange Act that establishes a standard of conduct for broker-dealers and associated persons of a broker-dealer when they make a recommendation to a retail customer of any securities transaction or investment strategy involving securities. This new rule, called "Regulation Best Interest," enhances the broker-dealer standard of conduct beyond existing suitability obligations, and aligns the standard of conduct with retail customers' reasonable expectations by requiring broker-dealers, among other things, to: act in the best interest of the retail customer at the time the recommendation is made, without placing the financial or other interest of the broker-dealer ahead of the interests of the retail customer; and address conflicts of interest by establishing, maintaining, and enforcing policies and procedures reasonably designed to identify and fully and fairly disclose material facts about conflicts of interest, and in certain identified areas where the SEC has determined that disclosure is insufficient to reasonably address the conflict, to mitigate or, in certain instances, eliminate the conflict. The standard of conduct established by Regulation Best Interest cannot be satisfied through disclosure alone. The standard of conduct draws from key principles underlying fiduciary obligations, including those that apply to investment advisers under the Investment Advisers Act of 1940. Regardless of whether a retail investor chooses a broker-dealer or an investment adviser (or both), the retail investor will be entitled to a recommendation (from a broker-dealer) or advice (from an investment adviser) that is in the best interest of the retail investor and that does not place the interests of the firm or the financial professional ahead of the interests of the retail investor. Regulation Best Interest will become effective on June 30, 2020. Though this regulation does not apply directly to FIA sales, we are currently unable to predict the impact that Regulation Best Interest may have on our business.

The NAIC has adopted a revised Suitability in Annuity Transactions Model Regulation (SAT), which places new responsibilities upon issuing insurance companies with respect to the suitability of annuity sales, including responsibilities for training agents. Many states, including Athene Domiciliary States, have already enacted laws and/or regulations based on SAT, thus imposing suitability standards with respect to sales of FIAs and variable annuities. The NYSDFS issued a circular letter emphasizing insurers' obligations under laws and regulations based on SAT when replacing a deferred annuity contract with an immediate annuity contract. On July 22, 2018, the NYSDFS issued amendments to its regulation based on SAT to incorporate a "best interest" standard with respect to the suitability of life insurance and annuity sales, which amendments took effect on August 1, 2019 with respect to annuity contracts and will become effective on February 1, 2020 with respect to life insurance policies. Future changes in such laws and regulations, including those that impose a "best interest" standard could adversely impact the way we market and sell our annuity products. The NAIC has also approved amendments to the SAT to incorporate a "best interest" or similar standard with respect to the suitability of annuity sales. The amendments include a requirement for producers to act in the "best interest" of a retail customer when making a recommendation of an annuity. A producer has acted in the best interest of the customer if they have satisfied certain prescribed obligations regarding care, disclosure, conflict of interest and documentation.

The SEC has indicated that it will work with the DOL to propose rules creating a uniform standard of conduct applicable to broker-dealers and investment advisers, which, if adopted, may affect the distribution of our products. Should the SEC, DOL, NAIC or state-specific rules, once adopted, not align, the distribution of our products could be further complicated.

Bermuda

General

The Bermuda Insurance Act regulates the insurance business of our Bermuda reinsurance subsidiaries, and provides that no person may carry on any insurance business in or from within Bermuda unless registered as an insurer under such act by the BMA. The BMA is required by the Bermuda Insurance Act to determine whether the applicant is a fit and proper body to be engaged in the insurance business and, in particular, whether it has, or has available to it, adequate knowledge and expertise to operate an insurance business. See *–Fit and Proper Controllers* below.

The continued registration of an insurer is subject to the insurer complying with the terms of its registration and such other conditions as the BMA may impose from time to time. The Bermuda Insurance Act also grants to the BMA powers to supervise, investigate and intervene in the affairs of insurance companies.

The Bermuda Insurance Act imposes on Bermuda insurance companies solvency standards as well as auditing and reporting requirements. Certain significant aspects of the Bermuda insurance regulatory framework are set forth below.

Classification of Insurers

The Bermuda Insurance Act distinguishes between insurers carrying on long-term business, insurers carrying on special purpose business and insurers carrying on general business. Long-term business is generally defined as life, annuity and accident and health insurance, while general business broadly includes all types of insurance that are not long-term business (property and casualty business). Special purpose business is fully funded insurance business approved by the BMA to be written by a company registered either as a Special Purpose Insurer or as a Collateralized Insurer. There are five classifications of insurers carrying on long-term business, ranging from Class A insurers (pure captives) to Class E insurers (larger commercial carriers). Class A insurers are subject to the lightest regulation and Class E insurers are subject to the strictest regulation.

Our Bermuda reinsurance subsidiaries, which are incorporated to carry on long-term business, are each registered as a Class C or Class E insurer. Class C is the license class for long-term insurers and reinsurers with total assets of less than $250 million that are not registrable as a single parent or multi-owner long-term captive insurer or reinsurer. Class E is the license class for long-term insurers and reinsurers with total assets of more than $500 million that are not registrable as a single-parent or multi-owner long-term captive insurer or reinsurer. Our Bermuda reinsurance subsidiaries are not licensed to conduct general business and have not sought authorization as reinsurers in any state or jurisdiction of the U.S. Consequently, in order for ceding companies of our Bermuda reinsurance subsidiaries to receive statutory reserve or RBC credit for the reinsurance provided, reinsurance transactions are typically structured in one of three ways: (1) coinsurance, where the respective Bermuda reinsurance subsidiary's obligation to the applicable ceding company in connection with reinsurance transactions is secured by assets held in trust for the benefit of the applicable ceding company, which may be reduced or eliminated to the extent that the applicable Bermuda reinsurance subsidiary becomes a certified reinsurer or Bermuda becomes a reciprocal jurisdiction, (2) funds withheld, where, although the applicable Bermuda reinsurance subsidiary recognizes the insurance reserve liabilities, the assets to secure such liabilities are held and maintained by the applicable ceding company, or (3) modco, where both the insurance reserves and assets supporting the reserves are retained by the applicable ceding company.

Cancellation of Insurer's Registration

The BMA could cancel the registration of one or more of our Bermuda reinsurance subsidiaries at the request of the subsidiary or on grounds specified in the Bermuda Insurance Act. Failure by the Bermuda reinsurance subsidiary to comply with its obligations under the Bermuda Insurance Act and the BMA's belief that the subsidiary has not been carrying on business in accordance with sound insurance principles are examples of such grounds.

Public Disclosure

The Bermuda Insurance Act provides the BMA with powers to set standards on public disclosure. Using this power, the BMA requires all commercial insurers and insurance groups, subject to certain exceptions, to prepare and publish a Financial Condition Report on their website.

Non-insurance Business

Pursuant to the Bermuda Insurance Act, as Class C and Class E insurers, our Bermuda reinsurance subsidiaries are not permitted to engage in non-insurance business unless such non-insurance business is ancillary to its core business. Non-insurance business means any business other than insurance business and includes carrying on investment business, managing an investment fund as operator, carrying on business as a fund administrator, carrying on banking business, underwriting debt or securities or otherwise engaging in investment banking, engaging in commercial or industrial activities and carrying on the business of management, sales or leasing of real property.

Annual Financial Statements, Annual Statutory Financial Return and Annual Capital and Solvency Return

Class C and Class E insurers must file annual statutory financial statements and annual audited financial statements prepared in accordance with accounting principles generally accepted in the U.S. (GAAP), International Financial Reporting Standards, accounting principles generally accepted in the UK or accounting principles generally accepted in Canada within four months of the end of each fiscal year, unless such deadline is specifically extended. The Bermuda Insurance Act also prescribes rules for the preparation and substance of statutory financial statements, which include, in statutory form, an insurer information sheet, an auditor's report, a balance sheet, income statement, a statement of capital and surplus and notes thereto. The statutory financial statements include detailed information and analysis regarding premiums, claims, reinsurance and investments of the insurer.

In addition, each year Class C and Class E insurers are required to file with the BMA a capital and solvency return along with its annual statutory financial return. The prescribed form of capital and solvency return is comprised of: the BMA's Bermuda Solvency Capital Requirement (BSCR) model or an approved internal capital model in lieu thereof; a statutory economic balance sheet; the approved actuary's opinion; and several prescribed schedules, including a schedule of fixed income and equity investments by BSCR rating, a schedule of funds held by ceding reinsurers in segregated accounts/trusts by BSCR rating, a schedule of risk management and a schedule of eligible capital, among others. The BSCR is not available for public inspection.

Minimum Margin of Solvency (MMS), Enhanced Capital Requirement (ECR) and Restrictions on Dividends and Distributions

Both Class C and Class E insurers must at all times maintain an MMS and an ECR in accordance with the provisions of the Bermuda Insurance Act. The Bermuda Insurance Act mandates certain actions and filings with the BMA if an insurer fails to meet and/or maintain its ECR or MMS including the filing of a written report detailing the circumstances giving rise to the failure and the manner and time within which the insurer intends to rectify the failure.

The MMS that a Class C insurer is required to maintain with respect to its long-term business is the greater of (1) $500,000, (2) 1.5% of assets or (3) 25% of the ECR as reported at the end of the relevant year. The MMS that a Class E insurer is required to maintain with respect to its long-term business is the greater of (1) $8 million, (2) 2% of the first $500 million of assets plus 1.5% of applicable assets above $500 million or (3) 25% of the ECR as reported at the end of the relevant year.

The BMA has embedded an economic balance sheet (EBS) framework as part of the BSCR that forms the basis for an insurer's ECR. The premise underlying the EBS framework is the idea that assets and liabilities should be valued on a consistent economic basis. Under the Bermuda Regulatory Framework there are two solvency calculations: (1) a Class E Insurer must have total statutory capital and surplus as reported on the insurer's statutory balance sheet greater than the MMS calculated pursuant to the Insurance Account Rules 2016; and (2) under the Insurance (Prudential Standards) (Class C, Class D and Class E Solvency Requirement) Rules 2011 an insurer is required to maintain available statutory economic capital and surplus in an amount that is equal to or exceeds the value of its ECR.

A Class C insurer's ECR is established by reference to the Class C BSCR model, while a Class E insurer's ECR is established by reference to the Class E BSCR model. Each BSCR model provides a method for determining an insurer's capital requirements (statutory economic capital and surplus) by taking into account the risk characteristics of different aspects of the insurer's business. The BSCR formula establishes capital requirements for fourteen categories of risk: fixed income investment risk, equity investment risk, long-term interest rate/liquidity risk, currency risk, concentration risk, credit risk, operational risk and seven categories of long-term insurance risk. For each category, the capital requirement is determined by applying shocks to asset, premium, reserve, creditor, probable maximum loss and operation items, with higher shocks applied to items with greater underlying risk and lower shocks for less risky items.

The Insurance (Prudential Standards) (Class C, Class D, and Class E Solvency Requirement) Amendment Rules 2018 provide updates to certain aspects of the EBS framework and increase the ECR over a 10-year grade-in period commencing January 1, 2019. We do not expect this change to have a material impact on our business.

As of December 31, 2019 and 2018, ALRe's EBS capital and surplus resulted in BSCR ratios, computed as available statutory economic capital and surplus divided by ECR, of 310% and 340%, respectively. While not specifically referred to in the Bermuda Insurance Act, target capital level (TCL) is also an important threshold for statutory capital and surplus. TCL is equal to 120% of ECR as calculated pursuant to the BSCR formula. TCL serves as an early warning tool for the BMA. If an insurer fails to maintain statutory capital at least equal to its TCL, such failure will likely result in increased regulatory oversight by the BMA. A Class C or Class E insurer which at any time fails to meet its applicable ECR shall, upon becoming aware of such failure or upon having reason to believe that such a failure has occurred, immediately notify the BMA in writing. Within 14 days of such notification, such insurer shall file with the BMA a written report containing details of the circumstances leading to the failure and a plan detailing the specific actions to be taken to rectify the failure, and the time within which the insurer intends to rectify the failure. Within 45 days of becoming aware of such failure, or of having reason to believe that such a failure has occurred, such insurer shall furnish the BMA with (1) unaudited statutory economic balance sheets and unaudited interim statutory financial statements prepared in accordance with GAAP covering such period as the BMA may require; (2) an opinion of the approved actuary in relation to total long-term business insurance technical provisions as set out in the statutory economic balance sheet, where applicable; (3) a long-term business solvency certificate in respect of the financial statements; and (4) a capital and solvency return reflecting an ECR prepared using post-failure data where applicable.

Under the Bermuda Insurance Act, an insurer is prohibited from declaring or paying a dividend if in breach of its ECR or MMS or if the declaration or payment of such dividend would cause such a breach. Where an insurer fails to meet its MMS on the last day of any financial year, it is prohibited from declaring or paying any dividends during the next financial year without the approval of the BMA. The Bermuda Insurance Act also prohibits our Bermuda reinsurance subsidiaries from paying a dividend in an amount exceeding 25% of the prior year's total statutory capital and surplus, unless at least two members of the respective Bermuda reinsurance subsidiary's board of directors and its principal representative sign and submit to the BMA an affidavit attesting that a dividend in excess of this amount would not cause such Bermuda reinsurance subsidiary to fail to meet its relevant margins. In certain instances, our Bermuda reinsurance subsidiaries 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 the applicable Bermuda reinsurance subsidiary meeting its MMS and ECR, such Bermuda reinsurance subsidiary 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. Further, each of our Bermuda reinsurance subsidiaries must obtain the BMA's prior approval before reducing its total statutory capital as shown in its previous financial year statutory balance sheet by 15% or more. Each of our Bermuda reinsurance subsidiaries is also prohibited from declaring or paying any dividends unless the value of its long-term business assets exceeds its long-term business liabilities, as certified by its approved actuary, by the amount of the dividend and at least the MMS. These restrictions on declaring or paying dividends and distributions under the Bermuda Insurance Act are in addition to those under Bermuda's Companies Act 1981 (the Companies Act) which apply to all Bermuda companies. Under the Companies Act, a company may not declare or pay a dividend, or make a distribution out of contributed surplus, if there are reasonable grounds for believing that: (1) the company is, or would after the payment be, unable to pay its liabilities as they become due, or (2) the realizable value of the company's assets would thereby be less than its liabilities.

Eligible Capital

To enable the BMA to better assess the quality of the insurer's capital resources, both Class C and Class E insurers are required to disclose the makeup of its capital in accordance with the '3-tiered capital system.' Under this system, all of the insurer's capital instruments must be classified as either basic or ancillary capital. All capital instruments are further classified into one of three tiers based on their "loss absorbency" characteristics. Highest quality capital will be classified as Tier 1 Capital, lesser quality capital will be classified as either Tier 2 Capital or Tier 3 Capital. Under this regime, up to certain specified percentages of Tier 1, Tier 2 and Tier 3 Capital may be used to support the insurer's MMS, ECR and TCL. The Bermuda Insurance Act requires that Class E insurers have Tier 1 Capital equal to or greater than 50% of the value of its ECR, Tier 2 Capital not greater than Tier 1 Capital and Tier 3 Capital of not more than 17.65% of the aggregate of its Tier 1 Capital and Tier 2 Capital.

The characteristics of the capital instruments that must be satisfied to qualify as Tier 1, 2 and 3 Capital are set forth in the Insurance (Eligible Capital) Rules 2012, and any amendments thereto. Under those rules, Tier 1, 2 and 3 Capital may, until January 1, 2026, include capital instruments with the following characteristics: (1) non-redeemable or settled only with the issuance of an instrument of equal or higher quality upon a breach in the ECR (Tier 1, 2 and 3 Capital); (2) coupon payment on the instrument be cancellable or deferrable indefinitely, upon breach in the ECR (Tier 1 and 2 Capital); or (3) coupon payment on the instrument be cancellable or deferrable indefinitely upon breach in the MMS (Tier 3 Capital).

Where the BMA has previously approved the use of certain instruments for capital purposes, the BMA's consent will need to be obtained if such instruments are to remain eligible for use in satisfying the MMS and the ECR. We do not currently use any such instruments.

Code of Conduct

Every Bermuda registered insurer must comply with the Insurance Code of Conduct (Code of Conduct) which prescribes the duties and standards that must be complied with to ensure sound corporate governance, risk management and internal controls are implemented. The BMA will assess an insurer's compliance with the Code of Conduct in a proportionate manner relative to the nature, scale and complexity of its business. Failure to comply with the requirements of the Code of Conduct will be taken into account by the BMA in determining whether an insurer is conducting its business in a sound and prudent manner as prescribed by the Bermuda Insurance Act and may result in the BMA exercising its powers of intervention and investigation (see below) and, in the case of our Bermuda reinsurance subsidiaries, as Class C and Class E insurers, will be a factor in calculating the operational risk charge under each insurer's BSCR or approved internal model.

Fit and Proper Controllers

The BMA maintains supervision over the "controllers" of all registered insurers in Bermuda. For these purposes, a "controller" includes (1) the managing director of the registered insurer or its parent company, (2) the chief executive of the registered insurer or of its parent company, (3) a shareholder controller, and (4) any person in accordance with whose directions or instructions the directors of the registered insurer or its parent company are accustomed to act.

The definition of shareholder controller is set out in the Bermuda Insurance Act but generally refers to (1) a person who holds 10% or more of the shares carrying rights to vote at a shareholders' meeting of the registered insurer or its parent company, (2) a person who is entitled to exercise 10% or more of the voting power at any shareholders' meeting of such registered insurer or its parent company or (3) a person who is able to exercise significant influence over the management of the registered insurer or its parent company by virtue of its shareholding or its entitlement to exercise, or control the exercise of, the voting power at any shareholders' meeting.

Under the Bermuda Insurance Act, shareholder controller ownership is defined as follows:

Actual Shareholder Controller Voting Power	Defined Shareholder Controller Voting Power
10% or more but less than 20%	10%
20% or more but less than 33%	20%
33% or more but less than 50%	33%
50% or more	50%

Where the shares of a registered insurer, or the shares of its parent company, are traded on a recognized stock exchange, and such shareholder becomes a 10%, 20%, 33%, or 50% shareholder controller of the insurer, that shareholder shall, within 45 days, notify the BMA in writing that such shareholder has become, or as a result of a disposition ceased to be, a controller of any such category.

Under our bye-laws, we have imposed restrictions on the ownership by holders of our Class A common shares (other than the Apollo Group) controlling more than 9.9% of the voting power associated with our common shares. The voting rights exercisable by shareholders of the Company other than the Apollo Group will be limited so that Control Groups are not deemed to hold more than 9.9% of the total voting power conferred by our shares. In addition, our board of directors retains certain discretion to make adjustments to the aggregate number of votes attaching to the shares of any person or group that they consider fair and reasonable in all the circumstances to ensure that such person or group will not hold more than 9.9% of the total voting power represented by our then outstanding shares. As such, other than the Apollo Group (at the 33% shareholder controller level), no shareholder will be considered, according to the Bermuda Insurance Act, a shareholder controller of AARe or ALRe.

Any person or entity who contravenes the Bermuda Insurance Act by failing to give notice or knowingly becoming a controller of any description before the required 45 days has elapsed is guilty of an offense under Bermuda law and liable to a fine of $25,000 on summary conviction.

The BMA may file a notice of objection to any person or entity who has become a controller of any category when it appears that such person or entity is not, or is no longer, fit and proper to be a controller of the registered insurer. Before issuing a notice of objection, the BMA is required to serve upon the person or entity concerned a preliminary written notice stating the BMA's intention to issue formal notice of objection. Upon receipt of the preliminary written notice, the person or entity served may, within 28 days, file written representations with the BMA which shall be taken into account by the BMA in making its final determination. Any person or entity who continues to be a controller of any description after having received a notice of objection is guilty of an offense and liable on summary conviction to a fine of $25,000 (and a continuing fine of $500 per day for each day that the offense is continuing) or, if convicted on indictment, to a fine of $100,000 and/or 2 years in prison.

Notification of Material Changes

All registered insurers are required to give notice to the BMA of their intention to effect a material change within the meaning of the Bermuda Insurance Act. For the purposes of the Bermuda Insurance Act, the following changes are material: (1) the transfer or acquisition of insurance business, including portfolio transfers or corporate restructurings, pursuant to a court-approved scheme of arrangement under Section 25 of the Bermuda Insurance Act or Section 99 of the Companies Act, (2) the amalgamation with or acquisition of another firm, (3) engaging in unrelated business that is retail business, (4) the acquisition of a controlling interest in an undertaking that is engaged in non-insurance business which offers services and products to persons who are not affiliates of the insurer, (5) outsourcing all or substantially all of the company's actuarial, risk management, compliance or internal audit functions, (6) outsourcing all or a material part of an insurer's underwriting activity, (7) the transfer other than by way of reinsurance of all or substantially all of a line of business, (8) the expansion into a material new line of business, (9) the sale of an insurer and (10) outsourcing of an "officer" role, as such term is defined by the Bermuda Insurance Act.

As registered insurers, our Bermuda reinsurance subsidiaries may not take any steps to give effect to such a material change unless they have first served notice on the BMA that they intend to effect such material change and before the end of 30 days, either the BMA has notified the applicable Bermuda reinsurance subsidiary in writing that the BMA has no objection to such change or that period has lapsed without the BMA having issued a notice of objection.

Before issuing a notice of objection, the BMA is required to serve upon the applicable Bermuda reinsurance subsidiary a preliminary written notice stating the BMA's intention to issue formal notice of objection. Upon receipt of the preliminary written notice, the applicable Bermuda reinsurance subsidiary may, within 28 days, file written representations with the BMA, which the BMA would take into account in making its final determination.

Supervision, Investigation and Intervention

The BMA may appoint an inspector with powers to investigate the affairs of an insurer if the BMA believes that an investigation is required in the interests of the insurer's policyholders or potential policyholders. In order to verify or supplement information otherwise provided to the inspector, the BMA may direct an insurer to produce documents or information relating to matters connected with its business.

If it appears to the BMA that there is a risk of an insurer becoming insolvent, or that it is in breach of the Bermuda Insurance Act or any conditions imposed upon its registration, the BMA may, among other things, direct the insurer (1) not to take on any new insurance business, (2) not to vary any insurance contract if the effect would be to increase its liabilities, (3) not to make certain investments, (4) to liquidate certain investments, (5) to maintain or transfer to the custody of a specified bank, certain assets, (6) not to declare or pay any dividends or other distributions or to restrict the making of such payments, (7) to limit its premium income, (8) not to enter into any specified transaction with any specified persons or persons of a specified class, (9) to provide the BMA with such financial information regarding the insurer as the BMA may request, (10) to obtain the opinion of an actuary loss reserve specialist for submission to the BMA, and (11) to remove a controller or officer.

Exchange Control

The permission of the BMA is required, pursuant to the provisions of the Exchange Control Act 1972 and related regulations, for all issuances and transfers of shares (which includes the Class A common shares) of Bermuda companies to or from a non-resident of Bermuda for exchange control purposes, other than in cases where the BMA has granted a general permission. The BMA, in its notice to the public dated June 1, 2005, has granted a general permission for the issue and subsequent transfer of any securities of a Bermuda company from and/or to a non-resident of Bermuda for exchange control purposes for so long as any "Equity Securities" of the company (which includes the Class A common shares) are listed on an "Appointed Stock Exchange" (which includes the New York Stock Exchange (NYSE)).

Economic Substance Act 2018 (ESA)

In December 2018, the ESA came into effect in Bermuda. Under the provisions of the ESA, every Bermuda registered entity, other than an entity which is resident for tax purposes in certain jurisdictions outside of Bermuda, that carries on as a business any one or more "relevant activities" referred to in the ESA must satisfy economic substance requirements by maintaining a substantial economic presence in Bermuda. Under the ESA, insurance or holding entity activities (both as defined in the ESA and Economic Substance Regulations 2018) are relevant activities. To the extent that the ESA applies to any of our entities registered in Bermuda, we will be required to demonstrate compliance with economic substance requirements by filing an annual economic substance declaration with the Registrar of Companies in Bermuda.

Any entity that must satisfy economic substance requirements but fails to do so could face automatic disclosure to competent authorities in the E.U. of the information filed by the entity with the Bermuda Registrar of Companies in connection with the economic substance requirements and may also face financial penalties, restriction or regulation of its business activities and/or removal from the list of registered entities in Bermuda.

Privacy Laws

The Bermuda Personal Information Protection Act 2016 (PIPA) regulates how any individual, entity or public authority may use personal information. PIPA reflects a set of internationally accepted privacy principles and good business practices for the use of personal information. Although PIPA was passed on July 27, 2016, the sections that are currently in effect are limited to those that relate to the establishment and appointment of the PIPA commissioner (PIPA Commissioner), the hiring of the PIPA Commissioner's staff, and the general authority of the PIPA Commissioner to inform the public about PIPA. Following the PIPA Commissioner's appointment, effective January 20, 2020, we anticipate that his office will communicate with the public on the next steps and proceed with the further implementation of PIPA.

Europe

Corporation Tax Act 2010 (UK Tax Act)

AHL, ALRe and ACRA 1A are UK tax resident companies and as such are subject to UK corporation tax on their profits. We do not expect taxes paid pursuant to the UK Tax Act to be material to our results of operations. For further discussion regarding our effective tax rates, see *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations–Results of Operations–Taxes*. For risks related to UK tax residency, see *Item 1A. Risk Factors–Risks Relating to Taxation–AHL or its non-U.S. subsidiaries may be subject to U.S. federal income taxation*.

General Data Protection Regulation (GDPR)

The GDPR went into effect on May 25, 2018. It was enacted by the European Commission to regulate and protect data of individuals located within the EU. As tax residents of the UK, AHL, ALRe and ACRA 1A are likely subject to the territorial scope of the GDPR under Article 3(1). To the extent that AHL, ALRe and/or ACRA 1A is under the territorial scope of the GDPR, the regulation would only apply to the processing of personal data carried out in the context of such entity's UK activities. Currently, the volume of personal data processed in connection with each entity's UK activities is insignificant. We regularly monitor our business activities to ensure we are prepared for compliance, should the GDPR ever apply to our business more broadly.

Enterprise-Wide

Developing International Matters and Group Capital – In November 2019, the International Association of Insurance Supervisors (IAIS) adopted the Common Framework for the Supervision of Internationally Active Insurance Groups (ComFrame). ComFrame will be applicable to entities that meet the IAIS's criteria for internationally active insurance groups (IAIGs) and are designated as such. ComFrame establishes international standards for the designation of a group-wide supervisor for each IAIG and for the imposition of a group capital requirement applicable to an IAIG in addition to the current legal entity capital requirements imposed by relevant insurance laws and regulations. The NAIC developed a model law that allows state insurance regulators in the U.S. to be designated as group-wide supervisors for U.S.-based IAIGs. In November 2019, the IAIS adopted a revised version of the risk-based global insurance capital standard (ICS), which is the group capital component of ComFrame. The NAIC is developing a group capital calculation tool using an RBC aggregation methodology for all entities within an insurance holding company system group, including non-U.S. entities, and is seeking effective equivalency of such tool to the ICS for U.S.-based IAIGs. The goal is to provide U.S. regulators with a method to aggregate the available capital and the minimum capital of each entity in a group in a way that applies to all groups regardless of their structure. The NAIC expects to adopt the final group capital calculation tool in 2020. The NAIC has stated that the calculation will be a regulatory tool and will not constitute a requirement or standard. It is not possible to predict what impact any such regulatory tool may have on our business.

We, Apollo and Apollo's other insurance affiliates participated in the NAIC's field testing of the group capital calculation in 2019 and we expect to continue to be included Apollo's calculation in the future. In the event that we or Apollo become an IAIG, we expect to be subject to a group capital calculation consistent with or comparable to international capital standards in that context. It is possible that the development of these international standards will have an impact on our capital position and capital structure in the future.

Group Supervision – An insurance group is defined as a group of companies that conducts insurance business. As the regulators of our largest subsidiaries, the BMA or the Iowa Insurance Division may determine that it is appropriate for one of them to act as our group supervisor. It is possible that the group supervisor, if so identified, will determine that our group includes Apollo and Apollo's insurance interests that are otherwise not connected to us for purposes of applying group supervision requirements. Under applicable U.S. state laws, including the Holding Company Act in Iowa, Apollo will likely be included within our group, although the outcome under Bermuda law is uncertain.

A group supervisor, if and when identified, may perform a number of supervisory functions including (1) coordinating the gathering and dissemination of relevant or essential information for going concerns and emergency situations, including the dissemination of information that is of importance for the supervisory task of other competent authorities, (2) carrying out supervisory reviews and assessments of the insurance group, (3) carrying out assessments of the insurance group's compliance with the rules on solvency, risk concentration, intra-group transactions and good governance procedures, (4) planning and coordinating supervisory activities in respect of the insurance group, both as a going concern and in emergency situations through regular meetings held at least annually (or by other appropriate means) with other competent authorities, (5) coordinating enforcement actions that may need to be taken against the insurance group or any of its members and (6) planning and coordinating meetings of colleges of supervisors (consisting of insurance regulators) in order to facilitate the carrying out of the functions described above.

The group supervisor may create rules for the insurance group, including to make provision for, among other things (1) assessing the financial situation and the solvency position of the insurance group and/or its members and (2) regulating intra-group transactions, risk concentration, governance procedures, risk management and regulatory reporting and disclosure.

We, as part of Apollo's group, expect to become subject to group supervision by the IID in the future. It is unclear whether we will be subject to independent group supervision by either the BMA or the IID with respect to AHL and its subsidiaries separate from Apollo.

Own Risk and Solvency Assessment (ORSA) Model Act – We are subject to the ORSA Model Act, which has been enacted by each Athene Domiciliary State, and requires insurance companies to assess the adequacy of their and their group's risk management and current and future solvency position. Under the ORSA Model Act, certain insurers must undertake an internal risk management review at least annually (but also at any time when there are significant changes to the risk profile of the insurer or its insurance group), in accordance with the NAIC's ORSA Guidance Manual, and prepare an ORSA Report assessing the adequacy of the insurer's risk management and capital in light of its current and future business plans. The ORSA Report is required to be filed annually with a company's lead state regulator and made available to other domiciliary regulators within the holding company system. We file the ORSA with the IID as our lead state regulator and concurrently provide the ORSA to the Delaware Department of Insurance and the NYSDFS. We also submit the ORSA to the BMA. Additionally, for the purposes of satisfying the assessment requested in the Schedule of Commercial Insurer's Solvency Self-Assessment, each Bermuda reinsurance subsidiary submits supporting documentation to the BMA regarding specific queries presented in the BMA's BSCR, to supplement the information provided in the ORSA.

Corporate Governance Annual Disclosure Model Act and Model Regulation (together, the Corporate Governance Model Act) – In November 2014, the NAIC adopted the Corporate Governance Model Act, which requires an insurer to provide an annual disclosure regarding its corporate governance practices to its lead state and/or domestic regulator. As adopted by the NAIC, the requirements of the Corporate Governance Model Act became effective January 1, 2016, with the first annual disclosure due by June 1, 2016. The Corporate Governance Model Act must be adopted by the individual states for the new requirements to apply, and specifically in Delaware, Iowa and New York for the changes to apply to our U.S. insurance subsidiaries. Both Delaware and Iowa have adopted forms of the Corporate Governance Annual Disclosure Model Act. To date, New York has not adopted the Corporate Governance Model Act, and it is not possible to predict whether New York will adopt the Corporate Governance Model Act in the future; however, the NAIC has made the Corporate Governance Model Act part of its accreditation standards for state solvency regulation, which may motivate New York to adopt the Corporate Governance Model Act.

Insurance Holding Company Regulation – Each direct and indirect parent of our U.S. insurance subsidiaries (including AHL) is subject to the insurance holding company laws of each of the Athene Domiciliary States. These laws generally require an insurance holding company and insurers that are members of such holding company system to register with their U.S. insurance regulators and to file certain reports with those authorities, including information concerning their capital structure, ownership, financial condition, certain intercompany transactions and general business operations. Generally, under these laws, transactions between our U.S. insurance subsidiaries and their affiliates, including any reinsurance transactions, must be fair and reasonable and, if material or included within a specified category, require prior notice and approval or non-disapproval by the insurance department of each applicable Athene Domiciliary State.

Most states, including each of the Athene Domiciliary States, have insurance laws that require regulatory approval of a direct or indirect change of control of an insurer, which would include a change of control of its holding company. Laws such as these prevent any person from acquiring direct or indirect control of any of our U.S. insurance subsidiaries or their holding companies unless that person has filed a statement with specified information with the commissioner or director of the insurance department of the applicable Athene Domiciliary State (each, a Commissioner) and has obtained the Commissioner's prior approval. Under most states' statutes, including those of each of the Athene Domiciliary States, acquiring 10% or more of a voting interest in an insurance company or its parent company is presumptively considered a change of control, although such presumption may be rebutted. Accordingly, any person who acquires 10% or more of a voting interest in a direct or indirect parent of any of our U.S. insurance subsidiaries (or AHL) without the prior approval of the Commissioner of the applicable Athene Domiciliary State will be in violation of the applicable Athene Domiciliary State's law and may be subject to injunctive action requiring the disposition or seizure of those securities by the Commissioner or prohibiting the voting of those securities and/or to other actions determined by the Commissioner. Further, a willful violation of these laws is punishable in each Athene Domiciliary State as a criminal offense.

In addition, the Model Insurance Holding Company System Regulatory Act (Amended Holding Company Model Act) requires any controlling person of a U.S. insurer seeking to divest its controlling interest in the insurance company to file with the relevant insurance Commissioner a confidential notice of the proposed divestiture at least thirty days prior to the cessation of control (unless a person acquiring control from the divesting party has filed notice of the proposed acquisition of control with the Commissioner). After receipt of the notice, the Commissioner must determine whether the parties seeking to divest or to acquire a controlling interest will be required to file for or obtain approval of the transaction. These laws may discourage potential acquisition proposals and may delay, deter or prevent an acquisition of control of a direct or indirect parent of any of our U.S. insurance subsidiaries (including AHL) (in particular through an unsolicited transaction), even if the shareholders of such parent consider such transaction to be desirable. Our bye-laws include limitations on the voting power exercisable by shareholders of the Company other than the Apollo Group so that certain persons or groups (Control Groups) are deemed not to hold more than 9.9% of the total voting power conferred by our shares.

Holding company system regulations currently in effect in New York require prospective acquirers of New York domiciled insurers to provide detailed disclosure with respect to intended changes to the business operations of the insurer, and expressly authorize the NYSDFS to impose additional conditions on such acquisitions. Pursuant to these regulations, the NYSDFS may limit the changes that the acquirer may make to the insurer's business operations for a specified period of time following the acquisition without the NYSDFS' prior approval. In particular, the regulation provides the NYSDFS with the specific authority to require acquirers of New York domiciled life insurers to post assets in a trust account for the benefit of the target company's policyholders. In making such determination, the NYSDFS may consider whether the acquirer is, or is controlled by or under common control with, an investment manager such as Apollo. The NAIC has also published in its Financial Analysis Handbook specific narrative guidance for state insurance examiners to consider in reviewing applications for an acquisition of insurance and reinsurance companies by a private equity firm.

Although Athene Re IV is not subject to insurance holding company laws, the Vermont insurance regulator may use all or a part of the holding company law framework described above in determining whether to approve a proposed change of control.

Each of the Athene Domiciliary States has adopted a form of the Amended Holding Company Model Act, which requires each ultimate controlling party to file an annual enterprise risk report identifying the material risks within the insurance holding company system that could pose enterprise risk to the licensed companies. An enterprise risk is an activity or event involving affiliates of an insurer that could have a material adverse effect on the insurer or the insurer's holding company system.

In December 2014, the NAIC adopted additional amendments to the Amended Holding Company Model Act for consideration by the various states that address the authority of an insurance commissioner to act as the group-wide supervisor for an internationally active insurance group or to acknowledge the authority of another regulatory official, from another jurisdiction, to so act. These changes to the Amended Holding Company Model Act must be enacted by the individual states before they will become effective, and specifically in Delaware, Iowa and New York for the changes to apply to our U.S. insurance subsidiaries. Delaware has adopted a form of these changes to the Amended Holding Company Model Act, and Iowa has adopted similar provisions under a predecessor statute; however, these changes have not yet been adopted by New York and we cannot predict whether New York will do so in the future. However, the NAIC has made these changes to the Amended Holding Company Model Act part of its accreditation standards for state solvency regulation beginning January 1, 2020, which is likely to motivate states, including New York, to adopt these changes to the Amended Holding Company Model Act. It is not possible to predict with any degree of certainty the additional capital requirements, compliance costs or other burdens these changes may impose in the future.

Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Exchange Act are made available, free of charge, on or through the "Investors" portion of our website www.athene.com. Information contained on our website is not part of, nor is it incorporated by reference in, this report or any of our periodic reports. Reports filed with or furnished to the SEC will also be available as soon as reasonably practicable after they are filed with or furnished to the SEC and are available at the SEC's website at www.sec.gov.

Item 1A. Risk Factors

Risks Relating to Our Business

Our business, financial condition, results of operations, liquidity and cash flows depend on the accuracy of our management's assumptions and estimates, and we could experience significant gains or losses if these assumptions and estimates differ significantly from actual results.

We make and rely on certain assumptions and estimates regarding many matters related to our business, including interest rates, investment returns, expenses and operating costs, tax assets and liabilities, tax rates, business mix, surrender activity, mortality and contingent liabilities. We also use these assumptions and estimates to make decisions crucial to our business operations, including establishing pricing, target returns and expense structures for our insurance subsidiaries' products and PRT transactions; determining the amount of reserves we are required to hold for our policy liabilities; determining the price we will pay to acquire or reinsure business; determining the hedging strategies we employ to manage risks to our business and operations; and determining the amount of regulatory and rating agency capital that our insurance subsidiaries must hold to support their businesses. The factors influencing these assumptions and estimates cannot be calculated or predicted with certainty, and if our assumptions and estimates differ significantly from actual outcomes and results, our business, financial condition, results of operations, liquidity and cash flows may be materially and adversely affected. Certain of the assumptions relevant to our business are discussed in greater detail below.

- *Insurance Products and Liabilities* – Pricing of our annuity and other insurance products, whether issued by us or acquired through reinsurance or acquisitions, is based upon assumptions about persistency, mortality and the rates at which optional benefits are elected. A factor which may affect persistency for some of our products is the value of guaranteed minimum benefits. An increase in the value of guaranteed minimum benefits could result in our policies remaining in force longer than we have estimated, which could adversely affect our results of operations. This could be caused by extended periods of poor equity market performance and/or low interest rates, developments affecting customer perception and other factors outside our control. Alternatively, our persistency estimates could be negatively affected during periods of rising equity markets or interest rates or by other factors outside our control, which could result in fewer policies remaining in force than estimated. Therefore, our results will vary based on differences between actual and expected withdrawals from our subsidiaries' products.

  If emerging or actual experience deviates from our assumptions, such deviations could have a significant effect on our business, financial condition, results of operations, liquidity and cash flows. For example, a significant portion of our in-force and newly issued products contain riders that offer guaranteed lifetime income or death benefits. These riders expose us to mortality, longevity and policyholder behavior risks. If actual utilization of certain rider benefits is adverse when compared to our estimates used in setting our reserves for future policy benefits, these reserves may prove to be inadequate and we may be required to increase such reserves. More generally, deviations from our pricing expectations could result in our subsidiaries earning less of a spread between the investment income earned on our subsidiaries' assets and the interest credited to such products and other costs incurred in servicing the products, or may require our subsidiaries to make more payments under certain products than our subsidiaries had projected. We have limited experience to date on policyholder behavior for our guaranteed minimum benefit products. As a result, future experience could deviate significantly from our assumptions.

- *Determination of Fair Value* – We hold securities, derivative instruments and other assets and liabilities that must be, or at our election are, measured at fair value. Fair value represents the anticipated amount that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction. The determination of fair value involves the use of various assumptions and estimates, and considerable judgment may be required to estimate fair value. Accordingly, estimates of fair value are not necessarily indicative of the amounts that could be realized in a current or future market exchange. As such, changes in or deviations from the assumptions used in such valuations can significantly affect our financial condition and results of operations. During periods of market disruption, including periods of rapidly changing credit spreads or illiquidity, if trading becomes less frequent or market data becomes less observable, it will likely be difficult to value certain of our investments. Further, rapidly changing credit and equity market conditions could materially impact the valuation of investments as reported within our financial statements, and the period-to-period changes in value could vary significantly. Even if our assumptions and valuations are accurate at the time that they are made, the market value of these investments could subsequently decline, which could materially and adversely impact our financial condition, results of operations or cash flows.

- *Hedging Strategies* – We use, and may in the future use, derivatives and reinsurance contracts to hedge risks related to current or future changes in the fair value of our assets and liabilities; current or future changes in cash flows; changes in interest rates, equity markets and credit spreads; the occurrence of credit defaults; currency fluctuations; and changes in mortality and longevity. We use equity derivatives to hedge the liabilities associated with our FIAs. Our hedging strategies rely on assumptions and projections regarding our assets and liabilities, as well as general market factors and the creditworthiness of our counterparties, any or all of which may prove to be incorrect or inadequate. Accordingly, our hedging activities may not have the desired impact. We may also incur significant losses on hedging transactions.

- *Financial Statements* – The preparation of our consolidated financial statements requires management to make various estimates and assumptions that affect the amounts reported therein. These estimates include, but are not limited to, the fair value of investments; impairment of investments and valuation allowances; the valuation of derivatives, including embedded derivatives; DAC, DSI and VOBA; future policy benefit reserves; valuation allowances on deferred tax assets; and stock-based compensation. The assumptions and estimates required for these calculations involve judgment and by their nature are imprecise and subject to changes and revisions over time. Accordingly, our financial condition and results of operations may be adversely affected if actual results differ from assumptions or if assumptions are materially revised.

Our investments are subject to market and credit risks that could diminish their value and these risks could be greater during periods of extreme volatility or disruption in the financial and credit markets, which could adversely impact our business, financial condition, results of operations, liquidity and cash flows.

Our investments and derivative financial instruments are subject to risks of credit defaults and changes in market values. Periods of macroeconomic weakness or recession, heightened volatility or disruption in the financial and credit markets could increase these risks, potentially resulting in other than temporary impairment of assets in our investment portfolio. We are also subject to the risk that cash flows generated from the collateral underlying the structured products we own may differ from our expectations in timing or amount. In addition, many of our classes of investments, but in particular our alternative investments, may produce investment income that fluctuates significantly from period to period. Any event reducing the estimated fair value of these securities, other than on a temporary basis, could have a material and adverse effect on our business, results of operations, financial condition, liquidity and cash flows. If our investment manager, Apollo, fails to react appropriately to difficult market, economic and geopolitical conditions, our investment portfolio could incur material losses. Certain of our investments are more vulnerable to these risks than others, as described more fully below.

- *Fixed maturity and equity securities* – As of December 31, 2019, 76.7% of our net invested assets were invested in fixed maturity securities, equity securities, and short-term investments, including our investments in investment grade and high-yield corporate bonds and structured products, which include RMBS and CLOs. An economic downturn affecting the issuers or underlying collateral of these securities, a ratings downgrade affecting the issuers or guarantors of such securities, or similar trends and issues could cause the estimated fair value of our fixed income securities portfolio and our earnings to decline and the default rates of the fixed income securities in our portfolio to increase.

- *Collateralized loan obligations* – As of December 31, 2019, 8.7% of our net invested assets were invested in CLOs. Control over the CLOs in which we invest is exercised through collateral managers, who may take actions that could adversely affect our interests, and we may not have the right to direct collateral management. There may also be less information available to us regarding the underlying debt instruments held by CLOs than if we had invested directly in the debt of the underlying companies. Additionally, as subordinated interests, the estimated fair values of CLOs tend to be much more sensitive to adverse economic downturns and underlying borrower defaults than those of more senior securities. For example, as the secondary market pricing of the loans underlying CLOs deteriorated during the fourth quarter of 2008, it is our understanding that many investors were forced to raise cash by selling their interests in performing loans which resulted in a forced deleveraging cycle of price declines, compulsory sales and further price declines. While loan prices have recovered from the low levels experienced during the financial crisis, conditions in the large corporate leveraged loan market may deteriorate again, which may cause pricing levels to decline. Furthermore, our investments in CLOs are also subject to liquidity risk as there is a limited market for CLOs. Accordingly, we may suffer unrealized depreciation and could incur realized losses in connection with the sale of our CLO interests.

We have a risk management framework in place to identify, assess and prioritize risks, including the market and credit risks to which our investments are subject. As part of that framework, we test our investment portfolio based on various market scenarios. Under certain stressed market scenarios, unrealized losses on our investment portfolio could lead to material reductions in its carrying value. Under some extreme scenarios, total shareholders' equity could be negative for the period of time prior to any potential market recovery. See *Item 7A. Quantitative and Qualitative Disclosures About Market Risks*.

Interest rate fluctuations could adversely affect our business, financial condition, results of operations, liquidity and cash flows.

Interest rate risk is a significant market risk for us. We define interest rate risk as the risk of an economic loss due to changes in interest rates. This risk arises from our holdings in interest rate-sensitive assets (e.g., fixed income assets) and liabilities (e.g., fixed deferred and immediate annuities). Substantial and sustained increases or decreases in market interest rates could materially and adversely affect our business, financial condition, results of operations, liquidity and cash flows, including in the following respects:

- Significant changes in interest rates expose us to the risk of not realizing anticipated spreads between overall net investment earned rates and the crediting rates to our policyholders.

- Changes in interest rates may negatively affect the value of our assets and our ability to realize gains or avoid losses from the sale of those assets. Significant volatility in interest rates may have a larger adverse impact on certain assets in our investment portfolio that are highly structured or have limited liquidity.

- Changes in interest rates may cause changes in prepayment rates on certain fixed income assets within our investment portfolio. For instance, falling interest rates may accelerate the rate of prepayment on mortgage loans, while rising interest rates may decrease such prepayments below the level of our expectations. At the same time, falling interest rates may result in the lengthening of duration for our policies and liabilities due to the guaranteed minimum benefits contained in our products, while rising interest rates could lead to increased policyholder withdrawals and a shortening of duration for our liabilities. In either case, we could experience a mismatch in our assets and liabilities and potentially incur significant economic losses.

- During periods of declining interest rates or a prolonged period of low interest rates, life insurance and annuity products may be relatively more attractive to consumers than other investment opportunities. This may cause our assumptions regarding persistency to prove inaccurate as our customers opt not to surrender or take withdrawals from their products, which may result in us experiencing greater claim costs than we had anticipated and/or cash flow mismatches between assets and liabilities.

- During periods of declining interest rates, we may have to reinvest the cash we receive as interest or return of principal on our investments into lower-yielding high-grade instruments or seek higher-yielding, but higher-risk instruments in an effort to achieve returns comparable with those attained during more stable interest rate environments.

- Certain securitized financial assets are accounted for based on expectations of future cash flows. To the extent future interest rates are lower than we have projected, we will experience slower accretion of discounts on these assets and will have a lower yield on our portfolio.

- An extended period of declining interest rates or a prolonged period of low interest rates may cause us to decrease the crediting rates of our products, thereby reducing their attractiveness.

- In periods of rapidly increasing interest rates, withdrawals from and/or surrenders of annuity contracts may increase as policyholders choose to seek higher investment returns elsewhere. Obtaining cash to satisfy these obligations may require our insurance subsidiaries to liquidate fixed income investments at a time when market prices for those assets are depressed. This may result in realized investment losses.

- An increase in market interest rates could reduce the value of certain of our alternative investments held as collateral under reinsurance agreements and require us to provide additional collateral, thereby reducing our available capital and potentially creating a need for additional capital which may not be available to us on favorable terms, or at all.

The amount of statutory capital that our insurance and reinsurance subsidiaries have, or that they are required to hold, can vary significantly from time to time and is sensitive to a number of factors outside of our control.

Our U.S. insurance subsidiaries are subject to state regulations that provide for MCR based on RBC formulas for life insurance companies relating to insurance, business, asset, interest rate and certain other risks. Similarly, our Bermuda reinsurance subsidiaries are subject to MCR imposed by the BMA through the BMA's ECR and MMS.

In any particular year, our subsidiaries' capital ratios and/or statutory surplus amounts may increase or decrease depending on a variety of factors, most of which are outside of our control, including, but not limited to, the following:

- the amount of statutory income or loss generated by our insurance subsidiaries;
- the amount of additional capital our insurance subsidiaries must hold to support their business growth;
- changes in reserve requirements applicable to our insurance subsidiaries;
- changes in market value of certain securities in our investment portfolio;
- recognition of write-downs or other losses on investments held in our investment portfolio;
- changes in the credit ratings of investments held in our investment portfolio;
- changes in the value of certain derivative instruments;
- changes in interest rates;
- credit market volatility;
- changes in policyholder behavior;
- changes in corporate tax rates;
- changes to the RBC formulas and interpretations of the NAIC instructions with respect to RBC calculation methodologies; and
- changes to the ECR, BSCR, or TCL formulas and interpretations of the BMA's instructions with respect to ECR, BSCR, or TCL calculation methodologies.

Nationally Recognized Statistical Rating Organizations (NRSROs) may also implement changes to their internal models, which differ from the RBC and BSCR capital models, that have the effect of increasing or decreasing the amount of statutory capital our subsidiaries must hold in order to maintain their current ratings. To the extent that one of our insurance subsidiary's solvency or capital ratios is deemed to be insufficient by one or more NRSROs, we may take actions either to increase the capitalization of the insurer or to reduce the capitalization requirements. If we are unable to accomplish such actions, NRSROs may view this as a reason for a ratings downgrade. In addition, as further discussed at *Item 1. Business–Regulation–Enterprise-Wide–Developing International Matters and Group Capital*, the NAIC is in the process of developing a group capital calculation tool using an RBC aggregation methodology for all the entities within an insurance holding company system group, including non-U.S. entities. The NAIC has stated that the calculation will be a regulatory tool and does not constitute a requirement or standard; however, these regulatory developments may increase the amount of capital that we are required to hold and could result in us being subject to increased regulatory requirements.

If a subsidiary's solvency or capital ratios reach certain minimum levels, it could subject us to further examination or corrective action imposed by our insurance regulators. Corrective actions may include limiting our subsidiaries' ability to write additional business, increased regulatory supervision, or seizure or liquidation of the subsidiary's business, each of which could materially and adversely affect our business, financial condition, results of operations, cash flows and prospects.

Interruption or other operational failures in telecommunications, information technology and other operational systems or a failure to maintain the security, integrity, confidentiality or privacy of sensitive data residing on those systems, including as a result of human error, could have a material adverse effect on our business.

We are highly dependent on automated and information technology systems to record and process our internal transactions and transactions involving our customers, as well as to calculate reserves, value our investment portfolio and complete certain other components of our financial statements. We could experience a failure of one of these systems, our employees or agents could fail to monitor and implement enhancements or other modifications to a system in a timely and effective manner or our employees or agents could fail to complete all necessary data reconciliation or other conversion controls when implementing a new software system or modifications to an existing system. Additionally, anyone who is able to circumvent our security measures and penetrate our information technology systems could access, view, misappropriate, alter or delete information in the systems, including personally identifiable customer information and proprietary business information. Information security risks also exist with respect to the use of portable electronic devices, such as laptops, which are particularly vulnerable to loss and theft.

We believe that we have established and implemented appropriate security measures, controls and procedures to safeguard our information technology systems and to prevent unauthorized access to such systems and any data processed or stored in such systems, and we periodically evaluate and test the adequacy of such systems, controls and procedures. In addition, we have established a business continuity plan which is designed to ensure that we are able to maintain all aspects of our key business processes functioning in the midst of certain disruptive events, including any disruptions to or breaches of our information technology systems. Despite the implementation of security and back-up measures, our information technology systems may be vulnerable to physical or electronic intrusions, viruses or other attacks, programming errors and similar disruptions. We may also be subject to disruptions of any of these systems arising from events that are wholly or partially beyond our control (for example, natural disasters, acts of terrorism, epidemics, computer viruses and electrical or telecommunications outages). All of these risks are also applicable where we rely on outside vendors to provide services to us and/or our customers. The failure of any one of these systems for any reason, or errors made by our employees or agents, could in each case cause significant interruptions to our operations, which could harm our reputation, adversely affect our internal control over financial reporting or have a material adverse effect on our business, financial condition and results of operations. We are also subject to data privacy and security laws applicable to our business in relevant jurisdictions. See *Item 1. Business–Regulation–United States–Consumer Protection Laws and Privacy and Data Security Regulation* for more information.

We retain confidential information in our information technology systems and those of our business partners, and we rely on industry standard commercial technologies to maintain the security of those systems. Despite our implementation of network security measures, our servers could be subject to physical and electronic intrusions, and similar disruptions from unauthorized tampering with our computer systems. While we perform penetration tests and have adopted a number of measures to protect the security of customer and company data, and to our knowledge have not experienced a successful cyber-attack that has resulted in any material compromise in the security of our information technology systems, there is no guarantee that such an attack will not occur or be successful in the future. Due to recent heightened tensions between the United States and the Middle East, we, like other financial services firms, have experienced a significant increase in the volume of unsuccessful cyber-attacks. We are sharing information with industry groups and the U.S. Department of Homeland Security and are closely monitoring threat actors in the region.

Any compromise of the security of our information technology systems that results in inappropriate disclosure or use of confidential information, including personally identifiable customer information, could damage the reputation of our brand in the marketplace, deter purchases of our products, subject us to heightened regulatory scrutiny or significant civil and criminal liability and require us to incur significant technical, legal and other expenses.

Even in the absence of a compromise in the security of our information technology systems, inappropriate disclosure or use of personally identifiable customer information may occur in the event of a compromise in the security of the information technology systems of our third-party advisors or business partners with whom we share such data. Any such inappropriate disclosure or use could likewise damage the reputation of our brand in the marketplace, deter purchases of our products, subject us to heightened regulatory scrutiny or significant civil and criminal liability and require us to incur significant technical, legal and other expenses.

We are subject to the credit risk of our counterparties, including ceding companies who reinsure business to ALRe, reinsurers who assume liabilities from our subsidiaries and derivative counterparties.

Our insurance subsidiaries may cede certain risks to third-party insurance companies through reinsurance. In connection with the acquisitions of our two largest U.S. insurance subsidiaries, we entered into reinsurance agreements with Accordia Life and Annuity Company (Accordia), First Allmerica Financial Life Insurance Company (FAFLIC) and Protective Life Insurance Company (Protective) to effectuate a sale of substantially all of the life insurance business that we received in connection with such acquisitions. Because these agreements involve reinsurance of entire business segments, each covers a much larger volume of business than would a traditional reinsurance agreement, thereby exposing us to a concentration of credit risk with respect to each of these three counterparties.

As of December 31, 2019, we had outstanding obligations, represented by statutory reserves, ceded under the coinsurance agreements with Accordia, which remain unnovated, of $2.2 billion. Accordia maintains a custody account and a trust account under these agreements or related retrocession agreements, with assets equal to or greater than an agreed-upon required statutory balance that, as of December 31, 2019, was $2.1 billion and $616 million, respectively. As of December 31, 2019, we have outstanding obligations, represented by statutory reserves, ceded pursuant to the FAFLIC reinsurance agreements of $1.3 billion. Pursuant to the funds withheld agreement with FAFLIC, we maintain a funds withheld account with an agreed-upon statutory balance that, as of December 31, 2019, was $277 million. Pursuant to the terms of the coinsurance agreements with FAFLIC, FAFLIC maintains trust accounts with agreed-upon required statutory balances that, as of December 31, 2019, were $791 million, in the aggregate. As of December 31, 2019, we had outstanding obligations, represented by statutory reserves, ceded under the coinsurance agreement with Protective, which remain unnovated, of $1.4 billion. As of December 31, 2019, Protective maintained a trust account under this agreement with assets equal to $1.4 billion. We do not have a security interest in the assets in the custody accounts supporting the Accordia and FAFLIC reinsurance agreements. Therefore, in the event of an insolvency of Accordia or FAFLIC, our claims would be subordinated to those of such insurance company's policyholders and the assets in the relevant custody accounts may be available to satisfy the claims of such insurance company's general creditors in addition to our claims.

As with any reinsurance agreement, we remain liable to our policyholders if our counterparties fail to perform. Although each agreement provides that the respective counterparty agrees to indemnify us for losses sustained in connection with their respective performances of each agreement, such indemnification may not be adequate to compensate us for losses actually incurred in the event that the counterparty is either unable or unwilling to perform according to the agreements' terms. In addition to possible losses that could be incurred if our subsidiaries are forced to recapture these blocks, such subsidiaries may also face a substantial shortfall in capital to support the recaptured business, possibly resulting in material declines to the insurer's RBC ratio and/or creditworthiness and potentially expose the insurer to ratings downgrades, regulatory intervention, increased policyholder withdrawals or other negative effects.

ALRe and certain of our U.S. insurance subsidiaries reinsure liabilities from other insurance companies. Changes in the ratings, creditworthiness or market perception of such ceding companies or problems with the administration of policies reinsured to us could cause policyholders to surrender or lapse their policies in unexpected amounts. In addition, to the extent such ceding companies do not perform under their reinsurance agreements with us, we may not achieve the results we intended and could suffer unexpected losses. Our exposure to our subsidiaries' reinsurance counterparties could materially adversely affect our business, financial condition, results of operations and cash flows. In particular, our reinsurance agreement with VIAC exposes us to risks associated with impairments in financial strength or perceived financial strength of VIAC and its parent company Venerable Holdings, Inc (together with its subsidiaries, Venerable), an impairment to either of which may result in the surrender of policies earlier and in quantities greater than expected at the time the transaction was priced. In addition, Venerable will administer the fixed annuity block being reinsured. To the extent that Venerable fails to perform under our reinsurance agreement and associated arrangements, we may not achieve the return targets expected at the time the transaction was priced and our financial position and results of operations may thereby or otherwise be adversely affected.

In addition, we are exposed to credit loss in the event of nonperformance by our counterparties on derivative agreements. We seek to reduce the risk associated with such agreements by entering into such agreements with large, well-established financial institutions. However, there can be no assurance that we will not suffer losses in the event a derivative counterparty fails to perform or fulfill its obligations.

Our investment portfolio may be subject to concentration risk, particularly with respect to single issuers, including MidCap and AmeriHome; 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, and in A-A Mortgage Opportunities, L.P. (A-A Mortgage) and its indirect investment in AmeriHome, a mortgage lender and mortgage servicer. As of December 31, 2019, our exposure, including loaned amounts, to MidCap was $886 million, which represented 0.8% of our net invested assets and 6.6% of total Athene Holding Ltd. shareholders' equity. As of December 31, 2019, our exposure to A-A Mortgage was $487 million, which represented 0.4% of our net invested assets and 3.6% 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. To the extent that we suffer a significant loss on our investment in MidCap or A-A Mortgage, our financial condition and results of operations could be adversely affected.

Our significant single issuer holdings, including MidCap and AmeriHome, are concentrated largely in the financial services industry, specifically in the nonbank lending sector. These businesses largely focus on providing financing to individuals or entities. As a result, we have significant exposure to credit risk, which may be adversely impacted by changes in macroeconomic conditions, regulation and other factors. To the extent that such changes occur and cause a deterioration in the creditworthiness of the counterparties of these investees or adversely affect 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 December 31, 2019, 14% of our net invested assets were invested in issuers within the financial services industry, excluding CLOs. Any 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 December 31, 2019, 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.

A financial strength rating downgrade, potential downgrade or any other negative action by a rating agency could make our product offerings less attractive, inhibit our ability to acquire future business through acquisitions or reinsurance and increase our cost of capital, which could have a material adverse effect on our business.

Various NRSROs review the financial performance and condition of insurers and reinsurers, including our subsidiaries, and publish their financial strength ratings as indicators of an insurer's ability to meet policyholder obligations. These ratings are important to maintaining public confidence in our insurance subsidiaries' products, our insurance subsidiaries' ability to market their products and our competitive position. Factors that could negatively influence this analysis include:

- changes to our business practices or organizational business plan in a manner that no longer supports our ratings;
- unfavorable financial or market trends;
- a need to increase reserves to support our outstanding insurance obligations;
- our inability to retain our senior management and other key personnel;
- rapid or excessive growth, especially through large reinsurance transactions or acquisitions, beyond the bounds of capital sufficiency or management capabilities as judged by the NRSROs;
- significant losses to our investment portfolio; and
- changes in NRSROs' capital adequacy assessment methodologies in a manner that would adversely affect the financial strength ratings of our insurance subsidiaries.

Some other factors may also relate to circumstances outside of our control, such as views of the NRSRO and general economic conditions. Any downgrade or other negative action by a NRSRO with respect to the financial strength ratings of our insurance subsidiaries, or an entity we acquire, or our credit ratings, could materially adversely affect us and our ability to compete in many ways, including the following:

- reducing new sales of insurance products;
- harming relationships with or perceptions of distributors, IMOs, sales agents, banks and broker-dealers;
- increasing the number or amount of policy lapses or surrenders and withdrawals of funds, which may result in a mismatch of our overall asset and liability position;
- requiring us to offer higher crediting rates or greater policyholder guarantees on our insurance products in order to remain competitive;
- increase our borrowing costs;
- reducing our level of profitability and capital position generally or hindering our ability to raise new capital; or
- requiring us to collateralize obligations under or result in early or unplanned termination of hedging agreements and harming our ability to enter into new hedging agreements.

In order to improve or maintain their financial strength ratings, our subsidiaries may attempt to implement business strategies to improve their capital ratios. We cannot guarantee any such measures will be successful. We cannot predict what actions NRSROs may take in the future, and failure to improve or maintain current financial strength ratings could materially and adversely affect our business, financial condition, results of operations and cash flows.

We rely significantly on third parties for various services, and we may be held responsible for obligations that arise from the acts or omissions of third parties under their respective agreements with us if they are deemed to have acted on our behalf.

We rely significantly on third parties to provide various services that are important to our business, including investment, distribution and administrative services. As such, our business may be affected by the performance of those parties. Additionally, our operations are dependent on various technologies, some of which are provided or maintained by certain key outsourcing partners and other parties. See *Item 1. Business–Outsourcing* for certain of the functions that we outsource to third parties.

Many of our subsidiaries' products and services are sold through third-party intermediaries. In particular, our insurance businesses are reliant on such intermediaries to describe and explain these products and services to potential customers, and although we take precautions to avoid this result, such intermediaries may be deemed to have acted on our behalf. If that occurs, the intentional or unintentional misrepresentation of our subsidiaries' products and services in advertising materials or other external communications, or inappropriate activities by an intermediary or personnel employed by an intermediary could result in liability for us and have an adverse effect on our reputation and business prospects, as well as lead to potential regulatory actions or litigation involving or against us. In addition, we rely on third-party administrators (TPAs) to administer a portion of our annuity contracts, as well as our legacy life insurance business. Some of our reinsurers also use TPAs to administer business we reinsure to them. To the extent any of these TPAs do not administer such business appropriately, we have and may in the future experience customer complaints, regulatory intervention and other adverse impacts, which could affect our future growth and profitability. If any of these TPAs or their employees are found to have made material misrepresentations to our policyholders, violated applicable insurance, privacy or other laws and regulations or otherwise engaged in misconduct, we could be held liable for their actions and be subject to regulatory scrutiny, which could adversely affect our reputation, business prospects, financial condition, results of operations and cash flows.

Our U.S. insurance subsidiaries have experienced increased service and administration 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, a subsidiary of DXC Technology Company, which was retained by such Global Atlantic affiliates to provide services on such policies. AllianceOne also administers certain 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 similar service and administration issues.

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 the NYSDFS, the California Department of Insurance and the Texas Department of Insurance, indicating, in each case, that the respective regulator planned to undertake a market conduct examination 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 such annuity policies, including the administration of such blocks by AllianceOne. On June 28, 2018 we entered into a consent order with the NYSDFS resolving that matter in a manner that, when considering the indemnification received from affiliates of Global Atlantic, did not have a material impact on our financial condition, results of operations or cash flows.

In addition to the foregoing, we have received inquiries, and expect to continue to receive inquiries, from other regulatory authorities regarding the conversion matter. 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.

Additionally, past or future misconduct by agents that distribute our subsidiaries' products or employees of our vendors could result in violations of law by us, regulatory sanctions and/or serious reputational or financial harm and the precautions we take to prevent and detect this activity may not be effective in all cases. Although we employ controls and procedures designed to monitor associates' business decisions and to prevent us from taking excessive or inappropriate risks, associates may take such risks regardless of such controls and procedures.

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.

Regulators and law enforcement agencies in the UK and elsewhere have conducted civil and criminal investigations into whether the banks that contribute to the British Bankers' Association (BBA) in connection with the calculation of daily LIBOR may have been under-reporting or otherwise manipulating or attempting to manipulate LIBOR. A number of BBA member banks have entered into settlements with their regulators and law enforcement agencies with respect to this alleged manipulation of LIBOR.

Actions by the BBA, regulators or law enforcement agencies will result in changes to the manner in which LIBOR is determined or used and in the establishment of alternative reference rates. On July 27, 2017, the UK Financial Conduct Authority (FCA) announced that it intends to stop persuading or compelling banks to submit LIBOR rates after 2021. The FCA has indicated that it expects that the current member banks will voluntarily sustain LIBOR until the end of 2021, but they have no obligation to do so, and may discontinue their activities at any time. At this time, it is not possible to predict the effect of any such changes, any establishment of alternative reference rates or any other reforms to LIBOR that may be enacted in the UK or elsewhere.

The Alternative Reference Rate Committee of the New York office of the Board of Governors of the Federal Reserve (ARRC), and the International Swaps and Derivatives Association, have taken significant steps toward the development of consensus-based fallbacks and alternatives to LIBOR, which appear constructive for end-users, such as life insurers. The fallback proposals are intended to minimize disruptions if LIBOR is no longer usable. In addition, the International Swaps and Derivatives Association is amending its standard documentation to implement fallbacks for certain key interbank offered rates (IBORs). The fallbacks will apply if the relevant IBOR is permanently discontinued, based on defined triggers. There can be no assurance, however, that the alternative rates and fallbacks will be effective at preventing or mitigating disruption as a result of the transition. Should such disruption occur, it may adversely affect, among other things, (1) the trading market for LIBOR-based securities, including those held in our investment portfolio, (2) the market for derivative instruments, including those that we use to achieve our hedging objectives, and (3) 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. We expect to complete phase 1 by March 31, 2020. 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 7. Management's Discussion and Analysis of Financial Condition and Results of Operations–Industry Trends and Competition–Discontinuation of LIBOR* for further discussion.

Many of our invested assets are relatively illiquid and we may fail to realize profits from these assets for a considerable period of time, or lose some or all of the principal amount we invest in these assets if we are required to sell our invested assets at a loss at inopportune times to cover policyholder withdrawals or to meet our insurance, reinsurance or other obligations.

We offer certain products that allow policyholders to withdraw their funds under defined circumstances. In order to meet such obligations, we seek to manage our liabilities and configure our investment portfolios to provide and maintain sufficient liquidity to support expected withdrawal demands and contract benefits and maturities. However, in order to provide necessary long-term returns and to achieve our strategic goals, a certain portion of our assets are relatively illiquid. Many of our investments are in securities that are not publicly traded or that otherwise lack liquidity, such as our privately placed fixed maturity securities, below investment grade securities, investments in mortgage loans and alternative investments.

We record our relatively illiquid types of investments at fair value. If we were forced to sell certain of our assets, there can be no assurance that we would be able to sell them for the values at which such assets are recorded and we might be forced to sell them at significantly lower prices. In many cases, we may be prohibited by contract or applicable securities laws from selling such securities for a period of time. When we hold a security or position, it is vulnerable to price and value fluctuations and may experience losses if we are unable to timely sell, hedge or transfer the position. Thus, it may be impossible or costly for us to liquidate positions rapidly in order to meet unexpected withdrawal or recapture obligations. This potential mismatch between the liquidity of our assets and liabilities could have a material and adverse effect on our business, financial condition, results of operations and cash flows.

We may be the target or subject of, and may be required to defend against or respond to, litigation, regulatory investigations or enforcement actions.

We operate in an industry in which various practices are subject to potential litigation, including class actions, and regulatory scrutiny. We, like other financial services companies, are involved in litigation and arbitration in the ordinary course of business and may be the subject of regulatory proceedings (including investigations and enforcement actions). Plaintiffs may seek large or indeterminate amounts of damages in litigation and regulators may seek large fines in enforcement actions. Given the large or indeterminate amounts sometimes sought, and the inherent unpredictability of litigation and enforcement actions, it is possible that an unfavorable resolution of one or more matters could have a material and adverse effect on our business, financial condition, results of operations and cash flows. See *Item 3. Legal Proceedings* for certain matters to which we are a party. Even if we ultimately prevail in any litigation or receive positive results from investigations, we could incur material legal costs or our reputation could be materially adversely affected.

Our investments linked to real estate are subject to credit risk, market risk, servicing risk, loss from catastrophic events and other risks, which could diminish the value that we obtain from such investments.

As of December 31, 2019, 25.4% of our net invested assets were linked to real estate, including 9.6% fixed maturity and equity securities, such as CMBS and RMBS, and 15.8% mortgage loans, including commercial mortgage loans (CML) and RML. Defaults by third parties in the payment or performance of their obligations underlying these assets could reduce our investment income and realized investment gains or result in the recognition of investment losses. For example, the value of our real estate-related assets depends in part on the financial condition of the borrowers, the value of the real properties underlying the mortgages and, for commercial properties, the financial condition of the tenants of the properties underlying those mortgages, as well as general and specific economic trends affecting the overall default rate. An unexpectedly high rate of default on mortgages held by a CMBS or RMBS may limit substantially the ability of the issuer of such security to make payments to holders of such securities, reducing the value of those securities or rendering them worthless. The risk of such defaults is generally higher in the case of mortgage securitizations that include “sub-prime” or “alt-A” mortgages. As of December 31, 2019, 14.4% of our holdings in assets linked to real estate were invested in such “sub-prime” mortgages and “alt-A” mortgages. Changes in laws and other regulatory developments relating to mortgage loans may impact the investments of our portfolio linked to real estate in the future. Additionally, cash flow variability arising from an unexpected acceleration in mortgage prepayment behavior can be significant, and could cause a decline in the estimated fair value of certain “interest only” securities or loans.

The CML we hold, and CML underlying the CMBS that we hold, face both default and delinquency risk. Legislative proposals that would allow or require modifications to the terms of CML, an increase in the delinquency or default rate of our CML portfolio or geographic or sector concentration within our CML portfolio could materially and adversely impact our financial condition and results of operations. Our investments in RML and RMBS also present credit risk. Higher than expected rates of default or loss severities on our RML investments and the RML underlying our RMBS investments may adversely affect the value of such investments. A significant number of the mortgages underlying our RML and RMBS investments are concentrated in certain geographic areas. Any event that adversely affects the economic or real estate market in any of these areas could have a disproportionately adverse effect on our RML and RMBS investments. While we actively monitor our exposure to these and other risks inherent in this strategy, we cannot assure you that our hedging and risk management strategies will be effective. Any failure to manage these risks effectively could materially and adversely affect our financial condition and results of operations. A rise in home prices, concern regarding further changes to government policies designed to alter prepayment behavior, and increased availability of housing-related credit could combine to increase expected or actual prepayment speeds, which would likely lower the valuations of RML and the valuations of RMBS that we carry at a premium to par prices or that are structured as interest only securities and inverse interest only securities. In general, any significant weakness in the broader macro economy or significant problems in a particular real estate market may cause a decline in the value of residential properties securing the mortgages in that market, thereby increasing the risk of delinquency, default and foreclosure. This could, in turn, have a material adverse effect on our credit loss experience. As of December 31, 2019, of the 15.8% mortgage loans, 0.2% were in the process of foreclosure.

Control over the underlying assets in all of our real estate-related investments is exercised through servicers that we do not control. If a servicer is not vigilant in seeing that borrowers make their required periodic payments, borrowers may be less likely to make these payments, resulting in a higher frequency of delinquency and default. If a servicer takes longer to liquidate nonperforming mortgages, our losses related to those loans may be higher than we expected. Any failure by a servicer to service RMLs in which we are invested or which underlie a RMBS in which we are invested in a prudent, commercially reasonable manner could negatively impact the value of our investments in the related RML or RMBS.

Our investments in assets linked to real estate are also subject to loss in the event of catastrophic events, such as earthquakes, hurricanes, floods, tornadoes and fires. We have significant concentrations of real estate investments and collateral underlying investments linked to real estate in areas of the United States prone to catastrophe, including California, sections of the northeastern U.S., the South Atlantic states and the Gulf Coast. While loss experience in the event of a catastrophic event is contingent upon many factors, including the insured status of the underlying property and the seniority of our investment, in the case of structured securities, a catastrophic event impacting one or more of the aforementioned regions may cause some portion of the invested assets invested in assets linked to real estate to become impaired, which may have a material adverse impact on our financial condition and results of operations.

In addition to the credit and market risk that we face in relation to all of our real estate-related investments, certain of these investments may expose us to various environmental, regulatory and other risks. For example, our investment in RML could result in claims being assessed against us as a mortgage holder or property owner, including assignee liability, responsibility for tax payments, environmental hazards and other liabilities, including liabilities under the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980. We may continue to be liable under such claims after foreclosing on a property securing a mortgage loan held by us. Additionally, we may be subject to regulation by the CFPB as a mortgage holder or property owner. We are currently unable to predict the impact of such regulation on our business. Any adverse environmental claim or regulatory action against us resulting from our investment in RML could adversely impact our reputation, business, financial condition and results of operations.

Our investment portfolio may include investments in securities of issuers based outside the U.S., including emerging markets, which may be riskier than securities of U.S. issuers.

We may invest in securities of issuers organized or based outside the U.S. that may involve heightened risks in comparison to the risks of investing in U.S. securities, including unfavorable changes in currency rates and exchange control regulations, reduced and less reliable information about issuers and markets, less stringent accounting standards, illiquidity of securities and markets, higher brokerage commissions, transfer taxes and custody fees, local economic or political instability and greater market risk in general. In particular, investing in securities of issuers located in emerging market countries involves additional risks, such as exposure to economic structures that are generally less diverse and mature than, and to political systems that can be expected to have less stability than, those of developed countries; national policies that restrict investment by foreigners in certain issuers or industries of that country; the absence of legal structures governing foreign investment and private property; an increased risk of foreclosure on collateral located in such countries; a lack of liquidity due to the small size of markets for securities of issuers located in emerging markets; and price volatility.

As of December 31, 2019, 32% of the carrying value of our available-for-sale (AFS) securities, including related parties, was comprised of securities of issuers based outside of the U.S. and debt securities of foreign governments. Of our total AFS securities, including related parties, as of December 31, 2019, 10% were invested in CLOs of Cayman Islands issuers (for which the underlying assets are largely loans to U.S. issuers) and 22% were invested in other non-U.S. issuers. While we invest in securities of non-U.S. issuers, the currency denominations of such securities usually match the currency denominations of the liabilities that the assets support. When the currency denominations of the assets and liabilities do not match, we generally undertake hedging activities to eliminate or mitigate currency mismatch risk. See *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations–Consolidated Investment Portfolio* for further information on international exposure.

We are subject to significant operating and financial restrictions imposed by our credit agreement and we are also subject to certain operating restrictions imposed by the indenture to which we are a party.

On December 3, 2019, AHL, ALRe, Athene USA Corporation (Athene USA) and AARe, as borrowers, entered into a credit agreement with a syndicate of banks, including Citibank, N.A., as administrative agent, and the other lenders named therein (Credit Facility). The Credit Facility contains various restrictive covenants which limit, among other things, subject to certain exceptions:

- the ability of material subsidiaries of the borrowers to incur additional indebtedness and make guarantees;
- the ability to create liens on the borrowers' assets and on the equity interests of material subsidiaries;
- the ability of any borrower or any material subsidiary thereof to make fundamental changes;
- the ability of any borrower or any subsidiary thereof to engage in certain transactions with affiliates; and
- the ability to make changes in the nature of the borrowers' business.

These covenants, some of which are financial, may prevent or restrict us from capitalizing on business opportunities, including making additional acquisitions or growing our business. In addition, if AHL undergoes a "change of control" as defined in the Credit Facility, the lenders under the Credit Facility will have the right to terminate the facility and/or accelerate the maturity of all outstanding loans. As of December 31, 2019, no borrowings under the Credit Facility were outstanding. As a result of these restrictions and their effects on us, we may be limited in how we conduct our business and may be unable to raise additional debt financing to compete effectively or to take advantage of new business opportunities.

In addition to the covenants to which we are subject pursuant to our Credit Facility, AHL is also subject to certain limited covenants pursuant to the Indenture, dated January 12, 2018, by and between us and U.S. Bank National Association, as trustee (Base Indenture), as supplemented by the First Supplemental Indenture, dated as of January 12, 2018, by and among us and U.S. Bank National Association, as trustee (together with the Base Indenture, Indenture). The Indenture was entered into in connection with AHL's issuance of its 4.125% Senior Notes due 2028 and contains restrictive covenants which limit, subject to certain exceptions, AHL's and, in certain instances, some or all of its subsidiaries' ability to make fundamental changes, create liens on any capital stock of certain of AHL's subsidiaries, and sell or dispose of the stock of certain of AHL's subsidiaries. These covenants may prevent or restrict takeovers or business combinations that our shareholders might consider in their best interest.

The terms of any future indebtedness we may incur may contain additional restrictive covenants.

Item 1A. Risk Factors

We operate in a highly competitive industry that includes a number of competitors, many of which are larger and more well-known than we are, which could limit our ability to achieve our growth strategies and could materially and adversely affect our business, financial condition, results of operations, cash flows and prospects.

We operate in highly competitive markets and compete with large and small industry participants. These companies compete for an increasing pool of retirement assets, driven primarily by aging of the U.S. population and the reduction in, and concerns about the viability of, financial safety nets historically provided by governments and employers. We face intense competition, including from U.S. and non-U.S. insurance and reinsurance companies, broker-dealers, financial advisors, asset managers and diversified financial institutions, with respect to both the products we offer and the acquisition and block reinsurance transactions we pursue. We compete based on a number of factors including perceived financial strength, credit ratings, brand recognition, reputation, quality of service, performance of our products, product features, scope of distribution and price. A decline in our competitive position as to one or more of these factors could adversely affect our profitability. In addition, we may in the future sacrifice our competitive or market position in order to improve our short-term profitability, particularly in the highly competitive retail markets, which may adversely affect our long-term growth and results of operations. Alternatively, we may sacrifice short-term profitability to maintain market share and long-term growth.

Many of our competitors are large and well-established and some have greater market share or breadth of distribution; offer a broader range of products, services or features; assume a greater level of risk; or have higher financial strength, claims-paying or credit ratings than we do. Our competitors may also have lower operating costs or return on capital requirements than we do which may allow them to price products, reinsurance arrangements or acquisitions more competitively. In recent years, there has been substantial consolidation among companies in the financial services industry due to economic turmoil resulting in increased competition from large, efficient, well-capitalized financial services firms. The competitive pressures arising from consolidation could result in increased pressure on the pricing of certain of our products and services, and could harm our ability to maintain or increase profitability. In addition, if our financial strength and credit ratings remain lower than the ratings of certain of our competitors, we may experience increased surrenders and/or an inability to reach sales targets, which may have a material and adverse effect on our growth, business, financial condition, results of operations, cash flows and prospects.

If we are unable to attract and retain IMOs, agents, banks and broker-dealers, sales of our products may be adversely affected.

We distribute our annuity products through a variable cost distribution network, which includes approximately 50 IMOs, approximately 48,000 independent agents, 13 banks and 90 regional broker-dealers. We must attract and retain such marketers, agents and financial institutions to sell our products. In particular, insurance companies compete vigorously for productive agents. We compete with other life insurance companies for marketers, agents and financial institutions primarily on the basis of our financial position, support services, compensation, credit ratings and product features. Such marketers, agents and financial institutions may promote products offered by other life insurance companies that may offer a larger variety of products than we do. Our competitiveness for such marketers, agents and financial institutions also depends upon the long-term relationships we develop with them. There can be no assurance that such relationships will continue in the future. In addition, our growth plans include increasing the distribution of annuity products through small and mid-size banks and regional broker-dealers. If we are unable to attract and retain sufficient marketers and agents to sell our products or if we are not successful in expanding our distribution channels within the bank and broker-dealer markets, our ability to compete and our sales volumes and results of operations could be adversely affected.

A significant portion of our retail annuities are sold through a proprietary distribution network.

We distribute annuity products through independent producers affiliated with certain IMOs. A significant portion of our retail annuity production results from sales of product in our BalancedChoice Annuity product series, which contains certain product features that are licensed from a third-party actuarial firm. Only IMOs which are affiliated with the Annexus Group are permitted to distribute the BalancedChoice Annuity product series. If we experienced a disruption in our relationship with the Annexus Group, it could have an adverse effect for a period of time on our annuity sales of this product series.

Our growth strategy includes acquisitions and block reinsurance transactions, and our ability to consummate these transactions on economically advantageous terms acceptable to us in the future is unknown.

We have grown and intend to grow our business in the future in part by acquisitions of other insurance companies and businesses, and through block reinsurance, each of which could require additional capital, systems development and skilled personnel. We may experience challenges identifying, financing, consummating and integrating such acquisitions and block reinsurance transactions. While we have reviewed various opportunities and have successfully completed transactions in the past to facilitate our growth, competition exists in the market for profitable blocks of insurance and businesses. Such competition is likely to intensify as insurance businesses become more attractive targets. It is also possible that merger and acquisition transactions will become less frequent, which could also make it more difficult for us to implement our growth strategy as we have done in the past. Thus, in the future, we may not be able to find suitable acquisition or block reinsurance opportunities that are available at attractive valuations, or at all. Even if we do find suitable opportunities, we may not be able to consummate the transactions on commercially acceptable terms. In addition, to the extent we determine to finance an acquisition or block reinsurance transaction, suitable financing arrangements may not be available on acceptable terms, on a timely basis, or at all. Our acquisition and block reinsurance transaction activities may also divert the attention of our management from our business, which may have an adverse effect on our business and results of operations.

Repurchase agreement programs subject us to potential liquidity and other risks.

We may engage in repurchase agreement 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. These repurchase agreements provide us with liquidity and in certain instances also allow us to earn spread income. Under such agreements we may be required to deliver additional securities or cash as margin to the counterparty if the value of the securities sold decreases prior to the repurchase date. If we are required to return significant amounts of cash collateral or post cash or securities as margin on short notice or have inadequate cash on hand as of the repurchase date, we may be forced to sell securities to meet such obligations and may have difficulty doing so in a timely manner or may be forced to sell securities in a volatile or illiquid market for less than we otherwise would have been able to realize under normal market conditions. Rehypothecation of subject securities by the counterparty may also create risk with respect to the counterparty's ability to perform its obligations to tender such securities on the repurchase date. Such facilities may not be available to us on favorable terms or at all in the future.

Foreign currency fluctuations may reduce our net income and our capital levels, adversely affecting our financial condition.

We are exposed to foreign currency exchange rate risk through the investments in our investment portfolio that are denominated in currencies other than the U.S. dollar or are issued by entities which primarily conduct their business outside of the U.S. We are also exposed to foreign currency exchange risk through our investment in certain subsidiaries domiciled in foreign jurisdictions, both as a result of our direct investment and as a result of currency mismatches between the assets and liabilities of those subsidiaries. We may employ various strategies (including hedging) to manage our exposure to foreign currency exchange risk. To the extent that these exposures are not fully hedged or the hedges are ineffective, our results or equity may be reduced by fluctuations in foreign currency exchange rates that could materially adversely affect our financial condition and results of operations.

Our business in Bermuda could be adversely affected by Bermuda employment restrictions.

As of December 31, 2019, we employed 37 non-Bermudians in our Bermuda office (other than spouses of Bermudians and holders of permanent residents' certificates). We may hire additional non-Bermudians as our business grows. Under Bermuda law, non-Bermudians (other than spouses of Bermudians, holders of permanent residents' certificates, and holders of working residents' certificates) generally may not engage in any gainful occupation in Bermuda without a valid government work permit (with certain exceptions). A work permit is generally granted or renewed upon showing that, after proper public advertisement, no Bermudian, spouse of a Bermudian, or holder of a permanent resident's or working resident's certificate who meets the minimum standards reasonably required by the employer has applied for the job. Work permit terms that are available for request range from three months to five years. We may not be able to use the services of one or more of our non-Bermudian employees if we are not able to obtain, or in certain instances renew, work permits for them, which could have a material adverse effect on our business, financial condition and results of operations.

The announcement and pendency of the Share Exchange and related transactions could adversely affect our businesses, results of operations and financial condition.

The announcement and pendency of the Share Exchange and related transactions could cause disruptions in and create uncertainty surrounding our businesses, including affecting our relationships with our existing and future policyholders, reinsurance counterparties, producers, employees and regulators, which could have an adverse effect on our businesses, results of operations and financial condition, and in turn, the price of our Class A common shares, regardless of whether the Share Exchange or other transactions are completed. In addition, we have expended, and continue to expend, significant management resources, in an effort to complete the Share Exchange, which are being diverted from our day-to-day operations.

If the Share Exchange is not completed, the price of our Class A common shares may fall to the extent that the current price of the shares reflects a market assumption that the Share Exchange will be completed. In addition, the failure to complete the Share Exchange may result in us receiving negative publicity or having a negative impression in the investment community and may affect our relationships with our existing and future policyholders, reinsurance counterparties, producers, employees and regulators and other partners in the business community.

We may be a target of securities class action and derivative lawsuits which could result in substantial costs and may delay or prevent the Share Exchange from being completed.

Securities class action lawsuits and derivative lawsuits are often brought against companies that have entered into agreements similar to the Transaction Agreement. Even if the lawsuits are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages, which could have a negative impact on our financial condition, results of operations and cash flows. Additionally, if a plaintiff is successful in obtaining an injunction prohibiting consummation of the Share Exchange, then that injunction may delay or prevent the Share Exchange from being completed.

Item 1A. Risk Factors

There is no public market for the AOG units we expect to receive in connection with the Share Exchange; the future performance of the AOG units is not guaranteed and our ability to liquidate the AOG units is limited.

The outstanding AOG units are privately held and are not traded in any public market. In addition, the value of the AOG units may perform in a manner that materially differs from our current expectations or from our expectations relative to the future performance of our Class A common shares, which we are, in part, exchanging for AOG units. Furthermore, we may only offer to sell the AOG units on a quarterly basis, subject to the terms, conditions and procedures set forth in the relevant transaction agreement. Accordingly, our ability to liquidate a portion of the consideration we expect to receive will be limited.

Risks Relating to Our Investment Manager

We rely on our investment management agreements with Apollo for the management of our investment portfolio. Apollo may terminate these arrangements at any time, and there are limitations on our ability to terminate such arrangements, which may adversely affect our investment results.

We rely on Apollo to provide us with investment management services pursuant to various investment management agreements (IMAs). Apollo relies in part on its ability to attract and retain key people, and the loss of services of one or more of the members of Apollo or any of its subsidiaries' senior management could delay or prevent Apollo from fully implementing our investment strategy.

IMA Termination Rights

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 the applicable Apollo subsidiary, 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"). For purposes of these provisions of the bye-laws, an "Independent Director" cannot be (x) an officer or employee of ours or any of our subsidiaries or (y) an officer or employee of (1) any member of the Apollo Group described in clauses (i) through (iv) of the definition of "Apollo Group" as set forth in our bye-laws or (2) AGM or any of its subsidiaries (excluding any subsidiary that constitutes any portfolio company (or investment) of (A) an investment fund or other investment vehicle whose general partner, managing member or similar governing person is owned, directly or indirectly, by AGM or by one or more of its subsidiaries or (B) a managed account agreement (or similar arrangement) whereby AGM or one or more of its subsidiaries serves as general partner, managing member or in a similar governing position). The limitations on our ability to terminate the IMAs with the applicable Apollo subsidiary could have a material adverse effect on our financial condition and results of operations.

Our organizational documents give our Independent Directors complete discretion, while acting in good faith, as to whether to determine if an AHL Cause event has occurred with respect to any IMA with the applicable Apollo subsidiary, and therefore our Independent Directors are under no obligation to make, and accordingly may exercise their discretion never to make, such a determination.

The boards of directors of AHL's subsidiaries may terminate an IMA with the applicable Apollo subsidiary relating to the applicable subsidiary if such subsidiary's board of directors determines that such termination is required in the exercise of its fiduciary duties. If our subsidiaries do elect to terminate any such agreement, other than as provided above, we may be in breach of our bye-laws, which could subject us to regulatory scrutiny, expose us to shareholder lawsuits and could have a negative effect on our financial condition and results of operations.

Termination by Apollo

Conversely, we may be adversely affected if Apollo elects to terminate an IMA at a time when such agreement remains advantageous to us. We depend upon Apollo to implement our investment strategy. However, Apollo does not face the restrictions described above with regards to its ability to terminate any of its agreements with us and may terminate such agreements at any time. If Apollo chooses to terminate such agreements, there is no assurance that we could find a suitable replacement or that certain of the opportunities made available to us as a result of our relationship with Apollo would be offered by a suitable replacement, and therefore our financial condition and results of operations could be adversely impacted by our failure to retain a satisfactory investment manager.

Interruption or other operational failures in telecommunications, information technology and other operational systems at Apollo or a failure to maintain the security, integrity, confidentiality or privacy of sensitive data residing on Apollo's systems, including as a result of human error, could have a material adverse effect on our business.

We are highly dependent on Apollo, as our investment manager, to maintain information technology and other operational systems to record and process its transactions with respect to our investment portfolio, which includes providing information that enables us to value our investment portfolio and may affect our financial statements. Apollo could experience a failure of one of these systems, its employees or agents could fail to monitor and implement enhancements or other modifications to a system in a timely and effective manner or its employees or agents could fail to complete all necessary data reconciliation or other conversion controls when implementing a new software system or modifications to an existing system. Additionally, anyone who is able to circumvent Apollo's security measures and penetrate its information technology systems could access, view, misappropriate, alter or delete information in the systems, including proprietary information relating to our investment portfolio. The maintenance and implementation of these systems at Apollo is not within our control. Should Apollo's systems fail to accurately record information pertaining to our investment portfolio, we may inadvertently include inaccurate information in our financial statements and experience a lapse in our internal control over financial reporting. The failure of any one of these systems at Apollo for any reason, or errors made by its employees or agents, could cause significant interruptions to its operations, which could adversely affect our internal control over financial reporting or have a material adverse effect on our business, financial condition and results of operations.

The historical performance of Apollo should not be considered as indicative of the future results of our investment portfolio, our future results or any returns expected on our common shares.

Our investment portfolio's returns have benefited historically from investment opportunities and general market conditions that currently may not exist and may not repeat themselves, and there can be no assurance Apollo will be able to avail itself of profitable investment opportunities in the future. Furthermore, the historical returns of our investments managed by Apollo are not directly linked to returns on our common shares, which are affected by various factors, one of which is the value of our investment portfolio. In addition, Apollo is compensated based on the aggregate value of the assets it manages on our behalf and on the allocation of those assets to certain fee categories, rather than on the investment returns achieved. Accordingly, there can be no guarantee Apollo will be able to achieve any particular return for our investment portfolio in the future.

The returns that we expect to achieve on our investment portfolio may not be realized.

We make certain assumptions regarding our future financial performance, including but not limited to, target returns on our organic and inorganic channels and target net spreads. Included within these assumptions are estimates regarding the level of returns to be achieved on our investment portfolio, including assumptions regarding the expected future performance of assets originated by Apollo's asset origination platforms. These returns are subject to market and other factors and we can give no assurance that they will ultimately be achieved. Actual results may differ, perhaps significantly, from our current expectations. To the extent that such differences occur, our future financial performance may be materially and adversely different than that communicated herein and elsewhere.

Risks Relating to Insurance and Other Regulatory Matters

Our industry is highly regulated and we are subject to significant legal restrictions and these restrictions may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects.

U.S. Laws and Regulations

Our U.S. subsidiaries are subject to a complex and extensive array of laws and regulations that are administered and enforced by state insurance regulators, state securities administrators, state banking authorities, the SEC, FINRA, the DOL, the IRS and the Office of the Comptroller of the Currency. See *Item 1. Business–Regulation–United States* for a summary of certain of the U.S. state and federal laws and regulations applicable to our business. Failure to comply with these laws and regulations could subject us to administrative penalties imposed by a particular governmental or self-regulatory authority, unanticipated costs associated with remedying such failure or other claims, harm to our reputation, or interruption of our operations, any of which could have a material and adverse effect on our financial position, results of operations and cash flows.

In addition to the foregoing risks, the financial services industry is the focus of increased regulatory scrutiny as various state and federal governmental agencies and self-regulatory organizations conduct inquiries and investigations into the products and practices of the companies within this industry. Governmental authorities in the United States and worldwide have become increasingly interested in potential risks posed by the insurance industry as a whole, and to commercial and financial systems in general, as indicated by the recent adoption of the revised global insurance capital standard by the IAIS, as well as the U.S. group capital calculation being developed by the NAIC. See *Item 1. Business–Regulation–Enterprise-Wide–Developing International Matters and Group Capital* for further discussion. While we cannot predict the exact nature, timing or scope of possible governmental initiatives, there may be increased regulatory intervention in the insurance and financial services industry in the future.

Bermuda Laws and Regulations

As a holding company, AHL is not subject to the laws of Bermuda governing insurance companies; however, our Bermuda reinsurance subsidiaries are registered in Bermuda under the Bermuda Insurance Act as Class C and Class E insurers and are subject to the Bermuda Insurance Act and the rules and regulations promulgated thereunder. See *Item 1. Business–Regulation–Bermuda* for a summary of certain of the Bermuda laws and regulations applicable to our business. Failure to comply with these laws and regulations could subject us to monetary penalties and/or restrictions on our business imposed by the BMA, unanticipated costs associated with remedying such failure or other claims, harm to our reputation, interruption of our operations, revocation of our certificate of incorporation or an adverse impact on our financial position or results of operations.

Our failure to obtain or maintain licenses and/or other regulatory approvals as required for the operations of our insurance subsidiaries may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects.

Each regulator retains the authority to license insurers in its jurisdiction and an insurer generally may not operate in a jurisdiction in which it is not licensed. We have U.S. domiciled insurance subsidiaries that collectively are currently licensed to do business in all 50 states and the District of Columbia. Our ability to retain these licenses depends on our and our subsidiaries' ability to meet requirements established by the NAIC and adopted by each state, such as RBC standards and surplus requirements. Some of the factors influencing these requirements, particularly factors such as changes in equity market levels, the value of certain derivative instruments that do not receive hedge accounting, the value and credit ratings of certain fixed-income and equity securities in our investment portfolio, interest rate changes, changes to the applicable RBC formulas and the interpretation of the NAIC's instructions with respect to RBC calculation methodologies, are out of our control.

In addition, licensing regulations differ as to products and jurisdictions and may be subject to interpretation as to whether certain licenses are required with respect to the manner in which we may sell or service some of our products in certain jurisdictions. The degree of complexity is heightened in the context of products that are issued through our institutional channel, including our PRT products, where one product may cover risks in multiple jurisdictions.

If the factors discussed above adversely affect us or a state regulator interprets a licensing requirement differently than we do and we are unable to meet the requirements above, our subsidiaries could lose their licenses to do business in certain states; be subject to additional regulatory oversight; have their licenses suspended; be subject to rescission requests, fines, administrative penalties or payments to policyholders; or be subject to seizure of assets. A loss or suspension of any of our subsidiaries' licenses or an inability of any of our insurance subsidiaries to be able to sell or service certain of our insurance products in one or more jurisdictions may negatively impact our reputation in the insurance market and result in our subsidiaries' inability to write new business, distribute funds or pursue our investment/overall business strategy.

On January 23, 2019, we received a letter from the NYSDFS, which expressed concerns with our interpretation and reliance upon certain exemptions from licensing in New York in connection with certain activities undertaken by our PRT business within New York State. We have been in dialogue with the NYSDFS regarding changes to our PRT business practices that are necessary to comply with New York law. Separately, on September 11, 2019, the NYSDFS issued Insurance Circular Letter No. 10 (2019) to remind all life insurers and insurance producers doing business in New York that an unauthorized life insurer's employees or other representatives may not solicit, negotiate, sell, or service group annuity contracts through in-person meetings, telephone calls, mail, emails, access to web portals or in any other manner from an office or any other location in New York. Also, in 2019, we were notified by the NYSDFS that, in addition to such changes in our business practices, it proposes that we enter into a settlement agreement or consent order to resolve such licensing concerns. Although we do not expect any changes in our business practices implemented as a result of our discussions with the NYSDFS to have a material adverse effect on our ability to write PRT business, it is possible such changes could have a material impact on our future growth prospects within our PRT channel. Further, such settlement agreement or consent order, if entered into, will include fines and penalties. If we are unable to enter into a settlement agreement or consent order, the ultimate resolution of this matter could have a material impact on our results of operations.

The licenses currently held by our insurance subsidiaries are limited in scope with respect to the products that may be sold within the respective jurisdictions. To the extent that our insurance subsidiaries seek to sell products for which we are not currently licensed, such subsidiaries would be required to become licensed in each of the respective jurisdictions in which such products are expected to be sold. There is no assurance that our insurance subsidiaries would be able to obtain the relevant licenses and the subsidiaries' inability to do so may impair our competitive position and reduce our growth prospects, causing our financial position, results of operations and cash flows to fall below our current expectations.

Our Bermuda reinsurance subsidiaries, as Bermuda domiciled insurers, are also required to maintain licenses. Each of our Bermuda reinsurance subsidiaries is licensed as a reinsurer in Bermuda. Bermuda insurance statutes and regulations and policies of the BMA require that our Bermuda reinsurance subsidiaries, among other things, maintain a minimum level of capital and surplus; satisfy solvency standards; restrict dividends, distributions and reductions of capital; obtain prior approval or provide notification to the BMA, as the case may be, of ownership, transfer and disposition of shareholder controller shares; maintain a head office and have certain officers resident in Bermuda; appoint and maintain a principal representative in Bermuda; and provide for the performance of certain periodic examinations of itself and its financial condition. A failure to meet these conditions may result in the suspension or revocation of a Bermuda reinsurance subsidiary's license to do business as a reinsurance company in Bermuda, which would mean that such Bermuda reinsurance subsidiary would not be able to enter into any new reinsurance contracts until the suspension ended or it became licensed in another jurisdiction. Any such suspension or revocation of a Bermuda reinsurance subsidiary's license would negatively impact its and our reputation in the reinsurance marketplace and could have a material adverse effect on our results of operations.

UK law imposes licensing and other regulatory requirements in respect of insurance and reinsurance business carried out in the UK. AHL, ALRe and ACRA 1A are UK tax resident companies but do not have the UK regulatory licenses required to write or carry out insurance business in the UK. Accordingly, their business does not involve transactions with UK domiciled clients and we believe that their operations and governance arrangements are otherwise undertaken to comply with UK regulatory requirements. ALReI is a Bermuda domiciled and regulated reinsurance subsidiary that is not a UK tax resident and does not have the UK regulatory licenses required to write or carry out insurance business in the UK. ALReI assumed reinsurance business from a UK domiciled client in December 2019, and will continue to seek other such opportunities going forward, in accordance with and as permitted under UK law. We believe ALReI's business, operations and governance arrangements are undertaken to comply with UK law. We will continue to monitor developments in UK regulation to seek to cause AHL, ALRe, ACRA 1A and ALReI to comply with UK law and regulation at all times; however, there can be no assurance that the UK regulatory authorities will not interpret the application of the relevant rules in a manner that differs from our interpretation and challenge the existing or future arrangements.

The process of obtaining licenses is time consuming and costly, and we may not be able to become licensed in jurisdictions other than those in which our subsidiaries are currently licensed and/or for products for which we are currently licensed. The modification of the conduct of our business resulting from our and our subsidiaries becoming licensed in certain jurisdictions or for certain products could significantly and negatively affect our business. In addition, our inability to comply with insurance statutes and regulations could significantly and adversely affect our business by limiting our ability to conduct business as well as subjecting us to penalties and fines.

Changes in the laws and regulations governing the insurance industry or otherwise applicable to our business, may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects.

Certain of the laws and regulations to which we are subject are summarized in *Item 1. Business–Regulation*. Changes in the laws and regulations relevant to our business may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects. Certain of the risks associated with changes in these laws and regulations are discussed in greater detail below.

The Dodd-Frank Act makes sweeping changes to the regulation of financial services entities, products and markets. Historically, the federal government has not regulated the insurance business, however, the Dodd-Frank Act generally provides for enhanced federal supervision of financial institutions, including insurance companies in certain circumstances, and financial activities that represent a systemic risk to financial stability or the economy. Certain provisions of the Dodd-Frank Act are or may become applicable to us, our competitors or those entities with which we do business, including, but not limited to: the establishment of a comprehensive federal regulatory regime with respect to derivatives; the establishment of consolidated federal regulation and resolution authority over SIFIs; the establishment of the Federal Insurance Office; changes to the regulation of broker-dealers and investment advisors; changes to the regulation of reinsurance; changes to regulations affecting the rights of shareholders; the imposition of additional regulation over credit rating agencies; the imposition of concentration limits on financial institutions that restrict the amount of credit that may be extended to a single person or entity; and mandatory on-facility execution and clearing of certain derivative contracts.

Legislative or regulatory requirements imposed by or promulgated in connection with the Dodd-Frank Act may impact us in many ways, including, but not limited to: placing us at a competitive disadvantage relative to our competition or other financial services entities; changing the competitive landscape of the financial services sector or the insurance industry; making it more expensive for us to conduct our business; requiring the reallocation of significant company resources to government affairs; increasing our legal and compliance related activities and the costs associated therewith as the Dodd-Frank Act may permit the preemption of certain state laws when inconsistent with international agreements, such as the EU Covered Agreement and the UK Covered Agreement; and otherwise having a material adverse effect on the overall business climate as well as our financial condition and results of operations.

Heightened standards of sales conduct as a result of the implementation of SAT or the adoption of other similar proposed rules or regulations could also increase the compliance and regulatory burdens on our representatives, and could lead to increased litigation and regulatory risks, changes to our business model, a decrease in the number of our securities-licensed representatives and a reduction in the products we offer to our clients, any of which could have a material adverse effect on our business, financial condition and results of operations.

In addition, we expect the worldwide demographic trend of population aging will cause policymakers to continue to focus on the framework of U.S. and non-U.S. retirement systems, which may drive additional changes regarding the manner in which individuals plan for and fund their retirement, the extent of government involvement in retirement savings and funding, the regulation of retirement products and services and the oversight of industry participants. Any incremental requirements, costs and risks imposed on us in connection with such current or future legislative or regulatory changes, may constrain our ability to market our products and services to potential customers, and could negatively impact our profitability and make it more difficult for us to pursue our growth strategy.

Although we are subject to regulation in each state in which we conduct business, in many instances the state insurance laws and regulations emanate from the NAIC. State insurance regulators and the NAIC regularly re-examine existing laws and regulations applicable to insurance companies and their products. Any proposed or future legislation or NAIC initiatives, if adopted, may be more restrictive on our ability to conduct business than current regulatory requirements or may result in higher costs or increased statutory capital and reserve requirements. Changes in these laws and regulations or interpretations thereof are often made for the benefit of the consumer and at the expense of the insurer and could have a material adverse effect on our domestic insurance subsidiaries' businesses, financial condition and results of operations. We are also subject to the risk that compliance with any particular regulator's interpretation of a legal or accounting issue may not result in compliance with another regulator's interpretation of the same issue, particularly when compliance is judged in hindsight. There is an additional risk that any particular regulator's interpretation of a legal or accounting issue may change over time to our detriment, or that changes to the overall legal or market environment, even absent any change of interpretation by a particular regulator, may cause us to change our views regarding the actions we need to take from a legal risk management perspective, which could necessitate changes to our practices that may, in some cases, limit our ability to grow and improve profitability.

Risks Relating to Taxation

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 because there are continued uncertainties regarding the computation of BEAT despite the recent release of final regulations implementing the BEAT, we have undertaken certain actions intended to mitigate the potential effect of the BEAT on our results of operations. While not expected, such actions may have adverse consequences to our business. 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 incorporated under the laws of non-U.S. jurisdictions, including Bermuda. AHL and its subsidiaries that are treated as foreign corporations under the Internal Revenue Code (the Non-U.S. Subsidiaries, and together with AHL, the Non-U.S. Companies) have historically intended to operate in a manner that will not cause any of the Non-U.S. Companies to be treated as being engaged in a trade or business within the U.S. or subject to current U.S. federal income taxation on their net income. 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 our Non-U.S. Companies to conduct business differently. Further, 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 is engaged in a trade or business in the U.S.

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 the income tax treaty between the U.S. and Bermuda (Bermuda Treaty) and the UK Treaty. Any such U.S. federal income taxation could result in substantial tax liabilities and consequently could have a material adverse effect on our financial condition, results of operations and cash flows.

AHL and ALRe are UK tax residents and expect to qualify for the benefits of the UK Treaty because AHL's Class A common shares are listed and regularly traded on the NYSE. ACRA is also a UK tax resident and expects to qualify for the benefits of the UK Treaty by reason of satisfying an ownership and base erosion test. Accordingly, AHL, ALRe and ACRA are expected to qualify for exemptions from, or reduced rates of, U.S. tax on certain amounts that are from U.S. sources or connected with a U.S. trade or business, provided that they satisfy all of the requirements of the UK Treaty. However, there can be no assurances that AHL, ALRe and ACRA will continue to qualify for treaty benefits, particularly given the potential implications of the Bermuda Economic Substance Act 2018, or will not have a U.S. permanent establishment to which their income is attributable. If AHL, ALRe or ACRA fails to qualify for treaty benefits or has a U.S. permanent establishment to which its income is attributable, 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 depositary shares representing an interest in our preferred stock or own our Class A common shares may be subject to U.S. federal income taxation at ordinary income rates on our undistributed earnings and profits.

AHL's bye-laws generally limit the voting power of our Class A common shares (and certain other of our voting securities) such that no person owns (or is treated as owning) more than 9.9% of the total voting power of our common shares (with certain exceptions). AHL's bye-laws also generally reduce the voting power of Class B common shares held by certain holders if (A) one or more U.S. persons that own (or are treated as owning) more than 9.9% of the total voting power of our common shares own (or are treated as owning) individually or in the aggregate more than 24.9% of the voting power or the value of our common shares or (B) a U.S. person that is classified as an individual, an estate or a trust for U.S. federal income tax purposes owns (or is treated as owning) more than 9.9% of the total voting power of our common shares. Additionally, AHL's bye-laws require the board of AHL to refer certain decisions with respect to ALRe and our non-U.S. subsidiaries to our shareholders, and to vote our shares in those subsidiaries accordingly. These provisions were intended to reduce the likelihood that AHL, ALRe or our Non-U.S. Companies will be treated as a CFC, other than for purposes of taking into account related person insurance income (RPII). However, the relevant attribution rules are complex and there is no definitive legal authority on whether the voting provisions included in AHL's organizational documents are effective for purposes of the CFC provisions. In connection with the Share Exchange, our shareholders approved certain amendments to our bye-laws, including to the voting cutback provisions. These amendments will become effective if and when the Share Exchange and related transactions close.

Moreover, the Tax Act eliminated the prohibition on "downward attribution" from non-U.S. persons to U.S. persons under Section 958(b)(4) of the Internal Revenue 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 for CFC purposes. Further, we believe that other U.S. persons are currently treated as 10% U.S. Shareholders (as defined below) that own more than 25% of the vote (and potentially more than 25% of the value) of ALRe by reason of downward attribution from our direct or indirect shareholders. Accordingly, the Non-U.S. Subsidiaries are currently treated as CFCs and ALRe is believed to be a CFC, at least for purposes of taking into account certain insurance income, without regard to whether the provisions of our bye-laws described above are effective for purposes of the CFC provisions. 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 the IRS or a court would interpret the change made by the Tax Act in a manner consistent with such indicated intent.

For any taxable year in which a Non-U.S. Company is treated as a CFC, a “10% U.S. Shareholder” of the Non-U.S. Company that held depositary shares representing an interest in our preferred stock or held our Class A common shares directly or indirectly through non-U.S. entities as of the last day in such taxable year that the company was a CFC would generally be required to include in gross income as ordinary income its pro rata share of the company’s insurance and reinsurance income and certain other investment 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. Special rules apply for purposes of taking into account any 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.

Because of the limitations in AHL’s bye-laws referred to above, among other factors, we believe it is unlikely that any U.S. person that is treated as owning less than 10% of the total value of AHL would be a 10% U.S. Shareholder of any of the Non-U.S. Companies. However, because the relevant attribution rules are complex and there is no definitive legal authority on whether the voting provisions included in AHL’s organizational documents are effective for purposes of the CFC provisions, there can be no assurance that this will be the case. Further, our ability to obtain information that would permit us to enforce the limitation described above may be limited. We will take reasonable steps to obtain such information, but there can be no assurance that such steps will be adequate or that we will be successful in this regard. Accordingly, we may not be able to fully enforce the limitation described above.

U.S. persons who own depositary shares representing an interest in our preferred stock or own our Class A common shares 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 depositary shares representing an interest in our preferred stock or owns our Class A common shares 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 will be treated as CFCs for this purpose based on the current and expected ownership of our shares.

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.

Athene and Apollo have considerable overlap in ownership. If it is determined that Apollo “controls” us or the same persons “control” both us and Apollo through owning (or being treated as owning) more than 50% of the vote or value of Athene and Apollo, substantially all of the income of the Non-U.S. Companies that are engaged in reinsurance might constitute RPII. This would trigger the adverse RPII consequences described above to all U.S. persons that hold our depositary shares representing an interest in our preferred stock or hold our Class A common shares directly or indirectly through non-U.S. entities and would have a material adverse effect on the value of their investment in the depositary shares representing an interest in our preferred stock or their investment in our Class A common shares.

Existing voting restrictions set forth in AHL's bye-laws are generally intended to prevent a person who owns (or is treated as owning) shares in Apollo from owning (or being treated as owning) any of the voting power of our Class A common shares, thus preventing persons who own (or are treated as owning) both AHL and Apollo from owning (or being treated as owning) more than 50% of the voting power of our stock. However, these restrictions do not prevent members of the Apollo Group from retaining the right to vote on newly acquired Class A common shares, should they choose to do so, nor do they prevent persons who own (or are treated as owning) both AHL and Apollo from owning (or being treated as owning) more than 50% of the value of our stock. AHL's bye-laws also generally provide that no person (nor certain direct or indirect beneficial owners or related persons to such person) who owns our shares, other than a member of the Apollo Group, may acquire any shares of Apollo 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 AHL's stock. Any holder of our shares that violates this provision may be required, at the board's discretion, to sell its shares or take any other reasonable action that the board deems necessary.

Because of the restrictions described above, among other factors, we believe it is likely that one or more exceptions under the RPII rules will apply such that U.S. persons will not be required to include any RPII in their gross income with respect to the Non-U.S. Companies. However, there can be no assurance that this will be the case. Further, our ability to obtain information that would permit us to enforce the restrictions described above may be limited. We will take reasonable steps to obtain such information, but there can be no assurance that such steps will be adequate or that we will be successful in this regard. Accordingly, we may not be able to fully enforce these restrictions.

U.S. persons who dispose of depositary shares representing an interest in our preferred stock or dispose of our Class A common shares may be required to treat any gain as ordinary income for U.S. federal income tax purposes and comply with other specified reporting requirements.

If a U.S. person disposes of shares in a non-U.S. corporation that is an insurance company that had RPII and the 25% threshold described above is met at any time when the U.S. person owned any shares in the corporation 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 that the U.S. person owned the shares (possibly whether or not those earnings and profits are attributable to RPII). In addition, the shareholder will be required to comply with specified reporting requirements, regardless of the amount of shares owned. We believe that these rules should not apply to a disposition of depositary shares representing an interest in our preferred stock or a disposition of our Class A common shares because AHL is not itself directly engaged in the insurance business. We cannot assure you, however, that the IRS will not successfully assert that these rules apply to a disposition of depositary shares representing an interest in our preferred stock or a disposition of our Class A common shares.

U.S. tax-exempt organizations that own depositary shares representing an interest in our preferred stock or own our Class A common shares may recognize unrelated business taxable income.

A U.S. tax-exempt organization that directly or indirectly owns depositary shares representing an interest in our preferred stock or owns our Class A common shares generally will recognize unrelated business taxable income and be subject to additional U.S. tax filing obligations to the extent such tax-exempt organization is required to take into account any of our insurance income or RPII pursuant to the CFC and RPII rules described above. U.S. tax-exempt organizations should consult their own tax advisors regarding the risk of recognizing unrelated business taxable income as a result of the ownership of depositary shares representing an interest in our preferred stock or ownership of our Class A common shares.

U.S. persons who own depositary shares representing an interest in our preferred stock or own our Class A common shares may be subject to adverse tax consequences if AHL is considered a passive foreign investment company for U.S. federal income tax purposes.

If AHL is considered a passive foreign investment company for U.S. federal income tax purposes (PFIC), a U.S. person who directly or, in certain cases, indirectly owns depositary shares representing an interest in our preferred stock or owns our Class A common shares could be subject to adverse tax consequences, including a greater tax liability than might otherwise apply, an interest charge on certain taxes that are deemed deferred as a result of AHL's non-U.S. status and additional U.S. tax filing obligations, regardless of the number of shares owned.

We currently do not expect that AHL will be a PFIC in the current taxable year or the foreseeable future because AHL, through its Non-U.S. Companies that are insurance enterprises (Non-U.S. Insurance Companies), intends to qualify for the "active insurance" exception to PFIC treatment. This exception was amended as part of the Tax Act, and we believe that we qualify for the exception as amended. However, there is significant uncertainty regarding how the exception will be interpreted. The IRS recently proposed regulations providing guidance on the amended exception. The proposed regulations are not effective until adopted in final form.

Under the Internal Revenue Code and the proposed regulations, the active insurance exception is available only if a foreign insurance company is considered to be engaged in the "active conduct" of an insurance business. The proposed regulations state that whether a company is engaged in the "active conduct" of an insurance business is a facts and circumstances test, but then introduce a "bright line" rule providing that the "active conduct" requirement is met if, and only if, the insurance company's "active conduct percentage" is at least 50%. In general, a company's active conduct percentage is determined by dividing the company's aggregate expenses for certain insurance-related services of its officers and employees (and the officers and employees of certain affiliates) by the company's aggregate expenses for such insurance-related services (including those paid to unaffiliated persons). The precise scope of expenses that should be taken into account in calculating the active conduct percentage is unclear.

Our Non-U.S. Insurance Companies generally pay fees to unaffiliated service providers, including affiliates of Apollo, for investment management and other services. Including such fees in the calculation would have the effect of reducing their active conduct percentages. Due to uncertainty in the scope of expenses that should be taken into account, complexity in tracking and allocating expenses, and variations in expenses from year to year, among other uncertainties, no assurances can be provided that the active conduct percentages of our Non-U.S. Insurance Companies will be at least 50% in any given year. Accordingly, if the proposed regulations were finalized in their proposed form, depending on which expenses are included in the fraction, there is risk that one or more of our Non-U.S. Insurance Companies would be considered a PFIC in one or more taxable years, in which case AHL may also be a PFIC in such taxable years.

The IRS has requested comments on several aspects of the proposed regulations. It is uncertain when the proposed regulations will be finalized, and whether the provisions of any final or temporary regulations will vary from the proposed regulations. As a result, we cannot assure you that AHL will not be treated as a PFIC. If AHL is treated as a PFIC, the adverse tax consequences described above generally would also apply with respect to a U.S. person's indirect ownership interest in any PFICs in which AHL directly or, in certain cases, indirectly, owns an interest, including ALRe or ACRA (if they are PFICs).

Changes in U.S. tax law might adversely affect us or our shareholders, including holders of the depositary shares representing an interest in our preferred stock or holders of our Class A common shares.

The tax treatment of non-U.S. companies and their U.S. and non-U.S. insurance subsidiaries may be the subject of further tax legislation. No prediction can be made as to whether any particular proposed legislation will be enacted or, if enacted, what the specific provisions or the effective date of any such legislation would be, or whether it would have any effect on us. As such, we cannot assure you that future legislative, administrative or judicial developments will not result in an increase in the amount of U.S. tax payable by us or by an investor in depositary shares representing an interest in our preferred stock or an investor in our Class A common shares or reduce the attractiveness of our products. If any such developments occur, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

Changes in U.S. tax law might adversely affect demand for our products.

Many of the products that we sell and reinsure benefit from one or more forms of tax-favored status under current U.S. federal and state income tax regimes. For example, we sell and reinsure annuity contracts that allow the policyholders to defer the recognition of taxable income earned within the contract. Future changes in U.S. federal or state tax law, could reduce or eliminate the attractiveness of such products, which could affect the sale of our products or increase the expected lapse rate with respect to products that have already been sold. Decreases in product sales or increases in lapse rates, in either case, brought about by changes in U.S. tax law, may result in a decrease in net invested assets and therefore investment income and may have a material and adverse effect on our business, financial position, results of operations and cash flows.

There is U.S. income tax risk associated with reinsurance between U.S. insurance companies and their Bermuda affiliates.

If a reinsurance agreement is entered into among related parties, the IRS is permitted to reallocate or recharacterize income, deductions or certain other items, and to make any other adjustment, to reflect the proper amount, source or character of the taxable income of each of the parties. If the IRS were to successfully challenge our reinsurance arrangements, our financial condition, results of operations and cash flows could be adversely affected.

We may become subject to U.S. withholding tax under certain U.S. tax provisions commonly known as FATCA.

Certain U.S. tax provisions commonly known as FATCA impose a 30% withholding tax on certain payments of U.S. source income to certain "foreign financial institutions" and "non-financial foreign entities." The withholding tax may also apply to certain "foreign passthru payments" made by foreign financial institutions at a future date. The U.S. government has signed an intergovernmental agreement to facilitate the implementation of FATCA with the government of Bermuda (Bermuda IGA). The Non-U.S. Companies intend to comply with the obligations imposed on them under FATCA and the Bermuda IGA, as applicable, to avoid being subject to withholding under FATCA on payments made to them or penalties. However, no assurance can be provided in this regard. We may become subject to withholding tax or penalties if we are unable to comply with FATCA.

If AHL is treated as engaged in a U.S. trade or business in any taxable year, all or a portion of the dividends on our preferred stock or our Class A common shares may be treated as U.S. source income and may be subject to withholding and information reporting under FATCA unless a shareholder (and any intermediaries through which the shareholder holds its shares) establishes an exemption from such withholding and information reporting. As discussed above, we have historically intended to limit our U.S. activities so that AHL is not considered to be engaged in a U.S. trade or business. 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 AHL to conduct its business differently. Furthermore, no definitive standards are provided by the Internal Revenue Code, U.S. Treasury regulations or court decisions regarding when a foreign corporation is engaged in the conduct of a U.S. trade or business. Because the law is unclear, and the determination is highly factual and must be made annually, there is no assurance that the IRS will not contend that AHL is engaged in a U.S. trade or business.

We are subject to the risk that Bermuda tax laws may change and that we may become subject to new Bermuda taxes following the expiration of a current exemption after 2035.

The Bermuda Minister of Finance, under the Exempted Undertakings Tax Protection Act 1966 of Bermuda, as amended, has given us an assurance that if any legislation is enacted in Bermuda that would impose tax computed on profits or income, or computed on any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance tax, then the imposition of any such tax will not be applicable to us or any of our operations, shares, debentures or other obligations until March 31, 2035, except insofar as such tax applies to persons ordinarily resident in Bermuda or to any taxes payable by us in respect of real property owned or leased by us in Bermuda. Given the limited duration of the Bermuda Minister of Finance's assurance, we cannot assure you that we will not be subject to any Bermuda tax after March 31, 2035.

The impact of the Organisation for Economic Co-operation and Development's recommendations on base erosion and profit shifting is uncertain and could impose adverse tax consequences on us.

In 2015, the Organisation for Economic Co-operation and Development (OECD) published final recommendations on base erosion and profit shifting (BEPS). These BEPS recommendations propose the development of rules directed at counteracting the effects of tax havens and preferential tax regimes in countries around the world.

Several of the areas of tax law on which the BEPS project has focused have led or will lead to changes in the domestic law of individual OECD jurisdictions. These changes include (amongst others) restrictions on interest and other deductions for tax purposes, the introduction of broad anti-hybrid regimes and reform of controlled foreign company rules. Changes are also expected to arise in the application of certain double tax treaties as a result of the implementation and adoption of the OECD's Multilateral Instrument, which may restrict our ability to rely on the terms of relevant double tax treaties in certain circumstances. Further, recent BEPS developments include proposals for new profit allocation and nexus rules and for rules to ensure that the profits of multinational enterprises are subject to a minimum rate of tax.

Changes of law in individual jurisdictions which may arise as a result of the BEPS project may ultimately increase the tax base of our subsidiaries in certain jurisdictions or our worldwide tax exposure. Those changes of law are also potentially relevant to our ability to efficiently fund and realize investments or repatriate income or capital gains from relevant jurisdictions, and could ultimately necessitate some restructuring of our subsidiaries or business operations. The changes of law resulting from the BEPS project also include revisions to the definition of a "permanent establishment" and the rules for attributing profit to a permanent establishment.

Other BEPS-related changes focus on the goal of ensuring that transfer pricing outcomes are in line with value creation. Changes to tax laws resulting from the BEPS project could increase their complexity and the burden and costs of compliance. Additionally, such changes could also result in significant modifications to existing transfer pricing rules and could potentially have an impact on our taxable profits in various jurisdictions.

Since 2017 (and in consequence of the BEPS project), some countries in which we do business, including Bermuda, have required certain multinational enterprises, including ours, to report detailed information regarding allocation of revenue, profit, and other information, on a country-by-country basis. The information we are required to report pursuant to this country-by-country reporting (as well as information we are required to report pursuant to certain other exchange of information regimes (for example, pursuant to the Common Reporting Standard)) could ultimately result in certain tax authorities having greater access to information enabling them to challenge our tax positions in a number of different areas - transfer pricing in particular.

Our operations may be affected by the introduction of EU mandatory disclosure rules under DAC 6.

The EU has introduced new mandatory disclosure rules for cross-border arrangements which satisfy certain hallmarks, as part of a new Directive widely referred to as "DAC 6". The scope of the arrangements and hallmarks which may trigger disclosure is very wide, and not limited to aggressive tax planning or indeed (for certain of the hallmarks) to arrangements which have any tax motive. Although first disclosures are not required until August 2020, the rules will apply retrospectively to any arrangements put in place or made available for implementation on or after June 25, 2018. The obligation to file disclosures under DAC 6 will fall on persons acting as intermediaries, which in many cases may require our advisors and other service providers to file disclosures relating to arrangements we are party to, in the first instance. Other intermediaries may have reporting obligations to the extent that they could be reasonably expected to know that they provided aid, assistance or advice with respect to an arrangement to which we are a party.

It is, however, likely that at least some relevant arrangements will need to be disclosed directly by us (whether because we are treated as the relevant intermediary for those purposes, or in certain circumstances because our advisors are exempt from disclosure under professional privilege rules). We intend to operate in compliance with DAC 6 mandatory disclosure rules. Achieving and maintaining compliance is likely to entail some cost to us, and any inadvertent failure to comply with our obligations may lead to fines and penalties, which would have an adverse effect on our results of operations.

Risks Relating to Investment in Our Class A Common Shares

The interest of the Apollo Group, which currently controls 45% of, and is expected to continue to control a significant portion of, the total voting power of AHL and holds a number of the seats on our board of directors, may conflict with that of other shareholders and could make it more difficult for you and other shareholders to influence significant corporate decisions.

The Apollo Group currently controls 45% of, and is expected to continue to control a significant portion of, the total voting power of AHL. As a result, the Apollo Group could exercise significant influence over all matters requiring shareholder approval for the foreseeable future, including approval of significant corporate transactions, appointment of members of our management, election of directors, approval of the termination of our IMAs and determination of our corporate policies, which may reduce the market price of our common shares. Until such time that we have converted to a single class common share structure, either pursuant to the Share Exchange or otherwise, even if the Apollo Group reduces its beneficial ownership below its current holdings or we raise additional equity from investors other than members of the Apollo Group, because of its control over 45% of our aggregate voting power for so long as any member of the Apollo Group owns at least one Class B common share, the Apollo Group will continue to be able to assert significant influence over our board of directors and certain corporate actions.

After giving effect to the Share Exchange and other contemplated transactions (including the exercise of Apollo's contingent right to purchase additional shares), it is expected that Apollo, its affiliates and certain of its employees and consultants will beneficially own approximately 35% of the Class A common shares of AHL, in the aggregate. In addition, as part of the Share Exchange and related transactions, we expect to enter into a shareholders agreement with relevant members of the Apollo Group which will provide for, among other things, such members having the right to nominate a number of directors to the board of directors on a proportionate basis to their beneficial ownership of Class A common shares (including any Class A common shares to which a valid proxy has been granted to affiliates of Apollo under a voting agreement).

The interests of our existing shareholders, particularly members of the Apollo Group, may conflict with the interests of our other shareholders. Actions that members of the Apollo Group take as shareholders may not be favorable to our other shareholders. For example, the concentration of voting power held by the Apollo Group, the significant representation on our board of directors by individuals who are employees of the Apollo Group, or the limitations on our ability to terminate any IMA with Apollo could delay, defer or prevent a change of control of us or impede a merger, takeover or other business combination which another shareholder may otherwise view favorably. Members of the Apollo Group may, in their role as shareholders, vote in favor of a merger, takeover or other business combination transaction which our other shareholders might not consider in their best interests, including those transactions in which the Apollo Group may have an interest. In addition, as long as a business combination transaction were deemed to be in our best interests, our current charter and bye-laws would not prevent us from entering into a business combination transaction that provided for the payment of different consideration to holders of the Class B common shares, which are held by the Apollo Group or its affiliates, than to the Class A common shares. As part of the Share Exchange and related transactions, we are proposing certain amendments to our bye-laws, including to eliminate our multi-class common share structure.

Our conflicts committee and our disinterested directors analyze certain of these conflicts to protect against potential harm resulting from conflicts of interest in connection with transactions that we have entered into or will enter into with Apollo or its affiliates. Specifically, our bye-laws require that the conflicts committee (in accordance with its charter and procedures) approve certain material transactions by and between us and Apollo or its affiliates, including entering into material agreements or the imposition of any new fee or increase in the rate at which fees are charged to us, subject to certain exceptions. See *Item 13. Certain Relationships and Related Transactions, and Director Independence*. These conflicts provisions will not, by themselves, prohibit transactions with Apollo or its affiliates. In addition, our conflicts committee may exclusively rely on information provided by Apollo, including with respect to fees charged by Apollo or its affiliates, and with respect to the historical performance or fees of unrelated service providers used for comparison purposes, and may not independently verify the information so provided.

Apollo charges us management fees based on the composition and value of our assets. Substantially all of our net invested assets are managed by Apollo. Our investment policies permit Apollo to invest in securities of issuers with which it is affiliated, including funds managed by Apollo. Apollo may make such investments at its discretion, subject only to the approval of our conflicts committee in certain cases and/or certain regulatory approvals. Accordingly, Apollo may have a conflict of interest in managing our investments, which could increase amounts payable by us for asset management services or cause us to receive a lower return on our investments than if our investment portfolio was managed by another party. Asset management fees are paid based on the amount of our net invested assets regardless of the results of our operations. Therefore, Apollo could be incentivized to exercise its influence to cause us to increase our net invested assets, which may have an adverse impact on our financial condition, results of operations and cash flows.

We have made investments in collective investment vehicles managed by Apollo affiliates, including seed investments in new investment vehicles or investment strategies offered by Apollo which have limited track records, as well as junior and subordinated tranches of structured investment vehicles which may assist Apollo in meeting certain regulatory requirements applicable to Apollo as the sponsor of such vehicles. Such Apollo affiliates may charge us or such vehicles management or other fees, that independently, or when taken together with other fees charged by Apollo, may not be the lowest fee available for similar investment management services offered by unrelated managers. In addition, it is possible that such unrelated managers may perform better than Apollo. Apollo is not obligated to devote any specific amount of time to our affairs, or to the funds in which we are invested and our bye-laws impose restrictions on our right to terminate any IMA or sub-advisory arrangement. Affiliates of Apollo manage and expect to continue to manage other client accounts, some of which have objectives similar to ours, including collective investment vehicles managed by Apollo and in which Apollo may have an equity interest. We will compete with other Apollo clients not only in terms of time spent on management of our portfolio, but also for allocation of assets that do not have significant supply. In addition, there may be different Apollo investment teams investing in the same strategies for different clients, including us. As a result, we may compete with other Apollo clients for the same investment opportunities, potentially disadvantaging us. Apollo may also manage accounts whose asset management fee schedules, investment objectives and policies differ from ours, which may cause Apollo to allocate securities in a manner that may have an adverse effect on our ability to source appropriate assets and meet our strategic objectives.

Under the Seventh Amended and Restated Fee Agreement, dated as of June 10, 2019, between us and AAM (Fee Agreement), Apollo receives higher sub-allocation fees for investing in asset classes with higher alpha generating abilities. There is no assurance that higher returns will be achieved by investing in these asset classes. Accordingly, Apollo is incentivized to increase the amount of investments subject to higher sub-allocation fees, which may result in greater risk to the returns in our investment portfolio. While we believe that we and Apollo have each implemented appropriate risk governance regarding asset allocation, it is possible that such incentives could result in increased holdings of assets with higher alpha generating abilities, and if such investments fail to perform, it could have an adverse impact on our investment results.

From time to time, Apollo may acquire investments on our behalf which are senior or junior to other instruments of the same issuer that are held by, or acquired for, another Apollo client (for example, we may acquire junior debt while another Apollo client may acquire senior debt). In the event such an issuer enters bankruptcy or becomes otherwise insolvent, the client holding securities which are senior in preference may have the right to aggressively pursue the issuer's assets to fully satisfy the issuer's indebtedness to the client, and the client holding the investment which is junior in the capital structure may not have access to sufficient assets of the issuer to completely satisfy its claim against the issuer and may suffer a loss. It is our understanding that Apollo has adopted procedures that are designed to enable it to address such conflicts and to ensure that clients are treated fairly and equitably in these situations. However, given Apollo's fiduciary obligations to the other client, Apollo may be unable to manage our investment in the same manner as would have been possible without the conflict of interest. In such event, we may receive a lower return on such investment than if another Apollo client was not in a different part of the capital structure of the issuer.

Apollo and its affiliates have diverse and expansive private equity, credit and real estate investment platforms, investing in numerous companies across many industries. If Apollo acquires or forms a company with a business strategy competing with ours, additional conflicts may arise between us and Apollo or between us and such company in executing our plans, including with respect to the allocation of investments or the ability to execute on corporate opportunities. Our bye-laws provide that Apollo and its members and affiliates (including certain of our directors) generally have no duty to refrain from engaging, directly or indirectly, in the same or similar business activities or lines of business that we do.

Apollo and its affiliates regularly obtain material non-public information regarding various potential acquisition or trading targets. When Apollo and its affiliates obtain material non-public information regarding a potential acquisition or trading target, Apollo becomes restricted from trading in such acquisition or trading target's outstanding securities. Some of such securities may be potential investment opportunities for us, or may be owned by us and be potential disposition opportunities. The inability of Apollo to purchase or sell such investments on our behalf as a result of these restrictions may result in us acquiring investments that may otherwise underperform the restricted investments that Apollo would have acquired, or incurring losses on investments that Apollo would have sold, on our behalf, had such restrictions not been in place.

James R. Belardi, our Chief Executive Officer, also serves as Chief Executive Officer of ISG and receives compensation from ISG for services he provides. 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. See *Note 14 – Related Parties – Apollo – Current fee structure* to the consolidated financial statements for additional information regarding the sub-allocation fees. Under this arrangement, it is expected that Mr. Belardi would retain the Interest only during employment; and if Mr. Belardi remains employed with ISG through December 31, 2023, then following his employment termination, he would be eligible to receive a one-time payment equal to a multiple of the annual amount historically earned through the Interest. Accordingly, Mr. Belardi's involvement as a member of our board of directors and management team and as an officer and director of ISG may lead to a conflict of interest. Furthermore, certain members of our board of directors also serve on the board of directors of ISG or are employees of Apollo or its affiliates, which could also lead to potential conflicts of interest. See *Item 13. Certain Relationships and Related Transactions, and Director Independence*.

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 prohibit holders of our Class A common shares and certain other classes of our common shares (other than those owned by the Apollo Group) from having more than 9.9% of the total voting power of our common shares. Subject to certain exceptions determined by our board on the basis set forth in our bye-laws, the votes attributable to a holder of Class A common shares above 9.9% of the total voting power of our common shares are redistributed to other holders of Class A common shares pro rata based on the then current voting power of each holder. Such adjustments are likely to result in a shareholder having voting rights in excess of its pro rata share of the voting power of our Class A common shares. Therefore, a shareholder's voting rights may increase above 5% of the aggregate voting power of the outstanding 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. Additionally, in connection with the Share Exchange, we have proposed certain amendments to our bye-laws, including to the voting cutback provisions. In addition, our board 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.

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.

Our bye-laws contain provisions that impose restrictions on certain Class A common shares in order to reduce the likelihood that U.S. persons that directly or indirectly own our common shares will experience adverse tax consequences attributable to RPII. These provisions could cause a holder to lose the right to vote its Class A common shares if the holder or one of its affiliates owns (or is treated as owning) any equity interests (or instruments treated as equity interests) in Apollo or AAA, if the holder or one of its affiliates owns (or is treated as owning) any of our Class B common shares or if the holder or one of its affiliates is a member of the Apollo Group. These restrictions do not affect the transferability of Class A common shares and do not apply unless the holder or one of its affiliates meets one of these conditions.

Holders of our shares may have difficulty effecting service of process on us or enforcing judgments against us in the United States.

AHL is incorporated pursuant to the laws of Bermuda and is domiciled in Bermuda. In addition, certain of our directors and officers reside outside the United States, and a substantial portion of our assets are located in jurisdictions outside the United States. As such, we have been advised that there is doubt as to whether:

- a holder of our shares would be able to enforce, in the courts of Bermuda, judgments of U.S. courts against us or against persons who reside in Bermuda based upon the civil liability provisions of the U.S. federal securities laws; or
- a holder of our shares would be able to bring an original action in the Bermuda courts to enforce liabilities against us or our directors and officers who reside outside the United States based solely upon U.S. federal securities laws.

Further, we have been advised that there is no treaty in effect between the United States and Bermuda providing for the enforcement of judgments of U.S. courts, and there are grounds upon which Bermuda courts may not enforce judgments of U.S. courts. Because judgments of U.S. courts are not automatically enforceable in Bermuda, it may be difficult for you to recover against us based upon such judgments. Additionally, we have been advised that the United States and Bermuda do not currently have a treaty providing for reciprocal recognition and enforcement of judgments in civil and commercial matters. A Bermuda court may, however, impose civil liability on us or our directors or officers in a suit brought in the Supreme Court of Bermuda provided that the facts alleged constitute or give rise to a cause of action under Bermuda law. Certain remedies available under the laws of U.S. jurisdictions, including certain remedies under the U.S. federal securities laws, would not be allowed in Bermuda courts to the extent that they are contrary to public policy.

Our choice of forum provisions in our bye-laws may limit your ability to bring suits against us or our directors and officers.

Our bye-laws currently provide that if any dispute arises concerning the Companies Act or out of or in connection with our bye-laws, including any question regarding the existence and scope of any bye-law and/or whether there has been a breach of the Companies Act or our bye-laws by an officer or director (whether or not such a claim is brought in the name of a shareholder or in the name of the Company), any such dispute shall be subject to the exclusive jurisdiction of the Supreme Court of Bermuda. This choice of forum provision may limit a shareholder's ability to bring a claim in a judicial forum that the shareholder believes is favorable for disputes with us or our directors or officers, which may discourage lawsuits against us and our directors and officers. Alternatively, if a court were to find this provision of our bye-laws inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition, results of operations and cash flows.

U.S. persons who own our shares may have more difficulty in protecting their interests than U.S. persons who are shareholders of a U.S. corporation.

The Companies Act, which applies to AHL, differs in certain material respects from laws generally applicable to U.S. corporations and their shareholders. Set forth below is a summary of certain significant provisions of the Companies Act and our bye-laws which differ in certain respects from provisions of Delaware corporate law. Because the following statements are summaries, they do not discuss all aspects of Bermuda law that may be relevant to us and our shareholders.

Interested Directors

Bermuda law provides that we cannot void any transaction we enter into in which a director has an interest, nor can such director be liable to us for any profit realized pursuant to such transaction, provided the nature of the interest is disclosed at the first opportunity at a meeting of directors, or in writing, to the directors. Under Delaware law such transaction would not be voidable if:

- the material facts as to such interested director's relationship or interests were disclosed or were known to the board of directors and the board of directors had in good faith authorized the transaction by the affirmative vote of a majority of the disinterested directors;
- such material facts were disclosed or were known to the shareholders entitled to vote on such transaction and the transaction was specifically approved in good faith by vote of the majority of shares entitled to vote thereon; or
- the transaction was fair to the corporation as of the time it was authorized, approved or ratified.

Under Delaware law, the interested director could be held liable for a transaction in which the director derived an improper personal benefit.

Shareholders' Suits

The rights of shareholders under Bermuda law are not as extensive as the rights of shareholders in many U.S. jurisdictions. Class actions and derivative actions are generally not available to shareholders under the laws of Bermuda. However, the Bermuda courts ordinarily would be expected to follow English case law precedent, which would permit a shareholder to commence an action in the name of the company to remedy a wrong done to the company where an act is alleged to be beyond the corporate power of the company, is illegal or would result in the violation of our memorandum of association or bye-laws. Furthermore, a Bermuda court would consider acts that are alleged to constitute a fraud against the minority shareholders or acts requiring the approval of a greater percentage of our shareholders than actually approved it. The winning party in such an action generally would be able to recover a portion of attorneys' fees incurred in connection with such action. Class actions and derivative actions generally are available to shareholders under Delaware law for, among other things, breach of fiduciary duty, corporate waste and actions not taken in accordance with applicable law. In such actions, the court has discretion to permit the winning party to recover attorneys' fees incurred in connection with such action.

Indemnification of Directors

We have entered into indemnification agreements with our directors and officers which provide that we will indemnify our directors and officers or any person appointed to any committee by the board of directors acting in their capacity as such for any loss arising or liability attaching to them by virtue of any rule of law in respect of any negligence, default, breach of duty or breach of trust of which such person may be guilty in relation to us other than in respect of his own fraud or dishonesty. We are also required to indemnify our directors and officers in any proceeding in which they are successful. The indemnification agreements are limited to those payments that are lawful under Bermuda law.

Furthermore, pursuant to our bye-laws, our shareholders have agreed to waive any claim or right of action such shareholder may have, whether individually or by or in right of AHL, against any director or officer of AHL on account of any action taken by such director or officer, or the failure of such director or officer to take any action in the performance of his or her duties with or for AHL or any subsidiary of AHL; provided that such waiver does not extend to any matter in respect of any fraud or dishonesty which may attach to such director or officer.

Item 1A. Risk Factors

AHL is a holding company with limited operations of its own. As a consequence, AHL's ability to pay dividends on its common shares and to make timely payments on its debt obligations will depend on the ability of its subsidiaries to make distributions or other payments to it, which may be restricted by law.

AHL is a holding company with limited business operations of its own. AHL's primary subsidiaries are insurance and reinsurance companies that own substantially all of our assets and conduct substantially all of our operations. Accordingly, AHL's payment of dividends and ability to make timely payments on its debt obligations is dependent, to a significant extent, on the generation of cash flow by its subsidiaries and their ability to make such cash or other assets available to it, by dividend or otherwise. Dividends or distributions that may be paid by AHL's insurance subsidiaries are limited or restricted by applicable insurance or other laws that are based in part on the prior year's statutory income and surplus, or other sources. See *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations–Liquidity–Holding Company Liquidity*.

AHL's subsidiaries may not be able to, or may not be permitted to, make distributions to enable AHL to meet its obligations and pay dividends. These limitations on AHL's U.S. subsidiaries' abilities to pay dividends to AHL via its Bermuda subsidiaries may negatively impact AHL's financial condition, results of operations and cash flows. If AHL is not able to receive sufficient distributions from its subsidiaries, AHL may be required to raise funds through the incurrence of indebtedness, issuance of equity or sale of assets. AHL's ability to access funds through such methods is subject to market conditions and there can be no assurance that AHL would be able to raise funds on favorable terms or at all.

Each subsidiary is a distinct legal entity and legal and contractual restrictions may also limit AHL's ability to obtain cash from its subsidiaries. In addition to the specific restrictions described above, AHL's subsidiaries, as members of its insurance holding company system, are subject to various statutory and regulatory restrictions on their ability to pay dividends to AHL, as further described in *Item 1. Business–Regulation–United States–Insurance Holding Company Regulation*.

Dividends by AHL are also subject to restrictions included within the Credit Facility and may be subject to restrictions included in any indebtedness or credit agreement that AHL enters into in the future. AHL does not currently anticipate paying any regular cash dividends on its common shares. Any decision to declare and pay dividends in the future will be made at the discretion of AHL's board of directors and will depend on, among other things, AHL's results of operations, financial condition, cash requirements, excess capital position, alternative uses of capital, contractual restrictions and other factors that AHL's board of directors may deem relevant. Therefore, any return on investment in AHL's common stock may be solely dependent upon the appreciation of the price of AHL's common stock on the open market, which may not occur.

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 December 31, 2019, 7.0 million common shares are reserved for future issuances under our ESPP and equity incentive plans, in the aggregate.

Furthermore, Apollo has the right to require, and subject to the completion of the Share Exchange and the expiration or waiver of any lock-up agreements, will have the right to require, with respect to the shares received in connection therewith, us to register Class A common shares for resale in some circumstances pursuant to the registration rights agreements we have entered or will enter 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.

Our Chief Executive Officer and President entered into a voting agreement pursuant to which each of them appointed an affiliate of Apollo as his proxy and attorney-in-fact to vote all of his Class A common shares at any meeting of our shareholders following the closing of the Share Exchange.

In connection with the Share Exchange and related transactions, an affiliate of Apollo (AMH), James Belardi, our Chief Executive Officer, and William Wheeler, our President, entered into a voting agreement, pursuant to which each such shareholder irrevocably appointed AMH as his proxy and attorney-in-fact to vote all of such shareholder's Class A common shares at any meeting of our shareholders occurring following the closing of the Share Exchange and in connection with any written resolution of our shareholders following the closing of the transaction. This means that, subject to certain exceptions, all of the Class A common shares beneficially owned by Messrs. Belardi and Wheeler and entitled to vote (expected to constitute a small amount of the voting power of AHL immediately following the closing of the transaction) will be voted by AMH at any meeting of our shareholders following the closing of the transaction and in connection with any written resolution of our shareholders following the closing of the transaction.

Item 1A. Risk Factors

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We own our headquarters for U.S. operations, which is located in West Des Moines, IA and we lease our head office for Bermuda operations, which is located in Pembroke, Bermuda. Our Retirement Services segment includes our Iowa and Bermuda offices. We believe that for the foreseeable future our West Des Moines, Bermuda and other properties will be sufficient for us to conduct our current operations.

Item 3. 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 proceedings or claims 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 such agencies 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 15 – Commitments and Contingencies – Litigation, Claims and Assessments* to the consolidated financial statements.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our Class A common shares trade on the NYSE under the symbol "ATH". There is no established public trading market for our Class B and Class M common shares and no bid information is available for such shares.

Shareholders

As of January 31, 2020, there were 143,296,155 Class A common shares outstanding and held of record by 218 shareholders, 25,381,321 Class B common shares outstanding and held of record by 13 shareholders, 3,263,890 Class M-1 common shares outstanding and held of record by five shareholders, 841,011 Class M-2 common shares outstanding and held of record by two shareholders, 1,000,000 Class M-3 common shares are outstanding and held of record by two shareholders, and 3,948,905 Class M-4 common shares outstanding and held of record by 86 shareholders.

Dividends

We do not currently pay dividends on any of our common shares and we currently intend to retain all available funds and any future earnings for use in the operation of our business. We may, however, pay cash dividends on our common shares in the future. Any future determination to pay dividends will be made at the discretion of our board of directors and will depend upon many factors, including our financial condition, earnings, legal and regulatory requirements, restrictions in our debt agreements and other factors our board of directors deems relevant. We currently have preferred stock on which we intend to pay dividends at the rate specified in the applicable certificate of designation, subject to declaration by our board of directors. See *Note 10 – Equity* to the consolidated financial statements for further information.

Securities Authorized for Issuance under Equity Compensation Plans

See *Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters–Share Incentive Plan Information* for information regarding our equity compensation plans.

Recent Sales of Unregistered Securities

Previously reported in the Current Report on Form 8-K filed with the SEC on October 28, 2019.

Issuer Purchases of Securities

Purchases of common stock made by or on behalf of us or our affiliates during the three months ended December 31, 2019 are set forth below:

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[1,2]	(d) Maximum number (or approximate dollar value) of shares that may yet be purchased under the plans or programs
October 1 – October 31, 2019	7,050,056	$ 40.15	7,050,056	$ 640,157,788
November 1 – November 30, 2019	14	$ 43.89	—	$ 640,157,788
December 1 – December 31, 2019	1,237	$ 46.96	—	$ 640,157,788

[1] *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] *On December 10, 2018, we announced that our board of directors had approved an authorization for the repurchase of up to $250 million of our Class A common shares (Previous Authorization). On May 7, 2019, we announced that our board of directors had approved an authorization for the repurchase of up to $350 million of our Class A common shares, inclusive of the remaining shares authorized for repurchase under the Previous Authorization. On June 10, 2019, we announced that our board of directors had approved an additional $120 million authorization for the repurchase our Class A common shares. 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. None of the authorizations have a definitive expiration date, but may be terminated at any time at the sole discretion of our board of directors. See Note 10 – Equity to the consolidated financial statements for more information.*

Purchases of depositary shares made by or on behalf of us or our affiliates during the period commencing with the inaugural offering of depositary shares on June 10, 2019 through December 31, 2019 are set forth below:

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]
June 10 – June 30, 2019	130,000	$ 25.00	—	$ —
July 1 – July 31, 2019	—	$ —	—	$ —
August 1 – August 31, 2019	—	$ —	—	$ —
September 1 – September 30, 2019	50,000	$ 25.00	—	$ —
October 1 – October 31, 2019	—	$ —	—	$ —
November 1 – November 30, 2019	—	$ —	—	$ —
December 1 – December 31, 2019	—	$ —	—	$ —

[1] *Purchases relate to purchases of depositary shares made by certain executive officers and directors in connection with the public offering of such depositary shares. James Belardi purchased 80,000 depositary shares, each representing a 1/1,000th interest in a 6.35 Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Share, Series A, par value $1.00 and liquidation preference $25,000 (Series A Depositary Shares) and 40,000 depositary shares, each representing a 1/1,000th interest in a 5.625% Fixed Rate Perpetual Non-Cumulative Preference Share, Series B, par value $1.00 and liquidation preference $25,000 (Series B Depositary Shares). Grant Kvalheim, an executive officer, purchased 40,000 Series A Depositary Shares. Marc Beilinson, member of our Board of Directors, purchased 10,000 Series A Depositary Shares and 10,000 Series B Depositary Shares.*

[2] *As of December 31, 2019, our Board of Directors had not authorized any purchases of depositary shares in connection with a publicly announced plan or program.*

Item 6. Selected Financial Data

The following tables set forth our selected historical consolidated financial data, which should be read in conjunction with *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations* and *Item 8. Financial Statements and Supplementary Data*. The information has been derived from our historical consolidated financial statements. Our historical results are not necessarily indicative of future results.

	Years ended December 31,				
(In millions, except percentages and per share data)	2019	2018[1,3]	2017	2016	2015[2]
Consolidated Statements of Income Data					
Total revenues	$ 16,258	$ 6,637	$ 8,788	$ 4,105	$ 2,618
Total benefits and expenses	13,956	5,462	7,324	3,393	2,023
Income before income taxes	2,302	1,175	1,464	712	595
Net income	2,185	1,053	1,358	773	595
Net income available to Athene Holding Ltd. common shareholders	2,136	1,053	1,358	773	579
Adjusted operating income available to common shareholders (a non-GAAP measure)	1,289	1,140	1,055	759	760
ROE	19.7%	12.1%	16.9%	12.6%	11.7%
Adjusted operating ROE (a non-GAAP measure)	14.1%	13.9%	15.1%	12.6%	16.2%
Earnings per share[4]					
Basic	$ 11.44	$ 5.34	$ 6.95	$ 4.14	$ 3.31
Diluted – Class A common shares	$ 11.41	$ 5.32	$ 6.91	$ 4.04	$ 3.30
Adjusted operating earnings per common share (a non-GAAP measure)	$ 6.97	$ 5.82	$ 5.39	$ 3.93	$ 4.34
Weighted average common shares outstanding					
Basic[4]	186.6	197.1	195.3	186.8	175.1
Diluted – Class A common shares[4]	154.3	161.1	111.0	53.5	41.3
Adjusted operating common shares (a non-GAAP measure)[5]	184.8	195.9	195.9	193.4	175.2
Consolidated Balance Sheets Data					
Investments, including related parties	$ 129,845	$ 107,632	$ 84,379	$ 72,433	$ 64,525
Investments of consolidated variable interest entities	705	709	859	901	1,565
Total assets	146,875	125,505	100,161	86,740	80,864
Interest sensitive contract liabilities	102,745	96,610	68,099	61,580	57,306
Future policy benefits	23,330	16,704	17,557	14,562	14,533
Long-term debt	992	991	—	—	—
Total liabilities	132,734	117,229	90,985	79,858	75,496
Total AHL shareholders' equity	13,391	8,276	9,176	6,881	5,367
Total adjusted common shareholders' equity (a non-GAAP measure)	9,445	8,823	7,566	6,452	5,589
Book value per common share	$ 76.21	$ 42.45	$ 46.60	$ 35.78	$ 28.84
Adjusted book value per common share (a non-GAAP measure)	$ 54.02	$ 45.59	$ 38.43	$ 32.85	$ 30.03
Common shares outstanding[6]	175.7	195.0	196.9	192.3	186.1
Adjusted operating common shares outstanding (a non-GAAP measure)[5]	174.9	193.5	196.9	196.4	186.1

[1] *During the year ended December 31, 2018, we entered into various agreements to reinsure blocks of fixed and fixed index annuities. See Note 6 – Reinsurance to the consolidated financial statements for additional information.*

[2] *Reflects the acquisition of our former subsidiary Athora on October 1, 2015.*

[3] *Reflects the deconsolidation of Athora effective January 1, 2018. See Note 1 – Business, Basis of Presentation and Significant Accounting Policies to the consolidated financial statements for additional information.*

[4] *Basic earnings per common share, including basic weighted average common shares outstanding, includes all classes eligible to participate in dividends for each period presented. Diluted earnings per share on Class A common shares, including diluted Class A weighted average common shares outstanding, includes the dilutive impacts, if any, of Class B common shares, Class M common shares and any other stock-based awards. See Note 11 – Earnings Per Share to the consolidated financial statements for additional information regarding basic and diluted earnings per common share.*

[5] *Represents Class A common shares outstanding or weighted average common shares outstanding assuming 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, Class M common shares and any other stock-based awards. For December 31, 2015, Class M common shares were not included due to issuance restrictions which were contingent upon our IPO.*

[6] *Represents common shares vested and outstanding for all classes eligible to participate in dividends for each period presented. See Note 11 – Earnings Per Share to the consolidated financial statements for additional information regarding classes eligible to participate in dividends as of each period.*

Item 6. Selected Financial Data

Non-GAAP Measures–In addition to our results presented in accordance with GAAP, we present certain non-GAAP measures we commonly use. 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. These measures should be considered supplementary to our results in accordance with GAAP and should not be viewed as a substitute for the GAAP measures. See *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations–Key Operating and Non-GAAP Measures* for additional discussions regarding non-GAAP measures.

The following are reconciliations of certain GAAP measures appearing in the preceding table, including net income available to AHL common shareholders, basic weighted average common shares outstanding – Class A, and basic earnings per common share – Class A, to their corresponding non-GAAP measures, including adjusted operating income available to common shareholders, weighted average common shares outstanding – adjusted operating, and adjusted operating earnings per common share, respectively:

	Years ended December 31,				
(In millions)	2019	2018	2017	2016	2015
Net income available to AHL common shareholders	$ 2,136	$ 1,053	$ 1,358	$ 773	$ 579
Non-operating adjustments					
Investment gains (losses), net of offsets	994	(274)	199	47	(56)
Change in fair values of derivatives and embedded derivatives – FIAs, net of offsets	(65)	242	230	67	(30)
Integration, restructuring and other non-operating expenses	(70)	(22)	(68)	(22)	(58)
Stock compensation expense	(12)	(11)	(33)	(82)	(67)
Income tax (expense) benefit – non-operating	—	(22)	(25)	4	30
Less: Total non-operating adjustments	847	(87)	303	14	(181)
Adjusted operating income available to common shareholders	$ 1,289	$ 1,140	$ 1,055	$ 759	$ 760

	Years ended December 31,				
(In millions)	2019	2018	2017	2016	2015
Basic weighted average common shares outstanding – Class A	153.9	160.5	107.7	52.1	41.2
Conversion of Class B common shares to Class A common shares	25.4	29.3	81.6	134.5	133.9
Conversion of Class M common shares to Class A common shares	5.1	5.6	6.1	6.6	—
Effect of other stock compensation plans	0.4	0.5	0.5	0.2	0.1
Weighted average common shares outstanding – adjusted operating	184.8	195.9	195.9	193.4	175.2

	Years ended December 31,				
	2019	2018	2017	2016	2015
Basic earnings per share – Class A common shares	$ 11.44	$ 5.34	$ 6.95	$ 4.14	$ 3.31
Non-operating adjustments					
Investment gains (losses), net of offsets	5.39	(1.40)	1.02	0.24	(0.33)
Change in fair values of derivatives and embedded derivatives – FIAs, net of offsets	(0.36)	1.24	1.17	0.35	(0.17)
Integration, restructuring and other non-operating expenses	(0.37)	(0.12)	(0.35)	(0.12)	(0.33)
Stock compensation expense	(0.07)	(0.05)	(0.17)	(0.42)	(0.38)
Income tax (expense) benefit – non-operating	—	(0.11)	(0.13)	0.02	0.17
Less: Total non-operating adjustments	4.59	(0.44)	1.54	0.07	(1.04)
Effect of items convertible to or settled in Class A common shares	(0.12)	(0.04)	0.02	0.14	0.01
Adjusted operating earnings per common share	$ 6.97	$ 5.82	$ 5.39	$ 3.93	$ 4.34

Item 6. Selected Financial Data

The following is a reconciliation of total AHL shareholders' equity to total adjusted AHL common shareholders' equity, which is used in calculating adjusted operating ROE and adjusted book value per common share:

	December 31,				
(In millions)	2019	2018	2017	2016	2015
Total AHL shareholders' equity	$ 13,391	$ 8,276	$ 9,176	$ 6,881	$ 5,367
Less: Preferred stock	1,172	—	—	—	—
Total AHL common shareholders' equity	12,219	8,276	9,176	6,881	5,367
Less: AOCI	2,281	(472)	1,449	366	(241)
Less: Accumulated change in fair value of reinsurance assets	493	(75)	161	63	19
Total adjusted AHL common shareholders' equity	$ 9,445	$ 8,823	$ 7,566	$ 6,452	$ 5,589

The following is a reconciliation of average AHL shareholders' equity to average adjusted AHL common shareholders' equity, which is used in calculating adjusted operating ROE:

	December 31,				
(In millions)	2019	2018	2017	2016	2015
Average AHL shareholders' equity	$ 10,834	$ 8,726	$ 8,029	$ 6,124	$ 4,959
Less: Average preferred stock	586	—	—	—	—
Less: Average AOCI	905	489	908	63	203
Less: Average accumulated change in fair value of reinsurance assets	209	43	112	41	58
Average adjusted AHL common shareholders' equity	$ 9,134	$ 8,194	$ 7,009	$ 6,020	$ 4,698

The following is a reconciliation of Class A common shares outstanding to its corresponding non-GAAP measure, adjusted operating common shares outstanding:

	December 31,				
(In millions)	2019	2018	2017	2016	2015
Class A common shares outstanding	142.8	162.2	142.2	77.0	50.1
Conversion of Class B common shares to Class A common shares	25.4	25.4	47.4	111.8	136.0
Conversion of Class M common shares to Class A common shares	5.5	4.9	6.4	6.8	—
Effect of other stock compensation plans	1.2	1.0	0.9	0.8	—
Adjusted operating common shares outstanding	174.9	193.5	196.9	196.4	186.1

The following is a reconciliation of book value per common share to its corresponding non-GAAP measure, adjusted book value per common share:

	December 31,				
	2019	2018	2017	2016	2015
Book value per common share	$ 76.21	$ 42.45	$ 46.60	$ 35.78	$ 28.84
Preferred stock	(6.67)	—	—	—	—
AOCI	(12.98)	2.42	(7.36)	(1.90)	1.29
Accumulated change in fair value of reinsurance assets	(2.80)	0.39	(0.82)	(0.33)	(0.10)
Effect of items convertible to or settled in Class A common shares	0.26	0.33	0.01	(0.70)	—
Adjusted book value per common share	$ 54.02	$ 45.59	$ 38.43	$ 32.85	$ 30.03

Item 7. 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 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with *Forward-Looking Statements, Item 1A. Risk Factors, Item 6. Selected Financial Data,* and *Item 8. Financial Statements and Supplementary Data* included within this report.

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 December 31, 2019, 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 9.5 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 and, prior to January 1, 2018, included our former German operations.

Our consolidated ROE for the year ended December 31, 2019 was 19.7% and our consolidated adjusted operating ROE was 14.1%. For the year ended December 31, 2019, in our Retirement Services segment, we generated an investment margin on deferred annuities of 2.46% and adjusted operating ROE of 17.3%. As of December 31, 2019, our deferred annuities had a weighted-average life of 8.9 years and made up a significant portion of our reserve liabilities.

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

	Years ended December 31,		
(In millions)	2019	2018	2017
Retail sales	$ 6,782	$ 7,542	$ 5,353
Flow reinsurance	3,950	2,423	875
Funding agreements	1,301	650	3,000
Pension risk transfer	6,042	2,581	2,253
Total organic deposits	18,075	13,196	11,481
Inorganic deposits	—	26,982	—
Gross deposits	18,075	40,178	11,481
Deposits attributable to ACRA noncontrolling interest	(544)	—	—
Net deposits	$ 17,531	$ 40,178	$ 11,481

Our organic channels, including retail, flow reinsurance and institutional products, generated deposits of $18.1 billion, $13.2 billion and $11.5 billion for the years ended December 31, 2019, 2018 and 2017, 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 $11.0 billion, $8.9 billion and $5.8 billion for the years ended December 31, 2019, 2018 and 2017, respectively. We believe that our improving 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 $6.8 billion, $7.5 billion and $5.4 billion for the years ended December 31, 2019, 2018 and 2017, respectively. The decrease in our retail channel was driven by rate decreases due to the depressed interest rate environment as well as a decline in sales in the overall annuity market. We aim to grow our retail channel by deepening our relationships with our approximately 50 IMOs; approximately 48,000 independent agents; and our growing network of 13 small and mid-sized banks and 90 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 improving credit profile and recent product launches. We believe this should support growth in sales over time 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. We have recently implemented a new technology platform for our retail channel to expand operational capabilities. Additionally, we are focused 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 long-term liabilities with attractive crediting rates. We generated deposits through our flow reinsurance channel of $4.0 billion, $2.4 billion and $875 million for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in our flow reinsurance channel over prior year was driven by the addition of new partners in the second half of 2018 and new product launches by our partners. We expect that our improving 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.

Within our institutional channel, we generated deposits of $7.3 billion, $3.2 billion and $5.3 billion for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in our institutional channel is driven by higher PRT deposits. We issued funding agreements in the aggregate principal amount of $1.3 billion, $650 million and $3.0 billion for the years ended December 31, 2019, 2018 and 2017, respectively. For the year ended December 31, 2019, we closed five PRT transactions, including our first UK PRT transaction for approximately $818 million, and issued group annuity contracts in the aggregate principal amount of $6.0 billion, compared to $2.6 billion for the year ended December 31, 2018. Since entering the PRT channel in 2017 through December 31, 2019, we have closed 16 deals involving more than 168,000 plan participants resulting in the issuance of group annuities and entry into UK PRT reinsurance arrangements in the aggregate principal amount of $10.9 billion. 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 and, in 2018, we generated $27.0 billion of deposits driven by two block reinsurance transactions. On June 1, 2018, we closed on the Voya reinsurance transaction pursuant to which we entered into coinsurance and modco agreements to reinsure a block of fixed and fixed indexed annuities providing $19.1 billion of deposits. On December 7, 2018, we entered into a modified coinsurance agreement with The Lincoln National Life Company (Lincoln), with an effective date of October 1, 2018, to reinsure an 80% quota share of fixed deferred and fixed indexed annuities providing $7.9 billion of deposits. 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 December 31, 2019, we estimate that we have $6.7 billion in capital available to deploy, consisting of approximately $2.0 billion in excess capital, $2.1 billion in untapped debt capacity (assuming a peer average adjusted debt to capitalization ratio of 25%) and $2.6 billion in uncalled capital at ACRA, subject, in the case of debt capacity, to favorable market conditions and general availability.

In order to support our growth strategies and capital deployment opportunities, we established ACRA as a long-duration, on-demand capital vehicle. On October 1, 2019, ADIP purchased 67% of the economic interests in ACRA for $575 million. ACRA is expected to participate in qualifying transactions and certain other transactions by drawing two-thirds of the required capital for such transactions from third-party investors. See *Item 1. Business – Capital* for further information on qualifying transactions. 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.

Deconsolidation Summary

On January 1, 2018, in connection with the closing of the Athora Offering, our equity interest in Athora was exchanged for common shares of Athora. See *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* to the consolidated financial statements for further details regarding the deconsolidation of our German operations. The deconsolidation of Athora decreased our total assets by $6.3 billion and our net invested assets by $6.0 billion. As of and after January 1, 2018, our interest in Athora is reflected as an alternative investment.

Strategic Transaction with Apollo

On October 27, 2019 we entered into a Transaction Agreement with the Apollo which is expected to close in the first quarter of 2020, subject to regulatory approval. Upon close of the transaction, Apollo will acquire an incremental stake in us for approximately $1.55 billion, in exchange for AOG units valued at approximately $1.2 billion, subject to changes in market price at close, and approximately $350 million of cash. Additionally, AHL will convert all classes of common shares to a single common share class, eliminating our current super-voting structure, which we expect will broaden our investor base over time. Upon closing of the Share Exchange, the AOG units will be reflected as an alternative investment and may present future volatility in our results of operations due to changes in the valuation of the AOG units. See *Note 14 – Related Parties* to the consolidated financial statements for further discussion.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Industry Trends and Competition

Market Conditions

Following three separate rate cuts in 2019, the U.S. Federal Reserve kept rates unchanged in its meeting on December 11, 2019, due to perceived easing of downside risk to the economy. While current economic fundamentals appear strong, uncertainty about future fiscal policy, changes in tax policy, the scope of potential deregulation, the imposition of tariffs or other barriers to international trade and levels of global trade, the future path of the Federal Reserve's quantitative tightening or easing, along with uncertainty about the Federal Reserve's ability to manage its normalization process and the impact on inflation and wage growth, may trigger continued volatility across financial markets, and specifically equity market volatility, which may adversely affect the hedging costs of our liability policy hedging program. Credit market volatility, which may widen credit spreads, generally benefits our investment purchases but may negatively affect the valuations of our in-force investment portfolio.

A volatile market environment may affect our ability to produce liability products that are profitable, have our desired risk profile, and are desirable to consumers. As a company with strong retirement, investment management and insurance capabilities, we expect that over the long term, market conditions resulting in higher Treasury yields and credit spreads will enhance the attractiveness of our portfolio of annuity products. 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 left the federal funds rate unchanged at the end of the year, following three rate cuts in 2019. The short-term rates on the yield curve have consequently declined, while the medium-to-long-term rates have experienced a marginal increase, resulting in a steepening of the yield curve. The yield curve is currently upward sloping, which has traditionally been seen as an indicator of economic optimism, after phases in 2019 when it was flat or inverted.

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. 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. Our investment portfolio includes $20.9 billion of floating rate investments, or 18% of our net invested assets as of December 31, 2019.

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 December 31, 2019, most of our products were fixed annuities with 22% of our FIAs at the minimum guarantees and 41% of our fixed rate annuities at the minimum crediting rates. As of December 31, 2019, minimum guarantees on all of our deferred annuities, including those with crediting rates already at their minimum guarantees, were, on average, 100 to 110 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 *Item 7A. Quantitative and Qualitative Disclosures About Market Risks*, which includes a discussion regarding interest rate and other significant risks and our strategies for managing these risks.

Discontinuation of LIBOR

The 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.

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. Currently, we are primarily focused on phase 1 of our plan. We have established function-specific working groups to identify and quantify our exposure to LIBOR. A separate working group exists for each of the following functions: actuarial, finance, derivatives/treasury, investment portfolio, legal and information technology. Each working group is tasked with evaluating the various contracts, transactions and arrangements within its functional area to identify those contracts, transactions and arrangements which involve LIBOR. We expect to complete phase 1 by March 31, 2020.

Thus far, we have identified contracts, other than those related to our product liabilities, with a notional value of approximately $25 billion tied to LIBOR, of which contracts with a notional value of approximately $20 billion are expected to extend beyond 2021. Such exposure primarily arises from our investment portfolio, which accounts for approximately 80% of our current exposure and approximately 84% of the exposure we expect will extend beyond 2021. In addition to the foregoing, we have identified product liabilities with a notional value of approximately $6.9 billion for which interest credited is computed on "excess return" indices (return of index in excess of LIBOR). We anticipate that many of these contracts will extend beyond 2021. We currently hold derivatives with a notional value of approximately $7.3 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 them 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.

Once phase 1 is completed, we expect to revisit the scope of our plan and to establish milestones based upon the nature and extent of our exposure to LIBOR. We will also conduct a more thorough analysis of the legal, accounting, tax and other risks associated with the exposure areas that we have identified. Thereafter, we will evaluate methods to mitigate the risk of the transition, including evaluating the adequacy of fallback provisions, if any, included in our existing contracts. Concurrent with phase 1 and throughout the execution of our plan, we will evaluate the new contracts into which we enter for exposure to LIBOR, and for those contracts with LIBOR exposure, we will negotiate adequate fallback provisions or negotiate for the inclusion of an alternative rate.

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. Completion of certain phases of our plan are contingent upon market developments and are therefore not fully within our control. 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 $109.1 billion for the nine months ended September 30, 2019, a 13.9% increase from the same time period in 2018. In the total fixed annuity market, for the nine months ended September 30, 2019 (the most recent period for which specific market share data is available), we were the 5th largest company based on sales of $5.6 billion, translating to a 5.2% market share. For the nine months ended September 30, 2018, we had sales of $5.5 billion, translating to a 5.8% market share.

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 $69.6 billion in sales for the year ended December 31, 2018. FIA sales grew $14.6 billion in the one year period from December 31, 2017 to December 31, 2018. According to LIMRA data, for the nine months ended September 30, 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 $5.0 billion, and our market share for the same period was 8.9%. For the nine months ended September 30, 2018, we were the 2nd largest provider of FIAs based on sales of $4.7 billion, translating to a 9.5% 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. See *Non-GAAP Measure Reconciliations* and *Item 6. Selected Financial Data - Non-GAAP Measures* for the appropriate reconciliations to the corresponding GAAP measures.

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income 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 available to common shareholders equals net income 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, impairments, and other investment gains and losses. Unrealized, impairments 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 net other-than-temporary impairment (OTTI) impacts 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 MVAs 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 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 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 available to AHL common shareholders, we believe adjusted operating income available to common shareholders provides a meaningful financial metric that helps investors understand our underlying results and profitability. Adjusted operating income available to common shareholders should not be used as a substitute for net income 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 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 available to AHL common shareholders and equity are significant to gaining an understanding of our overall financial performance.

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

Adjusted operating earnings 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 represents an economic view of our share counts and provides a simplified and consistent view of our outstanding shares. Adjusted operating earnings per common share is calculated as the adjusted operating income 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. Our Class B common shares are economically equivalent to Class A common shares and can be converted to Class A common shares on a one-for-one basis at any time. Our Class M common shares are in the legal form of shares but economically function as options as they are convertible into Class A shares after vesting and payment 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 are not dilutive, after considering the dilutive effects of the more dilutive securities in the sequence, they are 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 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 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 excluding debt of consolidated variable interest entities (VIEs) 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 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 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 alternative investment gains and losses, gains and losses related to trading securities for CLOs, net VIE impacts (revenues, expenses and noncontrolling interest) and the change in fair value of reinsurance assets. 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. Cost of funds is computed as the total liability costs divided by the average net invested assets 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 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, 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 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) the consolidated VIE assets, liabilities and noncontrolling interest, (f) net investment payables and receivables and (g) policy loans ceded (which offset the direct policy loans in total investments). 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. Our net invested assets 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:

	Years ended December 31,		
(In millions, except percentages)	2019	2018	2017
Revenues	$ 16,258	$ 6,637	$ 8,788
Benefits and expenses	13,956	5,462	7,324
Income before income taxes	2,302	1,175	1,464
Income tax expense	117	122	106
Net income	2,185	1,053	1,358
Less: Net income attributable to noncontrolling interests	13	—	—
Net income attributable to Athene Holding Ltd.	2,172	1,053	1,358
Less: preferred stock dividends	36	—	—
Net income available to AHL common shareholders	$ 2,136	$ 1,053	$ 1,358
ROE	19.7%	12.1%	16.9%

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

In this section, references to 2019 refer to the year ended December 31, 2019 and references to 2018 refer to the year ended December 31, 2018.

Net Income Available to AHL Common Shareholders

Net income available to AHL common shareholders increased by $1.1 billion, or 103%, to $2.1 billion in 2019 from $1.1 billion in 2018. ROE increased to 19.7% in 2019 from 12.1% in 2018. The increase in net income available to AHL common shareholders was driven by an increase in revenues of $9.6 billion, partially offset by an increase in benefits and expenses of $8.5 billion.

Revenues

Revenues increased by $9.6 billion to $16.3 billion in 2019 from $6.6 billion in 2018. The increase was driven by an increase in investment related gains and losses, an increase in premiums, higher net investment income and higher product charges.

Investment related gains and losses increased by $6.1 billion to a $4.8 billion gain in 2019 from a $1.3 billion loss in 2018, primarily due to the change in fair value of FIA hedging derivatives, the change in reinsurance embedded derivatives, the change in fair value of trading securities and the change in realized gains on AFS securities. The change in fair value of FIA hedging derivatives increased $3.0 billion driven by the strong 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 increased 28.9% in 2019, compared to a decrease of 6.2% in 2018. The change in change in reinsurance embedded derivatives increased by $2.5 billion primarily driven by the favorable change in the value of the underlying assets related to the decrease in U.S. Treasury rates compared to increases in 2018 as well as credit spreads tightening compared to widening in 2018. The favorable change in fair value of trading securities of $407 million was comprised primarily by an increase in AmerUs Closed Block assets of $265 million related to higher gains resulting from a decrease in U.S. Treasury rates and credit spreads tightening in 2019. The favorable change in realized gains on AFS securities of $108 million was driven by a higher level of sales favorably impacted by the lower interest rate environment.

Premiums increased by $2.9 billion to $6.4 billion in 2019 from $3.5 billion in 2018, driven by higher PRT premiums and an increase in premiums from flow reinsurance, partially offset by the 2018 Voya reinsurance premiums at inception.

Net investment income increased by $518 million to $4.5 billion in 2019 from $4.0 billion in 2018, primarily driven by growth in our investment portfolio attributed to the Voya and Lincoln reinsurance transactions and a strong increase in deposits over the prior twelve months. Additionally, net investment income increased due to higher bond call income and mortgage prepayments as well as higher alternative investment income, partially offset by the run-off of higher yielding assets and the unfavorable impact of the lower interest rate environment on new investment purchases in 2019 and lower RMBS returns.

Product charges increased by $75 million to $524 million in 2019 from $449 million in 2018, primarily driven by growth in the block of business as well as surrender and rider charges related to the addition of the Voya reinsurance liabilities.

Benefits and Expenses

Benefits and expenses increased by $8.5 billion to $14.0 billion in 2019 from $5.5 billion in 2018. The increase was driven by an increase in interest sensitive contract benefits, an increase in future policy and other policy benefits, an increase in DAC, DSI and VOBA amortization, and an increase in policy and other operating expenses.

Interest sensitive contract benefits increased by $4.3 billion to $4.6 billion in 2019 from $290 million in 2018, driven by an increase in FIA fair value embedded derivatives of $4.1 billion and growth in the block of business. The change in the FIA fair value embedded derivatives was due to the performance of the equity indices to which our FIA policies are linked, primarily the S&P 500 index, which increased 28.9% in 2019, compared to a decrease of 6.2% in 2018, as well as an unfavorable change in discount rates used in our embedded derivative calculations as the current year experienced a decrease in discount rates compared to 2018, which experienced an increase in discount rates. Additionally, the change in FIA fair value embedded derivatives was due to the unfavorable impact of our annual unlocking of assumptions of $385 million. Unlocking was unfavorably impacted by an increase of $76 million in 2019 compared to a decrease of $309 million in 2018, both of which were mainly attributed to changes in lapse assumptions.

Future policy and other policy benefits increased by $3.3 billion to $7.6 billion in 2019 from $4.3 billion in 2018, primarily attributable to higher PRT obligations, higher benefits for payout annuities with life contingencies due to the Voya reinsurance transaction and an increase in the change in AmerUs Closed Block fair value liability, partially offset by the 2018 Voya reinsurance policyholder obligations at inception and a decrease in the change in rider reserves. The change in the AmerUs Closed Block fair value liability of $285 million was primarily driven by the increase in unrealized gains on the underlying investments related to the change in U.S. Treasury rates compared to the prior year and credit spreads tightening. The change in rider reserve of $91 million was primarily due to the favorable unlocking of assumptions of $273 million and an unfavorable net change in FIA derivatives, partially offset by the favorable change in reinsurance embedded derivatives and growth in the block of business. Unlocking in 2019 was favorable by $61 million related to changes in lapse assumptions, partially offset by changes in the long-term net investment earned rate assumption. The 2018 unlocking impacts were unfavorable by $212 million related to changes in lapse assumptions partially offset by utilization of certain rider benefits.

DAC, DSI and VOBA amortization increased by $804 million to $1.0 billion in 2019 from $228 million in 2018, primarily due to a favorable change in investment related gains and losses as a result of a favorable change in reinsurance embedded derivatives, an unfavorable unlocking of assumptions of $232 million and growth in the block, partially offset by the unfavorable net change in FIA derivatives. Unlocking in 2019 was unfavorable by $150 million, primarily related to changes in the long-term net investment earned rate and lapse assumptions, while the 2018 unlocking impacts were favorable by $82 million related to changes in lapse assumptions.

Policy and other operating expenses increased by $118 million to $744 million in 2019 from $626 million in 2018, primarily driven by growth in our business, higher non-operating expenses related to costs not expected to reoccur and costs related to ACRA.

Taxes

Income tax expense decreased by $5 million to $117 million in 2019 from $122 million in 2018.

Our effective tax rates were 5% in 2019 and 10% in 2018. The decrease in our effective tax rate was primarily driven by the emergence of profits in non-taxable jurisdictions related to a favorable change in fair value of reinsurance assets. Our effective tax rates may vary period to period depending primarily upon the relationship of income and loss subject to tax compared to consolidated income and loss before income taxes.

Noncontrolling Interest

Noncontrolling interest increased by $13 million to $13 million in 2019 from $0 million in 2018, driven by income 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 $36 million to $36 million in 2019 from $0 million in 2018, driven by our issuances of preferred stock in 2019.

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

In this section, references to 2018 refer to the year ended December 31, 2018 and references to 2017 refer to the year ended December 31, 2017.

Net Income Available to AHL Common Shareholders

Net income available to AHL common shareholders decreased by $305 million, or 22%, to $1.1 billion in 2018 from $1.4 billion in 2017. ROE decreased to 12.1% from 16.9% in 2017. The decrease in net income available to AHL common shareholders was driven by a $2.2 billion decrease in total revenues, partially offset by a decrease in benefits and expenses of $1.9 billion.

Revenues

Total revenue decreased by $2.2 billion to $6.6 billion in 2018 from $8.8 billion in 2017. The decrease was driven by unfavorable changes in investment related gains and losses and VIE investment related gains and losses, partially offset by an increase in premiums, higher net investment income and higher product charges.

Investment related gains and losses decreased by $3.9 billion to a loss of $1.3 billion in 2018 from a gain of $2.6 billion in 2017, primarily due to the change in fair value of FIA hedging derivatives, the change in reinsurance embedded derivatives, an unfavorable change in gains and losses on trading securities and a $50 million gain on the sale of an equity security during 2017. The change in fair value of FIA hedging derivatives decreased by $2.8 billion driven by the weak 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 experienced a 6.2% decrease in 2018, compared to a 19.4% increase in 2017. The change in reinsurance embedded derivatives decreased by $639 million primarily driven by a change in the value of the underlying assets related to credit spreads widening and the increase in U.S. treasury rates compared to the prior year, which benefited from credit spreads tightening. Both of these drivers were magnified by growth in the reinsurance block related to the Voya and Lincoln transactions. The unfavorable change in gains and losses on trading securities of $284 million was comprised primarily by a decrease in AmerUs Closed Block assets of $179 million related to higher losses resulting from credit spreads widening and the increase in U.S. treasury rates compared to prior year.

VIE investment related gains and losses decreased by $53 million to a loss of $18 million in 2018 from a gain of $35 million in 2017, primarily due to the decline in market value of public equity positions in one of our funds.

Premiums increased by $936 million to $3.5 billion in 2018 from $2.5 billion in 2017, driven by the Voya reinsurance inception premiums attributed to payout annuities with life contingencies, an increase in premiums from PRT transactions and an increase in premiums from flow reinsurance, partially offset by the deconsolidation of Germany.

Net investment income increased by $735 million to $4.0 billion in 2018 from $3.3 billion in 2017, primarily driven by earnings from growth in our investment portfolio attributed to the Voya and Lincoln reinsurance transactions as well as a strong increase in deposits over the prior twelve months. Additionally, net investment income increased due to higher floating rate investment income of $113 million related to higher short-term interest rates and strong alternative investment income, partially offset by the deconsolidation of our former German operations.

Product charges increased by $109 million to $449 million in 2018 from $340 million in the prior period, primarily driven by higher rider charges related to growth in the block of business and charges related to the addition of the Voya liabilities.

Benefits and Expenses

Total benefits and expenses decreased by $1.9 billion to $5.5 billion in 2018 from $7.3 billion in 2017. The decrease was driven by a decrease in interest sensitive contract benefits, a decrease in DAC, DSI and VOBA amortization, a decrease in dividends payable to policyholders and lower policy and other operating expenses, partially offset by an increase in future policy and other policy benefits.

Interest sensitive contract benefits decreased by $2.6 billion to $290 million in 2018 from $2.9 billion in 2017, primarily due to the change in FIA fair value embedded derivatives, partially offset by growth in the block of business. The change in FIA fair value embedded derivatives decreased by $2.7 billion primarily driven by the weak performance of the equity indices to which our FIA policies are linked, primarily the S&P 500 index, which experienced a 6.2% decrease in 2018, compared to a 19.4% increase in 2017 as well as a favorable change in discount rates used in our embedded derivative calculations as the current period experienced an increase in discount rates compared to 2017, which experienced a decrease in discount rates. Additionally, the FIA fair value embedded derivatives were favorably impacted by $309 million during our annual unlocking of assumptions, which was mainly driven by updating lapse assumptions.

DAC, DSI and VOBA amortization decreased by $179 million to $228 million in 2018 from $407 million in 2017, primarily due to the change in investment related gains and losses, a favorable decrease to our annual unlocking of assumptions of $66 million, and the net change in FIA derivatives, partially offset by an increase in the DAC asset balance related to block growth. Unlocking in 2018 was favorable by $82 million related to changes in lapse assumptions, while 2017 unlocking was favorable by $16 million related to changes to the net investment earned rate and mortality assumptions.

Dividends to policyholders decreased by $81 million to $37 million in 2018 from $118 million in 2017, primarily attributed to the deconsolidation of our former German subsidiaries.

Policy and other operating expenses decreased by $46 million to $626 million in 2018 from $672 million in 2017, primarily driven by $82 million related to the deconsolidation of Germany and lower stock compensation expense of $19 million as well as a decrease in restructuring and acquisition expenses mainly due to 2017 Germany restructuring and higher costs associated with acquisition and block reinsurance opportunities in 2017, partially offset by $41 million of interest expense related to our January 2018 debt issuance.

Future policy and other policy benefits increased by $1.0 billion to $4.3 billion in 2018 from $3.3 billion in 2017, primarily attributable to the Voya reinsurance policyholder obligations at inception related to payout annuities with life contingencies, higher PRT obligations and an increase in rider reserves, partially offset by $247 million related to the deconsolidation of our former German subsidiaries and a decrease in the change in AmerUs Closed Block fair value liability. The increase in rider reserves of $251 million was primarily driven by an increase related to our annual unlocking of assumptions of $163 million, an increase related to the net change in FIA derivatives, growth in the block and unfavorable equity market performance compared to 2017, resulting in decreased index credits to policyholder accounts, which increased the amount needed to fund the rider reserve. Unlocking in 2018 was unfavorable by $212 million related to changes in lapse assumptions partially offset by utilization of certain rider benefits, while 2017 unlocking impacts were unfavorable by $49 million related to changes in the net investment earned rate and mortality assumptions. The favorable change in the AmerUs Closed Block fair value liability of $200 million was primarily driven by the increase in unrealized losses on the underlying investments related to credit spreads widening and the change in U.S. treasury rates compared to prior year.

Taxes

Income tax expense increased by $16 million to $122 million in 2018 from $106 million in 2017. The income tax expense for 2018 reflects the restructuring of our internal modco arrangements and implementation of additional reinsurance arrangements common in the insurance industry.

Our effective tax rates were 10% in 2018 and 7% in 2017. The effective tax rate excludes the impacts of an excise tax benefit of $2 million in 2018 and expense of $50 million in 2017, which are included in policy and other operating expenses on the consolidated statements of income. 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.

Results of Operations by Segment

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

	Years ended December 31,		
(In millions, except percentages)	2019	2018	2017
Net income available to AHL common shareholders	$ 2,136	$ 1,053	$ 1,358
Non-operating adjustments			
Realized gains (losses) on sale of AFS securities	125	13	137
Unrealized, impairments and other investment gains (losses)	(4)	(18)	(7)
Change in fair value of reinsurance assets	1,411	(402)	152
Offsets to investment gains (losses)	(538)	133	(83)
Investment gains (losses), net of offsets	994	(274)	199
Change in fair values of derivatives and embedded derivatives – FIAs, net of offsets	(65)	242	230
Integration, restructuring and other non-operating expenses	(70)	(22)	(68)
Stock compensation expense	(12)	(11)	(33)
Income tax (expense) benefit – non-operating	—	(22)	(25)
Less: Total non-operating adjustments	847	(87)	303
Adjusted operating income available to common shareholders	$ 1,289	$ 1,140	$ 1,055
Adjusted operating income (loss) available to common shareholders by segment			
Retirement Services	$ 1,322	$ 1,201	$ 1,038
Corporate and Other	(33)	(61)	17
Adjusted operating income available to common shareholders	$ 1,289	$ 1,140	$ 1,055
Adjusted operating ROE	14.1%	13.9%	15.1%
Retirement Services adjusted operating ROE	17.3%	18.4%	21.5%

Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income available to common shareholders increased by $149 million, or 13%, to $1.3 billion in 2019 from $1.1 billion in 2018. Adjusted operating ROE was 14.1%, up from 13.9% in 2018. The increase in adjusted operating income available to common shareholders was driven by an increase in our Retirement Services segment of $121 million as well as an increase in Corporate and Other of $28 million.

Our consolidated net investment earned rate was 4.48% in 2019, a decrease from 4.54% in 2018, due to a lower performance of our fixed and other investment portfolio, partially offset by favorable alternative investment returns. Fixed and other net investment earned rate was 4.23% in 2019, a decrease from 4.37% in 2018, primarily driven by run-off of higher yielding assets and the unfavorable impact of the lower interest rate environment on new investment purchases in 2019 and lower RMBS returns, partially offset by higher bond call income and mortgage prepayments. Alternative net investment earned rate was 9.84% in 2019, an increase from 8.51% in 2018, primarily driven by an increase in market value of the equity position in OneMain and the unfavorable 2018 change in market value of an equity position in Caesars Entertainment Corporation (Caesars), partially offset by lower credit fund and MidCap returns.

Non-operating Adjustments

Non-operating adjustments increased by $934 million to $847 million in 2019 from $(87) million in 2018. The increase in non-operating adjustments was primarily driven by the favorable change in fair value of reinsurance assets and an increase in gains on the sale of AFS securities, partially offset by the unfavorable net change in FIA derivatives. The change in fair value of reinsurance assets was favorable by $1.8 billion due to a decrease in U.S. Treasury rates, credit spreads tightening, and growth in the reinsurance block from the Voya and Lincoln transactions. Realized gains and losses increased $112 million driven by gains on the sale of AFS securities in 2019. Net FIA derivatives were unfavorable by $307 million due to an unfavorable change in discount rates used in our embedded derivative calculations as the current year experienced a decrease in discount rates compared to an increase in 2018, as well as $261 million of unfavorable unlocking net of offsets, partially offset by the favorable performance of the equity indices to which our FIA policies are linked, primarily the S&P 500 index. Unlocking, net of DAC and rider reserve offsets, was unfavorably impacted by $65 million in 2019 compared to a favorable impact of $196 million in 2018, both of which were mainly attributed to changes in lapse assumptions.

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income available to common shareholders increased by $85 million, or 8%, to $1.1 billion in 2018 from $1.1 billion in 2017. Adjusted operating ROE was 13.9%, down from 15.1% in 2017. The increase in adjusted operating income available to common shareholders was primarily driven by an increase in our Retirement Services segment of $163 million, partially offset by a decrease of $78 million in Corporate and Other.

Our consolidated net investment earned rate was 4.54% in 2018, an increase from 4.47% in 2017, primarily due to the performance in our fixed and other investment portfolio. Fixed and other net investment earned rate was 4.37% in 2018, an increase from 4.26% in 2017, driven by higher floating rate investment income in 2018 and the deconsolidation of Germany, which lowered returns in 2017, partially offset by lower new money rates over the past year and lower returns on assets from the Voya and Lincoln reinsurance transactions. Alternative net investment earned rate was 8.51% in 2018, a decrease from 8.72% in 2017, driven by the decline in market value of public equity positions in two of our funds, partially offset by strong MidCap and AmeriHome performance and higher income in one of our hedge funds.

Non-operating Adjustments

Non-operating adjustments decreased by $390 million to $(87) million in 2018 from $303 million in 2017. The decrease in non-operating adjustments was primarily driven by the unfavorable change in fair value of reinsurance assets and a decrease in realized gains and losses on the sale of AFS securities, partially offset by lower non-operating expenses. The change in fair value of reinsurance assets was unfavorable by $554 million due to credit spreads widening compared to the prior year, which benefited from credit spreads tightening, and growth in the reinsurance block from the Voya and Lincoln transactions. Realized gains and losses decreased $124 million driven by gains on the sale of equity securities in 2017 and the redeployment of the investment portfolio received in the Voya transaction. Non-operating expenses were favorable compared to prior year as 2017 included higher acquisition and block reinsurance costs, Germany restructuring costs, and higher stock compensation expense due to 2017 vesting performance of shares.

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.

Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income available to common shareholders increased by $121 million, or 10%, to $1.3 billion in 2019, from $1.2 billion in 2018. Adjusted operating ROE was 17.3%, down from 18.4% in the prior period. The increase in adjusted operating income available to common shareholders was driven by higher net investment earnings, partially offset by higher cost of funds and operating expense attributed to growth in our business. Net investment earnings was higher, primarily driven by $23.3 billion of growth in our average net invested assets attributed to the 2018 Voya and Lincoln reinsurance transactions and strong deposits over the prior twelve months as well as higher bond call income and mortgage prepayments, partially offset by the run-off of higher yielding assets and the unfavorable impact of the lower interest rate environment on new investment purchases in 2019 and lower RMBS returns. Cost of funds was higher primarily due to growth in the block of business, unfavorable rider reserves and DAC amortization related to unfavorable actuarial experience, higher k-factors following unlocking in both 2018 and 2019 and unfavorable unlocking of $35 million, partially offset by favorable impacts from equity market performance and lower gross profits.

Net Investment Spread

	Years ended December 31,	
	2019	2018
Net investment earned rate	4.43%	4.60%
Cost of funds	2.93%	2.90%
Net investment spread	1.50%	1.70%

Net investment spread, which measures the spread on our investment performance less the total cost of our liabilities, decreased 20 basis points to 1.50% in 2019 from 1.70% in 2018. Net investment earned rate decreased primarily due to the decline in fixed and other net investment earned rate and the decrease in alternative net investment earned rate. The fixed and other net investment earned rate decreased to 4.23% in 2019, from 4.36% in 2018 primarily attributed to run-off of higher yielding assets and the unfavorable impact of the lower interest rate environment on new investment purchases in 2019 and lower RMBS returns, partially offset by higher bond call income and mortgage prepayments. The alternative net investment earned rate decreased to 9.32% in 2019, from 11.15% in 2018, primarily driven by lower credit fund, real asset fund and MidCap returns.

Cost of funds increased by 3 basis points to 2.93% in 2019, from 2.90% in 2018, primarily driven by growth in our institutional channel at a higher rate, unfavorable rider reserves and DAC amortization related to unfavorable actuarial experience, higher k-factors following unlocking in both 2018 and 2019 and unfavorable unlocking, partially offset by favorable impacts from equity market performance and lower gross profits.

Investment Margin on Deferred Annuities

	Years ended December 31,	
	2019	2018
Net investment earned rate	4.43%	4.60%
Cost of crediting on deferred annuities	1.97%	1.95%
Investment margin on deferred annuities	2.46%	2.65%

Investment margin on deferred annuities, which measures our investment performance less the cost of crediting for our deferred annuities, decreased by 19 basis points to 2.46% in 2019, from 2.65% in 2018, driven by a decrease in the net investment earned rate and a slight increase in the cost of crediting on deferred annuities. 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.

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

Adjusted Operating Income Available to Common Shareholders

Adjusted operating income available to common shareholders increased by $163 million, or 16%, to $1.2 billion in 2018, from $1.0 billion in 2017. Adjusted operating ROE was 18.4%, down from 21.5% in 2017. The increase in adjusted operating income available to common shareholders was driven by higher net investment earnings, partially offset by higher cost of funds. Net investment earnings were higher primarily driven by $35.8 billion of growth in our net invested assets delivering attractive spread accretion over prior year primarily attributed to inorganic deposits from the Voya and Lincoln reinsurance transactions, strong organic deposits over the prior twelve months and higher floating rate income of $113 million related to higher short-term interest rates, as well as higher alternative investment income attributed to the strong performance from MidCap and AmeriHome and higher income in one of our hedge funds. Cost of funds was higher primarily due to higher rider reserves and DAC amortization related to unfavorable equity market performance resulting in an unfavorable $21 million impact in 2018 compared to a favorable $152 million impact in 2017, as well as unfavorable unlocking which had an unfavorable $13 million impact compared to a favorable $20 million impact in the prior year. Unlocking in 2018 reflected changes in lapse assumptions partially offset by utilization of certain rider benefits, while 2017 reflected changes in the net investment earned rate and mortality assumptions.

Net Investment Spread

	Years ended December 31,	
	2018	2017
Net investment earned rate	4.60%	4.70%
Cost of funds	2.90%	2.76%
Net investment spread	1.70%	1.94%

Net investment spread, which measures the spread on our investment performance less the total cost of our liabilities, decreased 24 basis points to 1.70% in 2018, from 1.94% in 2017. Net investment earned rate decreased due to a decline in our fixed and other net investment earned rate, partially offset by an increase in our alternative net investment earned rate. The fixed and other net investment earned rates decreased to 4.36% in 2018 from 4.48% in 2017 primarily attributed to lower returns on the assets from the Voya and Lincoln reinsurance transactions, lower new money rates on purchases compared to maturities over the past year and higher levels of cash during 2018, partially offset by higher floating rate investment income. The alternative net investment earned rate increased to 11.15% in 2018 from 10.01% in 2017, reflecting strong MidCap and AmeriHome performance and higher income in one of our hedge funds.

Cost of funds increased by 14 basis points to 2.90% in 2018, from 2.76% in 2017, primarily driven by growth in our institutional channel at a higher rate, unfavorable rider reserves and DAC amortization related to equity market impacts, an increase in option costs due to higher volatility and short-term interest rates and higher cost of crediting on Voya and Lincoln reinsurance liabilities.

Investment Margin on Deferred Annuities

	Years ended December 31,	
	2018	2017
Net investment earned rate	4.60%	4.70%
Cost of crediting on deferred annuities	1.95%	1.88%
Investment margin on deferred annuities	2.65%	2.82%

Investment margin on deferred annuities, which measures our investment performance less the cost of crediting for our deferred annuities, decreased by 17 basis points to 2.65% in 2018, from 2.82% in 2017, driven by the decrease in net investment earned rate, as well as an increase in cost of crediting on deferred annuities. Cost of crediting on deferred annuities increased by 7 basis points to 1.95% in 2018, from 1.88% in 2017. The increase in cost of crediting was driven by an increase in option costs due to higher volatility and short-term interest rates as well as a higher cost of crediting rate on the Voya reinsurance liabilities.

Corporate and Other

Corporate and Other includes certain other operations related to our corporate activities and prior to January 1, 2018, included our former German operations, which were primarily comprised of participating long-duration savings products. Included in Corporate and Other are 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 increased by $28 million to $(33) million in 2019, from $(61) million in 2018. The increase in adjusted operating income (loss) available to common shareholders was primarily driven by higher alternative investment income related to an increase in market value of the equity position in OneMain, partially offset by lower earnings from a decrease in excess capital and preferred stock dividends.

Adjusted operating income (loss) available to common shareholders decreased by $78 million to $(61) million in 2018, from $17 million in 2017. The decrease in adjusted operating income (loss) available to common shareholders was mainly driven by lower alternative investment income related to the decline in market value of public equity positions in two of our funds and debt costs from our debt issuance in January 2018. Our former German operations, which deconsolidated on January 1, 2018, had adjusted operating income available to common shareholders of $2 million in 2017.

Consolidated Investment Portfolio

We had consolidated investments, including related parties, of $129.8 billion and $107.6 billion as of December 31, 2019 and 2018, 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 reserve liabilities as well as surplus assets, were $117.5 billion and $111.0 billion as of December 31, 2019 and 2018, 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:

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Carrying Value	Percent of Total	Carrying Value	Percent of Total
AFS securities, at fair value	$ 71,374	55.0%	$ 59,265	55.1%
Trading securities, at fair value	2,054	1.6%	1,949	1.8%
Equity securities, at fair value	247	0.2%	216	0.2%
Mortgage loans, net of allowances	14,306	11.0%	10,340	9.6%
Investment funds	731	0.6%	703	0.6%
Policy loans	417	0.3%	488	0.4%
Funds withheld at interest	15,181	11.7%	15,023	14.0%
Derivative assets	2,888	2.2%	1,043	1.0%
Short-term investments	596	0.5%	191	0.2%
Other investments	158	0.1%	122	0.1%
Total investments	107,952	83.2%	89,340	83.0%
Investments in related parties				
AFS securities, at fair value	3,804	2.9%	1,437	1.3%
Trading securities, at fair value	785	0.6%	249	0.2%
Equity securities, at fair value	58	0.0%	120	0.1%
Mortgage loans	653	0.5%	291	0.3%
Investment funds	2,886	2.2%	2,232	2.1%
Funds withheld at interest	13,220	10.2%	13,577	12.6%
Other investments	487	0.4%	386	0.4%
Total related party investments	21,893	16.8%	18,292	17.0%
Total investments including related party	$ 129,845	100.0%	$ 107,632	100.0%

The increase in our total investments, including related party, as of December 31, 2019 of $22.2 billion compared to December 31, 2018 was mainly driven by growth from organic deposits of $18.1 billion less liability outflows of $11.0 billion, an increase in unrealized gains on AFS securities of $4.9 billion attributed to the decrease in U.S. Treasury rates and credit spreads tightening, an increase in derivative assets due to favorable equity market performance and reinvestment of earnings.

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 a small amount of 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 other asset-backed securities (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 do not expect the counterparties to fail to meet 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 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. Declines in fair value that are other than temporary are recorded as realized losses in the consolidated statements of income, net of any applicable non-credit component of the loss, which is recorded as an adjustment to other comprehensive income.

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

	December 31, 2019				
(In millions, except percentages)	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%

	December 31, 2018				
(In millions, except percentages)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value	Percent of Total
AFS securities					
U.S. government and agencies	$ 57	$ —	$ —	$ 57	0.1%
U.S. state, municipal and political subdivisions	1,183	117	(7)	1,293	2.1%
Foreign governments	162	2	(3)	161	0.3%
Corporate	38,018	394	(1,315)	37,097	61.1%
CLO	5,658	2	(299)	5,361	8.8%
ABS	4,915	53	(48)	4,920	8.1%
CMBS	2,390	27	(60)	2,357	3.9%
RMBS	7,642	413	(36)	8,019	13.2%
Total AFS securities	60,025	1,008	(1,768)	59,265	97.6%
AFS securities – related party					
CLO	587	—	(25)	562	0.9%
ABS	875	4	(4)	875	1.5%
Total AFS securities – related party	1,462	4	(29)	1,437	2.4%
Total AFS securities including related party	$ 61,487	$ 1,012	$ (1,797)	$ 60,702	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:

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
Corporate				
Industrial other[1]	$ 14,956	19.9 %	$ 11,706	19.3 %
Financial	15,286	20.3 %	11,809	19.5 %
Utilities	11,217	14.9 %	9,055	14.9 %
Communication	2,739	3.7 %	2,313	3.8 %
Transportation	3,049	4.1 %	2,214	3.6 %
Total corporate	47,247	62.9 %	37,097	61.1 %
Other government-related securities				
U.S. state, municipal and political subdivisions	1,541	2.1 %	1,293	2.1 %
Foreign governments	327	0.4 %	161	0.3 %
U.S. government and agencies	36	0.0 %	57	0.1 %
Total non-structured securities	49,151	65.4 %	38,608	63.6 %
Structured securities				
CLO	8,285	11.0 %	5,923	9.8 %
ABS	7,967	10.6 %	5,795	9.5 %
CMBS	2,400	3.2 %	2,357	3.9 %
RMBS				
Agency	3	0.0 %	59	0.1 %
Non-agency	7,372	9.8 %	7,960	13.1 %
Total structured securities	26,027	34.6 %	22,094	36.4 %
Total AFS securities including related party	$ 75,178	100.0 %	$ 60,702	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 $75.2 billion and $60.7 billion as of December 31, 2019 and 2018, respectively. The increase was mainly driven by strong growth in deposits over liability outflows, the change in unrealized gains on AFS securities and reinvestment of earnings. The increase in unrealized gains and losses on AFS securities was attributed to the decrease in U.S. Treasury rates and credit spreads tightening.

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 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 processes, 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:

	December 31, 2019			December 31, 2018		
(In millions, except percentages)	Amortized Cost	Fair Value	Percent of Total	Amortized Cost	Fair Value	Percent of Total
NAIC designation						
1	$ 36,392	$ 38,667	51.4%	$ 31,106	$ 31,311	51.6%
2	30,752	32,336	43.0%	26,682	25,871	42.6%
Total investment grade	67,144	71,003	94.4%	57,788	57,182	94.2%
3	3,237	3,300	4.4%	2,866	2,746	4.5%
4	740	740	1.0%	591	533	0.9%
5	102	94	0.1%	235	232	0.4%
6	39	41	0.1%	7	9	0.0%
Total below investment grade	4,118	4,175	5.6%	3,699	3,520	5.8%
Total AFS securities including related party	$ 71,262	$ 75,178	100.0%	$ 61,487	$ 60,702	100.0%

A significant majority of our AFS portfolio, 94.4% and 94.2% as of December 31, 2019 and 2018, 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:

(In millions, except percentages)	December 31, 2019 Fair Value	Percent of Total	December 31, 2018 Fair Value	Percent of Total
NRSRO rating agency designation				
AAA/AA/A	$ 28,299	37.7%	$ 19,690	32.4%
BBB	29,032	38.6%	23,326	38.4%
Non-rated[1]	10,014	13.3%	9,624	15.9%
Total investment grade	67,345	89.6%	52,640	86.7%
BB	3,403	4.5%	2,670	4.4%
B	813	1.1%	875	1.4%
CCC	1,981	2.6%	2,340	3.9%
CC and lower	1,076	1.4%	1,296	2.1%
Non-rated[1]	560	0.8%	881	1.5%
Total below investment grade	7,833	10.4%	8,062	13.3%
Total AFS securities including related party	$ 75,178	100.0%	$ 60,702	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 ratings 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 10.4% and 13.3% as of December 31, 2019 and 2018, 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 December 31, 2019 and 2018, non-rated securities were comprised of 61% and 56%, respectively, of corporate private placement securities for which we have not sought individual ratings from the NRSRO, and 24% and 30%, 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 December 31, 2019 and 2018, 95% and 92%, 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 $8.0 billion and $5.8 billion as of December 31, 2019 and 2018, respectively. The increase in our ABS portfolio is mainly due to the acquisition of PK AirFinance securities as well as attractive investments made during the year as new deposits and the Voya and Lincoln investment portfolios were redeployed. As of December 31, 2019 and 2018, our ABS portfolio included $7.4 billion (92% of the total) and $5.4 billion (92% of the total), respectively, of securities that are considered investment grade based on NAIC designations, while $7.4 billion (92% of the total) and $5.2 billion (89% 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 $8.3 billion and $5.9 billion as of December 31, 2019 and 2018, respectively.

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

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
NAIC designation				
1	$ 4,626	55.9%	$ 3,005	50.7%
2	3,499	42.2%	2,498	42.2%
Total investment grade	8,125	98.1%	5,503	92.9%
3	133	1.6%	393	6.7%
4	20	0.2%	20	0.3%
5	7	0.1%	7	0.1%
6	—	—%	—	—%
Total below investment grade	160	1.9%	420	7.1%
Total AFS CLO including related party	$ 8,285	100.0%	$ 5,923	100.0%
NRSRO rating agency designation				
AAA/AA/A	$ 4,626	55.9%	$ 2,921	49.3%
BBB	3,499	42.2%	2,829	47.8%
Total investment grade	8,125	98.1%	5,750	97.1%
BB	133	1.6%	146	2.4%
B	20	0.2%	27	0.5%
CCC	7	0.1%	—	—%
CC and lower	—	—%	—	—%
Total below investment grade	160	1.9%	173	2.9%
Total AFS CLO including related party	$ 8,285	100.0%	$ 5,923	100.0%

As of December 31, 2019 and 2018, a majority of our CLO portfolio, 98.1% and 92.9%, respectively, was invested in assets considered to be investment grade based upon application of the NAIC's methodology. As of December 31, 2019 and 2018, 98.1% and 97.1%, respectively, of our CLO portfolio was considered investment grade based on NRSRO ratings. The increase in our CLO portfolio is mainly due to attractive investments made during the period as new deposits and the Voya and Lincoln investment portfolios were redeployed.

Commercial Mortgage-backed Securities – A portion of our AFS portfolio is invested in CMBS, which are constructed from pools of commercial mortgages. These holdings were $2.4 billion and $2.4 billion as of December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, our CMBS portfolio included $2.1 billion (89% of the total) and $2.1 billion (91% of the total), respectively, of securities that are considered investment grade based on NAIC designations, while $1.7 billion (72% of the total) and $1.6 billion (66% 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 constructed from pools of residential mortgages. These holdings were $7.4 billion and $8.0 billion as of December 31, 2019 and 2018, respectively.

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

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Fair Value	Percent of Total	Fair Value	Percent of Total
NAIC designation				
1	$ 6,701	90.9%	$ 7,415	92.5%
2	330	4.5%	269	3.3%
Total investment grade	7,031	95.4%	7,684	95.8%
3	289	3.9%	207	2.6%
4	52	0.7%	106	1.3%
5	3	0.0%	22	0.3%
6	—	—%	—	—%
Total below investment grade	344	4.6%	335	4.2%
Total AFS RMBS	$ 7,375	100.0%	$ 8,019	100.0%
NRSRO rating agency designation				
AAA/AA/A	$ 715	9.7%	$ 487	6.1%
BBB	606	8.2%	220	2.7%
Non-rated[1]	2,428	32.9%	2,932	36.6%
Total investment grade	3,749	50.8%	3,639	45.4%
BB	281	3.8%	332	4.1%
B	232	3.2%	301	3.8%
CCC	1,890	25.6%	2,259	28.2%
CC and lower	1,074	14.6%	1,292	16.1%
Non-rated[1]	149	2.0%	196	2.4%
Total below investment grade	3,626	49.2%	4,380	54.6%
Total AFS RMBS	$ 7,375	100.0%	$ 8,019	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 ratings methodology.*

A significant majority of our RMBS portfolio, 95.4% and 95.8% as of December 31, 2019 and 2018, respectively, was invested in assets considered to be investment grade based upon 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 December 31, 2019 and 2018, NRSRO characterized 50.8% and 45.4%, respectively, of our RMBS portfolio as investment grade.

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 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. As of December 31, 2018, our AFS securities, including related party, had a fair value of $60.7 billion, which was 1.3% below amortized cost of $61.5 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, by NAIC designations:

(In millions, except percentages)	December 31, 2019 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)%

(In millions, except percentages)	December 31, 2018 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	$ 15,373	$ (545)	$ 14,828	96.5%	$ 31,311	(1.7)%
2	19,152	(1,035)	18,117	94.6%	25,871	(4.0)%
Total investment grade	34,525	(1,580)	32,945	95.4%	57,182	(2.8)%
3	2,308	(147)	2,161	93.6%	2,746	(5.4)%
4	500	(65)	435	87.0%	533	(12.2)%
5	88	(5)	83	94.3%	232	(2.2)%
6	2	—	2	100.0%	9	— %
Total below investment grade	2,898	(217)	2,681	92.5%	3,520	(6.2)%
Total	$ 37,423	$ (1,797)	$ 35,626	95.2%	$ 60,702	(3.0)%

The gross unrealized losses on AFS securities, including related parties, were $469 million and $1.8 billion as of December 31, 2019 and 2018, respectively. The decrease in unrealized losses was driven by the decrease in U.S. Treasury rates and credit spreads tightening during year ended December 31, 2019.

Other-Than-Temporary Impairments

For our OTTI policy and the identification of securities that could potentially have impairments, see *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* and *Note 2 – Investments* to the consolidated financial statements, as well as *Critical Accounting Estimates and Judgments*.

During the years ended December 31, 2019, 2018 and 2017, we recorded $38 million, $18 million and $33 million, respectively, of OTTI losses. OTTI losses in 2019 and 2018 were primarily related to corporate fixed maturities. OTTI losses in 2017 were primarily related to corporate fixed maturities, real estate and mortgage loans. The OTTI losses we have experienced for the years ended December 31, 2019, 2018 and 2017 translate into 3 basis points, 2 basis points and 4 basis points, respectively, of average gross invested assets. The OTTI losses in relation to average net invested assets, which exclude the ACRA noncontrolling interest, translate into 3 basis points, 2 basis points and 4 basis points for the years ended December 31, 2019, 2018 and 2017, respectively.

International Exposure

A portion of our AFS securities are invested in securities with international exposure. As of December 31, 2019 and 2018, 32% and 30%, respectively, 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. The increase in international exposure was primarily driven by the purchase of CLOs and the investments acquired in the closing our first UK PRT transaction in 2019. 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:

	December 31, 2019			December 31, 2018		
(In millions, except percentages)	Amortized Cost	Fair Value	Percent of Total	Amortized Cost	Fair Value	Percent of Total
Country of risk						
Ireland	$ 1,109	$ 1,137	4.7%	$ 578	$ 552	3.0%
Italy	6	7	0.0%	36	35	0.2%
Spain	66	71	0.2%	62	62	0.4%
Total Ireland, Italy, Greece, Spain and Portugal[1]	1,181	1,215	4.9%	676	649	3.6%
Other Europe	7,333	7,711	32.1%	6,335	6,133	33.3%
Total Europe	8,514	8,926	37.0%	7,011	6,782	36.9%
Non-U.S. North America	11,650	11,670	48.5%	9,261	8,906	48.4%
Australia & New Zealand	1,853	1,966	8.2%	1,731	1,696	9.2%
Central & South America	473	501	2.1%	448	445	2.4%
Africa & Middle East	350	379	1.6%	228	226	1.2%
Asia/Pacific	580	616	2.6%	351	345	1.9%
Total	$ 23,420	$ 24,058	100.0%	$ 19,030	$ 18,400	100.0%

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

Approximately 95.8% and 93.9% of these securities are investment grade by NAIC designation as of December 31, 2019 and 2018, respectively. As of December 31, 2019, 10% of our AFS securities, including related parties, were invested in CLOs of Cayman Islands issuers (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 and $649 million as of December 31, 2019 and 2018, respectively, of exposure in these countries.

As of December 31, 2019, we held UK and Channel Islands AFS securities of $3.2 billion, or 4.2% of our AFS securities, including related parties. As of December 31, 2019, these securities were in a net unrealized gain position of $111 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 $2.8 billion and $2.2 billion as of December 31, 2019 and 2018, 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:

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Net Carrying Value	Percent of Total	Net Carrying Value	Percent of Total
Property type				
Office building	$ 2,899	19.3 %	$ 2,221	20.9 %
Retail	2,182	14.6 %	1,660	15.6 %
Apartment	2,142	14.3 %	791	7.4 %
Hotels	1,104	7.4 %	1,040	9.8 %
Industrial	1,448	9.7 %	1,196	11.2 %
Other commercial[1]	730	4.9 %	389	3.7 %
Total net commercial mortgage loans	10,505	70.2 %	7,297	68.6 %
Residential loans	4,454	29.8 %	3,334	31.4 %
Total mortgage loans, net of allowances	$ 14,959	100.0 %	$ 10,631	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 and $10.6 billion as of December 31, 2019 and 2018, respectively. This included $1.9 billion and $2.1 billion of mezzanine mortgage loans as of December 31, 2019 and 2018, respectively. The increase in mortgage loans is mainly driven by attractive risk and return investments in both CML and RML during the period. 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 valuation 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 December 31, 2019 and 2018, we had $67 million and $48 million, respectively, of mortgage loans that were 90 days past due, of which $33 million and $15 million, respectively, were in the process of foreclosure.

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

As of December 31, 2019 and 2018, we had no specific loan valuation allowances. We have established a general loan valuation allowance in the aggregate amount of $11 million and $2 million as of December 31, 2019 and 2018, respectively. For the years ended December 31, 2019, 2018 and 2017, we recorded $0 million, $0 million and $3 million, respectively, of impairments through net income.

Investment Funds and Variable Interest Entities

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. See *Note 4 – Variable Interest Entities* to the consolidated financial statements for further discussion on our investment funds that meet the criteria for consolidation and the accounting treatment for them.

The following table illustrates our consolidated VIE positions:

(In millions, except percentages)	December 31, 2019 Carrying Value	December 31, 2019 Percent of Total	December 31, 2018 Carrying Value	December 31, 2018 Percent of Total
Assets of consolidated VIEs				
Investments				
Trading securities	$ 16	2.2%	$ 35	4.9%
Equity securities	6	0.8%	50	7.0%
Investment funds	683	93.9%	624	87.7%
Cash and cash equivalents	3	0.4%	2	0.3%
Other assets	20	2.7%	1	0.1%
Total assets of consolidated VIEs	$ 728	100.0%	$ 712	100.0%

The following table illustrates our investment funds, including related party positions and investment funds owned by consolidated VIEs:

(In millions, except percentages)	December 31, 2019 Carrying Value	December 31, 2019 Percent of Total	December 31, 2018[1] Carrying Value	December 31, 2018[1] Percent of Total
Investment funds				
Real estate	$ 277	6.4%	$ 215	6.0%
Credit funds	153	3.6%	172	4.8%
Private equity	236	5.5%	253	7.1%
Real assets	64	1.5%	56	1.6%
Natural resources	1	0.0%	4	0.1%
Other	—	—%	3	0.1%
Total investment funds	731	17.0%	703	19.7%
Investment funds – related parties				
Differentiated investments				
AmeriHome	487	11.3%	463	13.0%
Catalina	271	6.3%	233	6.5%
Athora	132	3.1%	105	3.0%
Venerable	99	2.3%	92	2.6%
Other	222	5.2%	196	5.5%
Total differentiated investments	1,211	28.2%	1,089	30.6%
Real estate	736	17.1%	497	14.0%
Credit funds	370	8.6%	316	8.9%
Private equity	105	2.4%	18	0.5%
Real assets	182	4.2%	145	4.1%
Natural resources	163	3.8%	104	2.9%
Public equities	119	2.8%	63	1.8%
Total investment funds – related parties	2,886	67.1%	2,232	62.8%
Investment funds owned by consolidated VIEs				
MidCap	547	12.7%	553	15.5%
Real estate	117	2.7%	30	0.8%
Real assets	19	0.5%	41	1.2%
Total investment funds owned by consolidated VIEs	683	15.9%	624	17.5%
Total investment funds, including related parties and funds owned by consolidated VIEs	$ 4,300	100.0%	$ 3,559	100.0%

[1] *Certain reclassifications have been made to conform with current year presentation.*

Overall, the total investment funds, including related party and consolidated VIEs, were $4.3 billion and $3.6 billion as of December 31, 2019 and 2018, respectively. See *Note 2 – Investments* to the 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.

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 December 31, 2019, the significant majority of the ceding companies holding the assets pursuant to such reinsurance agreements had a financial strength rating of B+ or better.

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 consolidated statements of income. 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:

	December 31, 2019		December 31, 2018	
(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 %	$ 77	0.3 %
U.S. state, municipal and political subdivisions	482	1.7 %	563	2.0 %
Foreign governments	143	0.5 %	145	0.5 %
Corporate	14,590	51.4 %	16,267	56.9 %
CLO	2,586	9.1 %	1,990	7.0 %
ABS	2,510	8.8 %	1,601	5.6 %
CMBS	756	2.7 %	575	2.0 %
RMBS	1,482	5.2 %	1,876	6.6 %
Equity securities	74	0.3 %	66	0.2 %
Mortgage loans	4,357	15.3 %	3,815	13.3 %
Investment funds	807	2.8 %	660	2.3 %
Derivative assets	224	0.8 %	77	0.3 %
Short-term investments	157	0.6 %	641	2.2 %
Cash and cash equivalents	239	0.8 %	455	1.6 %
Other assets and liabilities	(21)	(0.1)%	(208)	(0.8)%
Total funds withheld at interest including related party	$ 28,401	100.0 %	$ 28,600	100.0 %

As of December 31, 2019 and 2018, we held $28.4 billion and $28.6 billion, respectively, of funds withheld at interest receivables, including related party. Approximately 94.4% and 96.6% of the fixed maturity securities within the funds withheld at interest are investment grade by NAIC designation as of December 31, 2019 and 2018, respectively.

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 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.

Net Invested Assets

The following summarizes our invested assets:

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Net Invested Asset Value[1]	Percent of Total	Net Invested Asset Value[1]	Percent of Total
Corporate	$ 55,077	46.9%	$ 55,772	50.2%
CLO	10,223	8.7%	8,275	7.5%
Credit	65,300	55.6%	64,047	57.7%
RMBS	8,394	7.1%	9,814	8.9%
Mortgage loans	18,528	15.8%	14,423	13.0%
CMBS	2,930	2.5%	3,018	2.7%
Real estate	29,852	25.4%	27,255	24.6%
ABS	10,317	8.8%	7,706	6.9%
Alternative investments	5,586	4.8%	4,492	4.1%
State, municipal, political subdivisions and foreign government	2,260	1.9%	2,122	1.9%
Equity securities	365	0.3%	467	0.4%
Short-term investments	624	0.5%	765	0.7%
U.S. government and agencies	49	0.0%	134	0.1%
Other investments	19,201	16.3%	15,686	14.1%
Cash and equivalents	1,958	1.7%	2,881	2.6%
Policy loans and other	1,175	1.0%	1,165	1.0%
Net invested assets	$ 117,486	100.0%	$ 111,034	100.0%

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

Our net invested assets were $117.5 billion and $111.0 billion as of December 31, 2019 and 2018, respectively. As of December 31, 2019, our net invested assets were mainly comprised of 46.9% of corporate securities, 27.1% of structured securities, 15.8% of mortgage loans and 4.8% of alternative investments. Corporate securities included $15.0 billion of private placements, which represented 13% of our net invested assets. The increase in net invested assets as of December 31, 2019 from 2018 was primarily driven by strong growth in deposits over liability outflows 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 consolidated balance sheets, as discussed previously in *Key Operating and Non-GAAP Measures*. Net invested assets represent the investments that directly back our 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 deconsolidate any VIEs in order to show the net investment in the funds, which are included in the alternative investments line above. 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 asset figures are 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:

	December 31, 2019		December 31, 2018	
(In millions, except percentages)	Net Invested Asset Value	Percent of Total	Net Invested Asset Value	Percent of Total
Retirement Services				
Differentiated investments				
AmeriHome	$ 595	10.7%	$ 568	12.6%
MidCap	547	9.8%	553	12.3%
Catalina	271	4.9%	232	5.2%
Venerable	99	1.8%	92	2.1%
Other	208	3.7%	229	5.1%
Total differentiated investments	1,720	30.9%	1,674	37.3%
Real estate	1,430	25.6%	1,015	22.6%
Credit	968	17.3%	537	11.9%
Private equity	378	6.8%	279	6.2%
Real assets	349	6.2%	276	6.2%
Natural resources	51	0.9%	55	1.2%
Other	58	1.0%	4	0.1%
Total Retirement Services alternative investments	4,954	88.7%	3,840	85.5%
Corporate and Other				
Athora	140	2.5%	130	2.9%
Credit	128	2.3%	203	4.5%
Natural resources	245	4.4%	213	4.8%
Public equities[1]	119	2.1%	100	2.2%
Other	—	—%	6	0.1%
Total Corporate and Other alternative investments	632	11.3%	652	14.5%
Net alternative investments	$ 5,586	100.0%	$ 4,492	100.0%

[1] *As of December 31, 2019, public equities is exclusively comprised of an investment in OneMain Holdings, Inc. (ticker: OMF).*

Net alternative investments were $5.6 billion and $4.5 billion as of December 31, 2019 and 2018, respectively, representing 4.8% and 4.1% of our net invested assets portfolio as of December 31, 2019 and 2018, respectively.

Net alternative investments do not correspond to the total investment funds, including related parties and VIEs, on our consolidated balance sheets. As discussed above in the invested assets section, we adjust the GAAP presentation for funds withheld and modco and de-consolidate VIEs. We also 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.

Our alternative investment in CoInvest VII is substantially comprised of its investment in MidCap, which had a net invested asset value of $547 million and $553 million as of December 31, 2019 and 2018, 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 11.56%, 14.48% and 8.93% for the years ended December 31, 2019, 2018, and 2017, respectively. Alternative investment income from CoInvest VII was $65 million, $81 million and $50 million for the years ended December 31, 2019, 2018, and 2017, respectively. The decrease in alternative investment income for 2019 compared to 2018 was driven by unfavorable changes in valuation in 2019 compared to a favorable valuation adjustment in 2018. The increase in alternative investment income for 2018 compared to 2017 was driven by a favorable valuation adjustment, higher loan volumes and increased assets under management.

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 net invested asset value of $595 million and $568 million as of December 31, 2019 and 2018, 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 14.00%, 13.15% and 12.01% for the years ended December 31, 2019, 2018, and 2017, respectively. Alternative investment income from A-A Mortgage was $81 million, $72 million and $58 million for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in alternative investment income of $9 million was primarily driven by a gain on the sale of of mortgage servicing rights in 2019. The increase in alternative investment income of $14 million, or 24%, for 2018 compared to 2017 was driven by strong originations and an increase in balance sheet size.

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 in recent periods. As of December 31, 2019 and 2018, we indirectly held public equity positions of $119 million and $100 million, respectively. As of December 31, 2019 and 2018, we held approximately 2.8 million and 2.8 million shares, respectively, of OneMain with a market value of $119 million and $63 million, respectively. As of December 31, 2018, we held approximately 5.5 million shares of Caesars, with a market value of $37 million. Caesars was held indirectly through our investment in AAA Investment (Co Invest VI), L.P. (CoInvest VI). In the first quarter of 2019, CoInvest VI sold its remaining shares of Caesars.

Non-GAAP Measure Reconciliations

The reconciliations to the nearest GAAP measure for adjusted operating income available to common shareholders is included in the *Consolidated Results of Operations* section. See *Item 6. Selected Financial Data – Non-GAAP Measures* for additional reconciliations.

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:

	December 31,		
(In millions)	2019	2018	2017
Total AHL shareholders' equity	$ 13,391	$ 8,276	$ 9,176
Less: Preferred stock	1,172	—	—
Total AHL common shareholders' equity	12,219	8,276	9,176
Less: AOCI	2,281	(472)	1,449
Less: Accumulated change in fair value of reinsurance assets	493	(75)	161
Total adjusted AHL common shareholders' equity	$ 9,445	$ 8,823	$ 7,566
Segment adjusted common shareholders' equity			
Retirement Services	$ 7,443	$ 7,807	$ 5,237
Corporate and Other	2,002	1,016	2,329
Total adjusted AHL common shareholders' equity	$ 9,445	$ 8,823	$ 7,566

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

	Years ended December 31,		
(In millions)	2019	2018	2017
Average AHL shareholders' equity	$ 10,834	$ 8,726	$ 8,029
Less: Average preferred stock	586	—	—
Less: Average AOCI	905	489	908
Less: Average accumulated change in fair value of reinsurance assets	209	43	112
Average adjusted AHL common shareholders' equity	$ 9,134	$ 8,194	$ 7,009
Segment average adjusted common shareholders' equity			
Retirement Services	$ 7,625	$ 6,522	$ 4,823
Corporate and Other	1,509	1,672	2,186
Average adjusted AHL common shareholders' equity	$ 9,134	$ 8,194	$ 7,009

The reconciliation of debt to capital ratio to adjusted debt to capital ratio is as follows:

	December 31,	
(In millions, except percentages)	2019	2018
Total debt	$ 1,467	$ 991
Total AHL shareholders' equity	13,391	8,276
Total capitalization	14,858	9,267
Less: AOCI	2,281	(472)
Less: Accumulated change in fair value of reinsurance assets	493	(75)
Total adjusted capitalization	$ 12,084	$ 9,814
Debt to capital ratio	9.9%	10.7 %
AOCI	1.8%	(0.5)%
Accumulated change in fair value of reinsurance assets	0.4%	(0.1)%
Adjusted debt to capital ratio	12.1%	10.1 %

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

	Years ended December 31,					
	2019		2018		2017	
(In millions, except percentages)	Dollar	Rate	Dollar	Rate	Dollar	Rate
GAAP net investment income	$ 4,522	3.91 %	$ 4,004	4.30 %	$ 3,269	4.27 %
Change in fair value of reinsurance assets	680	0.59 %	301	0.32 %	191	0.25 %
Net VIE earnings	80	0.07 %	37	0.04 %	77	0.10 %
Alternative income gain (loss)	1	0.00 %	(34)	(0.04)%	(20)	(0.03)%
ACRA noncontrolling interest	(61)	(0.05)%	—	— %	—	— %
Held for trading amortization and other	(43)	(0.04)%	(76)	(0.08)%	(94)	(0.12)%
Total adjustments to arrive at net investment earnings/earned rate	657	0.57 %	228	0.24 %	154	0.20 %
Total net investment earnings/earned rate	$ 5,179	4.48 %	$ 4,232	4.54 %	$ 3,423	4.47 %
Retirement Services	$ 5,062	4.43 %	$ 4,188	4.60 %	$ 3,241	4.70 %
Corporate and Other	117	8.33 %	44	1.99 %	182	2.42 %
Total net investment earnings/earned rate	$ 5,179	4.48 %	$ 4,232	4.54 %	$ 3,423	4.47 %
Retirement Services average net invested assets	$ 114,310		$ 90,995		$ 69,014	
Corporate and Other average net invested assets	1,409		2,182		7,541	
Consolidated average net invested assets	$ 115,719		$ 93,177		$ 76,555	

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

	Years ended December 31,					
	2019		2018		2017	
(In millions, except percentages)	Dollar	Rate	Dollar	Rate	Dollar	Rate
GAAP interest sensitive contract benefits	$ 4,557	3.99 %	$ 290	0.32 %	$ 2,866	4.15 %
Interest credited other than deferred annuities and institutional products	232	0.20 %	65	0.07 %	(35)	(0.05)%
FIA option costs	1,109	0.97 %	886	0.97 %	607	0.88 %
Product charges (strategy fees)	(119)	(0.10)%	(98)	(0.11)%	(73)	(0.10)%
Reinsurance embedded derivative impacts	57	0.05 %	49	0.05 %	37	0.05 %
Change in fair value of embedded derivatives – FIAs	(3,644)	(3.19)%	436	0.48 %	(2,252)	(3.26)%
Negative VOBA amortization	36	0.03 %	31	0.04 %	40	0.06 %
ACRA noncontrolling interest	(42)	(0.03)%	—	— %	—	— %
Unit-linked change in reserves	—	— %	—	— %	(29)	(0.04)%
Other changes in interest sensitive contract liabilities	(7)	(0.01)%	—	— %	(5)	(0.01)%
Total adjustments to arrive at cost of crediting	(2,378)	(2.08)%	1,369	1.50 %	(1,710)	(2.47)%
Retirement Services cost of crediting	$ 2,179	1.91 %	$ 1,659	1.82 %	$ 1,156	1.68 %
Retirement Services cost of crediting on deferred annuities	$ 1,774	1.97 %	$ 1,431	1.95 %	$ 1,066	1.88 %
Retirement Services cost of crediting on institutional products	405	3.47 %	228	3.42 %	90	2.83 %
Retirement Services cost of crediting	$ 2,179	1.91 %	$ 1,659	1.82 %	$ 1,156	1.68 %
Retirement Services average invested assets	$ 114,310		$ 90,995		$ 69,014	
Average account value on deferred annuities	89,878		73,567		56,589	
Average institutional reserve liabilities	11,632		6,683		3,194	

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

	Years ended December 31,		
(In millions)	2019	2018	2017
GAAP benefits and expenses	$ 13,956	$ 5,462	$ 7,324
Premiums	(6,382)	(3,462)	(2,526)
Product charges	(524)	(449)	(340)
Other revenues	(37)	(26)	(37)
Cost of crediting	(1,013)	(724)	(513)
Change in fair value of embedded derivatives – FIA, net of offsets	(3,577)	327	(2,404)
DAC, DSI and VOBA amortization related to investment gains and losses	(477)	110	(65)
Rider reserves related to investment gains and losses	(58)	16	(16)
Policy and other operating expenses, excluding policy acquisition expenses	(488)	(395)	(435)
AmerUs closed block fair value liability	(152)	112	(68)
Policyholder dividends	—	—	(84)
ACRA noncontrolling interest	(74)	—	—
Other	(2)	10	(30)
Total adjustments to arrive at other liability costs	(12,784)	(4,481)	(6,518)
Other liability costs	$ 1,172	$ 981	$ 806
Retirement Services	$ 1,172	$ 981	$ 749
Corporate and Other	—	—	57
Consolidated other liability costs	$ 1,172	$ 981	$ 806

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

	Years ended December 31,		
(In millions)	2019	2018	2017
GAAP policy and other operating expenses	$ 744	$ 626	$ 672
Interest expense	(67)	(57)	(16)
Policy acquisition expenses, net of deferrals	(256)	(233)	(237)
Integration, restructuring and other non-operating expenses	(70)	(22)	(68)
Stock compensation expenses	(12)	(11)	(33)
ACRA noncontrolling interest	(5)	—	—
Total adjustments to arrive at operating expenses	(410)	(323)	(354)
Operating expenses	$ 334	$ 303	$ 318
Retirement Services	$ 266	$ 242	$ 212
Corporate and Other	68	61	106
Consolidated operating expenses	$ 334	$ 303	$ 318

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

	December 31,	
(In millions)	2019	2018
Total investments, including related parties	$ 129,845	$ 107,632
Derivative assets	(2,888)	(1,043)
Cash and cash equivalents (including restricted cash)	4,639	3,403
Accrued investment income	807	682
Payables for collateral on derivatives	(2,743)	(969)
Reinsurance funds withheld and modified coinsurance	(1,440)	223
VIE and VOE assets, liabilities and noncontrolling interest	730	718
Unrealized (gains) losses	(4,095)	808
Ceded policy loans	(235)	(281)
Net investment receivables (payables)	(57)	(139)
ACRA noncontrolling interest	(7,077)	—
Total adjustments to arrive at invested assets	(12,359)	3,402
Net invested assets	$ 117,486	$ 111,034

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

	December 31,	
(In millions)	2019	2018
Investment funds, including related parties and VIEs	$ 4,300	$ 3,559
Nonredeemable preferred stock included in equity securities	78	—
CLO equities included in trading securities	405	125
Investment funds within funds withheld at interest	807	660
Royalties and other assets included in other investments	66	71
Net assets of the VIE, excluding investment funds	1	50
Unrealized (gains) losses and other adjustments	8	27
ACRA noncontrolling interest	(79)	—
Total adjustments to arrive at alternative investments	1,286	933
Net alternative investments	$ 5,586	$ 4,492

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

	December 31,	
(In millions)	2019	2018
Total liabilities	$ 132,734	$ 117,229
Short-term debt	(475)	—
Long-term debt	(992)	(991)
Derivative liabilities	(97)	(85)
Payables for collateral on derivatives and securities to repurchase	(3,255)	(969)
Funds withheld liability	(408)	(721)
Other liabilities	(1,181)	(889)
Reinsurance ceded receivables	(4,863)	(5,534)
Policy loans ceded	(235)	(281)
ACRA noncontrolling interest	(6,574)	—
Other	(2)	(27)
Total adjustments to arrive at reserve liabilities	(18,082)	(9,497)
Net reserve liabilities	$ 114,652	$ 107,732

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 December 31, 2019 was $77.1 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, 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 Facility, which was undrawn as of December 31, 2019 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. 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 each of December 31, 2019 and 2018, approximately 78% of our deferred annuity liabilities were subject to penalty upon surrender. In addition, as of December 31, 2019 and 2018, approximately 64% and 65%, respectively, of policies contained MVAs that may also have the effect of limiting early withdrawals if interest rates increase. 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 December 31, 2019 and 2018, we had $475 million and $0 million 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 December 31, 2019 and 2018, we had funding agreements outstanding with the FHLB in the aggregate principal amount of $1.2 billion and $926 million, 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 December 31, 2019, the total maximum borrowings under the FHLB facility were limited to $19.5 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 December 31, 2019 we had the ability to draw up to a total of approximately $1.9 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.

Cash Flows

Our cash flows were as follows:

	Years ended December 31,		
(In millions)	2019	2018	2017
Net income	$ 2,185	$ 1,053	$ 1,358
Payment at inception of reinsurance agreements, net	—	(394)	—
Non-cash revenues and expenses	471	2,215	1,812
Net cash provided by operating activities	2,656	2,874	3,170
Sales, maturities and repayments of investments	17,776	17,069	17,893
Purchases of investments	(27,687)	(24,852)	(24,165)
Deconsolidation of Athora Holding Ltd.	—	(296)	—
Other investing activities	(45)	(94)	503
Net cash used in investing activities	(9,956)	(8,173)	(5,769)
Deposits on investment-type policies and contracts	11,569	10,262	9,056
Withdrawals on investment-type policies and contracts	(6,548)	(6,205)	(4,843)
Net change in cash collateral posted for derivative transactions and securities to repurchase	2,286	(1,354)	940
Net proceeds and repayment of debt	475	998	—
Issuance of preferred stock, net of expenses	1,172	—	—
Preferred stock dividends	(36)	—	—
Repurchase of common stock	(832)	(105)	(10)
Subsidiary issuance of equity interests to noncontrolling interests	575	—	—
Other financing activities	(124)	111	(95)
Net cash provided by financing activities	8,537	3,707	5,048
Effect of exchange rate changes on cash and cash equivalents	—	—	32
Net increase (decrease) in cash and cash equivalents[1]	$ 1,237	$ (1,592)	$ 2,481

[1] *Includes cash and cash equivalents, restricted cash, and cash and cash equivalents of consolidated VIEs*

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 $2.7 billion, $2.9 billion and $3.2 billion for the years ended December 31, 2019, 2018 and 2017, respectively. The decrease in cash provided by operating activities for the year ended December 31, 2019 compared to 2018 was primarily driven by lower cash received on PRT premiums, partially offset by an increase in net investment income reflecting an increase in our investment portfolio, the 2018 ceding commissions related to the Voya and Lincoln reinsurance transactions and higher commissions in 2018 compared to 2019 related to higher 2018 retail sales. The increase in cash provided by operating activities for the year ended December 31, 2018 compared to 2017 was primarily driven by the ceding commissions related to the Voya and Lincoln reinsurance transactions, higher tax refunds in 2017 and higher commissions due to strong retail sales, partially offset by an increase in net investment income reflecting an increase in our investment portfolio and an increase in PRT premiums.

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 $10.0 billion, $8.2 billion and $5.8 billion for the years ended December 31, 2019, 2018 and 2017, respectively. The change in cash used in investing activities for the year ended December 31, 2019 compared to 2018 was primarily attributed to the purchase of investments related to the increase in deposits over liability outflows, the deconsolidation of AGER Bermuda Holding Ltd. and its subsidiaries and the reinvestment of earnings. The increase in cash used from investing activities for the year ended December 31, 2018 compared to 2017 was primarily attributed to the purchase of investments related to the increase in deposits over liability outflows, the investment of proceeds from our debt issuance, the deconsolidation of AGER Bermuda Holding Ltd. and its subsidiaries and the reinvestment of earnings.

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 and repayments of outstanding borrowings. Our financing activities provided cash flows totaling $8.5 billion, $3.7 billion and $5.0 billion for the years ended December 31, 2019, 2018 and 2017, respectively. The change in cash provided from financing activities for the year ended December 31, 2019 compared to 2018 was primarily attributed to the change in cash collateral posted for derivative transactions and securities to repurchase driven by favorable equity market performance in 2019, proceeds from the issuance of preferred stock, higher investment-type deposits from retail, flow reinsurance and funding agreement deposits, subsidiary issuance of equity shares related to the sale of ACRA shares to ADIP and issuance of short-term debt, partially offset by 2018 proceeds from the issuance of debt and the repurchase of common stock in 2019. The change in cash provided from financing activities for the year ended December 31, 2018 compared to 2017 was primarily attributed to the change in cash collateral posted for derivative transactions and lower funding agreement issuances in 2018, partially offset by proceeds from the issuance of debt.

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 the approval of the appropriate regulator is required 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 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. As of December 31, 2019 and 2018, ALRe was permitted to dividend or distribute up to $8.1 billion and $5.9 billion, respectively.

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 Facility or by pursuing future issuances of debt or equity securities to third-party investors. See *Note 9 – Debt* to the consolidated financial statements for more information regarding our Credit Facility. However, such additional funding may not be available on terms favorable to us or at all, depending on our financial condition, results of operations or prevailing market conditions. In addition, certain covenants in our Credit Facility prohibit us from maintaining debt in excess of specified thresholds, which may limit our ability to pursue future issuances of debt. Specifically, our Credit Facility prohibits us from permitting the Consolidated Debt to Capitalization Ratio (as such term is defined in the Credit Facility) to exceed 35% as of the end of any quarter. 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.

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 10 – Equity* to the 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 December 31, 2019 and 2018, the revolving note payable had an outstanding balance of $38 million and $105 million, respectively.

Use of Captives

While our business strategy does not involve the use of captives, as a result of the Aviva USA acquisition, we acquired a captive reinsurer that was formed in 2011 and domiciled in the state of Vermont and we ceded certain liabilities to this captive reinsurer. The statutory reserves of the affiliated captive reinsurer are supported by a combination of funds withheld receivable assets and letters of credit issued by an unaffiliated financial institution. The reinsurance activities within the captive reinsurer are eliminated in consolidation. As discussed in *Note 13 – Statutory Requirements* to the consolidated financial statements, a permitted practice of the state of Vermont allows the captive to include issued and outstanding letters of credit in the amount of $137 million and $153 million as of December 31, 2019 and 2018, respectively, as admitted assets in its statutory financial statements.

The NAIC and certain state insurance departments have scrutinized insurance companies' use of affiliated captive reinsurers. It is uncertain what, if any, regulatory changes will result from this heightened scrutiny. A potential outcome, although not considered likely, is the prohibition on the continued use of captive reinsurance subsidiaries. If the use of existing captive reinsurance subsidiaries were discontinued, we would likely incur early termination fees with respect to the financing structure and diminished statutory capital position. The effect of potential regulatory changes regarding the use of captives on our consolidated financial condition and results of operations, although believed unlikely to be material, is uncertain at this time.

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. During 2018, AHL contributed its wholly owned subsidiary, Athene USA, to ALRe. ALRe adheres to BMA regulatory capital requirements to maintain statutory capital and surplus to meet the MMS and maintain minimum 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, provides us the opportunity to take advantage of market dislocations as they arise.

Repurchase of Securities

Share Repurchase Program

In the fourth quarter of 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 common shares. In 2019, our board of directors has 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 19.9 million Class A common shares for $827 million during the year ended December 31, 2019. As of February 20, 2020, we have repurchased, in the aggregate, 22.4 million Class A common shares for $927 million and have $640 million of repurchase authorization remaining.

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

Balance Sheet Arrangements

Contractual Obligations

The following table summarizes estimated future payments on our contractual obligations as of December 31, 2019:

	Payments Due by Period				
(In millions)	Total	2020	2021-2022	2023-2024	2025 and thereafter
Interest sensitive contract liabilities	$ 102,745	$ 9,256	$ 21,800	$ 18,489	$ 53,200
Future policy benefits	23,330	459	895	958	21,018
Other policy claims and benefits	138	138	—	—	—
Dividends payable to policyholders	113	5	10	9	89
Short-term debt[1]	479	479	—	—	—
Long-term debt[1]	1,351	41	83	83	1,144
Total	$ 128,156	$ 10,378	$ 22,788	$ 19,539	$ 75,451

[1] *The obligations for short- and long-term debt payments include contractual maturities of principal and estimated future interest payments based on the terms of the debt agreement, as described in Note 9 – Debt to the consolidated financial statements.*

We also have other obligations related to collateral on derivatives, investment fund commitments and funds withheld liabilities which have not been included in the above table as the timing and amount of each of the return on the collateral, the fulfillment of the commitments and the funds withheld liabilities are uncertain. See *Note 15 – Commitments and Contingencies* to the consolidated financial statements for further discussion on the investment fund commitments.

Other

In the normal course of business, we invest in various investment funds which are considered VIEs, and we consolidate a VIE when we are considered the primary beneficiary of the entity. For further discussion of our involvement with VIEs, see *Note 4 – Variable Interest Entities* to the consolidated financial statements.

Off Balance Sheet Arrangements

None.

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. The following summary of our critical accounting estimates is intended to enhance one's ability to assess our financial condition and results of operations and the potential volatility due to changes in estimates.

Investments

We are responsible for the fair value measurement of certain investments presented in our consolidated financial statements. We perform regular analysis and review of our valuation techniques, assumptions and inputs utilized in determining fair value to evaluate if the valuation approaches are appropriate and consistently applied, and the various assumptions are reasonable. We also perform quantitative and qualitative analysis and review of the information and prices received from commercial pricing services and broker-dealers, to verify it represents a reasonable estimate of the fair value of each investment. In addition, we utilize both internally-developed and commercially-available cash flow models to analyze the reasonableness of fair values utilizing credit spread and other market assumptions, where appropriate. For investment funds, we typically recognize our investment, including those for which we have elected the fair value option, based on net asset value information provided by the general partner or related asset manager. For a discussion of our investment funds for which we have elected the fair value option, see *Note 5 – Fair Value* to the consolidated financial statements.

Valuation of Fixed Maturity and Equity Securities

The following table presents the fair value of fixed maturity and equity securities, including those with related parties and those held by consolidated VIEs, by pricing source and fair value hierarchy:

	December 31, 2019			
(In millions)	Total	Level 1	Level 2	Level 3
Fixed maturity securities				
AFS securities				
Priced via commercial pricing services	$ 29,377	$ 36	$ 29,329	$ 12
Priced via independent broker-dealer quotations	45,037	—	41,183	3,854
Priced via other methods	764	—	—	764
Trading securities				
Priced via commercial pricing services	240	—	240	—
Priced via independent broker-dealer quotations	2,399	8	1,784	607
Priced via other methods	200	—	—	200
Trading securities of consolidated VIEs	16	—	—	16
Total fixed maturity securities including related party	78,033	44	72,536	5,453
Equity securities				
Priced via commercial pricing services	243	43	200	—
Priced via independent broker-dealer quotations	61	—	1	60
Priced via other methods	1	—	—	1
Equity securities of consolidated VIEs	6	—	—	6
Total equity securities including related party	311	43	201	67
Total fixed maturity and equity securities including related party	$ 78,344	$ 87	$ 72,737	$ 5,520
Percent of total	100.0%	0.1%	92.9%	7.0%

We measure the fair value of our securities based on assumptions used by market participants in pricing the assets, which may include inherent risk, restrictions on the sale or use of an asset, or nonperformance risk. The estimate of fair value is the price that would be received to sell a security in an orderly transaction between market participants in the principal market, or the most advantageous market in the absence of a principal market, for that security. Market participants are assumed to be independent, knowledgeable, able and willing to transact an exchange while not under duress. The valuation of securities involves considerable judgment, is subject to considerable variability and is revised as additional information becomes available. As such, changes in, or deviations from, the assumptions used in such valuations can significantly affect our consolidated financial statements. Financial markets are susceptible to severe events evidenced by rapid depreciation in security values accompanied by a reduction in asset liquidity. Our ability to sell securities, or the price ultimately realized upon the sale of securities, depends upon the demand and liquidity in the market and increases the use of judgment in determining the estimated fair value of certain securities. Accordingly, estimates of fair value are not necessarily indicative of the amounts that could be realized in a current or future market exchange.

For fixed maturity securities, we obtain the fair values, when available, based on quoted prices in active markets that are regularly and readily obtainable. Generally, these are liquid securities and the valuation does not require significant management judgment. When quoted prices in active markets are not available, fair value is based on market standard valuation techniques, giving priority to observable inputs. We obtain the fair value for most marketable bonds without an active market from several commercial pricing services. The pricing services incorporate a variety of market observable information in their valuation techniques, including benchmark yields, broker-dealer quotes, credit quality, issuer spreads, bids, offers, and other reference data. For certain fixed maturity securities without an active market, an internally-developed discounted cash flow or other approach is utilized to calculate the fair value. A discount rate is used, which adjusts a market comparable base rate for securities with similar characteristics for credit spread, market illiquidity or other adjustments. The fair value of privately placed fixed maturity securities are 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, which considers 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.

For equity securities, we obtain the fair value, when available, based on quoted market prices. Other equity securities, typically private equities or equity securities not traded on an exchange, are valued based on other sources, such as commercial pricing services or brokers.

Other-Than-Temporary Impairments

The evaluation of securities for OTTIs is a quantitative and qualitative process done on a case-by-case basis, 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.

We review and analyze our securities on an ongoing basis for changes in market interest rates, credit issues, changes in business climate, management changes, litigation, government actions, and other similar factors. Indicators of impairment may include changes in the issuers' credit ratings and outlook, the frequency of late payments, pricing levels, key financial ratios, financial statements, revenue forecasts and cash flow projections. We consider relevant facts and circumstances in evaluating whether a credit or interest rate-related impairment of a security is other-than-temporary. Relevant facts and circumstances include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in fair value; (3) the issuer's financial position and access to capital; and (4) for fixed maturity securities, our intent to sell a security or whether it is more-likely-than-not we will be required to sell the security before the recovery of its cost or amortized cost which, in some cases, may extend to maturity and our ability and intent to hold the security for a period of time that allows for the recovery in value. An extended and severe unrealized loss position on a fixed maturity security may not have any impact on the ability of the issuer to service all scheduled principal and interest payments. Accordingly, such an unrealized loss position may not impact our evaluation of recoverability of all contractual cash flows or the ability to recover an amount at least equal to the security's cost or amortized cost based on the present value of the expected future cash flows to be collected. To the extent we determine a security is deemed to be other-than-temporarily impaired, an impairment loss is recognized.

The recognition of impairment losses on fixed maturity securities is dependent on the facts and circumstances related to the specific security. If 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 cost or amortized cost, less any recorded credit loss, we recognize a loss in other-than-temporary impairment losses on the consolidated statements of income for the difference between cost or amortized cost and fair value. If neither of these two conditions exists, then the recognition of the loss is bifurcated and we recognize the credit loss portion in other-than-temporary impairment losses on the consolidated statements of income and the non-credit loss portion in AOCI on the consolidated balance sheets.

We estimate the amount of the credit loss component of a fixed maturity security impairment as the difference between amortized cost and the present value of the expected cash flows of the security. The present value is determined using estimated cash flows discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete an asset-backed or floating-rate security. The techniques and assumptions for establishing the estimated cash flows vary depending on the type of security. 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. 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.

Future Policy Benefits

The future policy benefit liabilities associated with long duration contracts include term and whole-life products, accident and health, disability, and deferred and immediate annuities with life contingencies. Liabilities for non-participating long duration contracts are established using accepted actuarial valuation methods which require us to make certain assumptions regarding expenses, investment yields, mortality, morbidity, and persistency, with a provision for adverse deviation, at the date of issue or acquisition. As of December 31, 2019, the reserve investment yield assumptions for non-participating contracts range from 3.31% to 5.44% and are specific to our expected earned rate on the asset portfolio supporting the reserves. We base other key assumptions, such as mortality and morbidity, on industry standard data adjusted to align with actual company experience, if necessary. Premium deficiency tests are performed periodically using current assumptions, without provisions for adverse deviation, in order to test the appropriateness of the established reserves. If the reserves using current assumptions are greater than the existing reserves, the excess is recorded and the initial assumptions are revised.

Liabilities for Guaranteed Living Withdrawal Benefits and Guaranteed Minimum Death Benefits

We issue and reinsure deferred annuity contracts which contain GLWB and GMDB riders. We establish future policy benefits for GLWB and GMDB by estimating the expected value of withdrawal and death benefits in excess of the projected account balance. We recognize the excess proportionally over the accumulation period based on total actual and expected assessments. The methods we use to estimate the liabilities have assumptions about policyholder behavior, which includes lapses, withdrawals and utilization of the benefit riders; mortality; and market conditions affecting the account balance growth.

Projected policyholder lapse and withdrawal behavior assumptions are set in one of two ways. For certain blocks of business, this behavior is a function of our predictive analytics model which considers various observable inputs. For the remaining blocks of business, these assumptions are set at the product level by grouping individual policies sharing similar features and guarantees and reviewed periodically against experience. Base lapse rates consider the level of surrender charges and are dynamically adjusted based on the level of current interest rates relative to the guaranteed rates and the amount by which any rider guarantees are in a net positive position. Rider utilization assumptions consider the number and timing of policyholders electing the riders. We track and update this assumption as experience emerges. Mortality assumptions are set at the product level and generally based on standard industry tables, adjusted for historical experience and a provision for mortality improvement. Projected guaranteed benefit amounts in excess of the underlying account balances are considered over a range of scenarios in order to capture our exposure to the guaranteed withdrawal and death benefits.

The assessments used to accrue liabilities are based on interest margins, rider charges, surrender charges and realized gains (losses). As such, future reserve changes are sensitive to changes in investment results and the impacts of shadow adjustments, which represent the impact of assuming unrealized gains (losses) are realized in future periods. As of December 31, 2019, the GLWB and GMDB liability balance, including the impacts of shadow adjustments, totaled $4.3 billion. The increase (decrease) to the GLWB and GMDB liability balance, including the impacts of shadow adjustments from hypothetical changes in projected assessments, changes in the discount rate and annual equity growth is summarized as follows:

(In millions)		December 31, 2019
+10% assessments	$	(144)
–10% assessments		160
+100 bps discount rate		130
–100 bps discount rate		(175)
1% higher annual equity growth		(49)
1% lower annual equity growth		46

Derivatives

Valuation of Embedded Derivatives on FIAs

We issue and reinsure products, primarily FIA products, or purchase investments that contain embedded derivatives. If we determine the embedded derivative has economic characteristics not clearly and closely related to the economic characteristics of the host contract, and a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is bifurcated from the host contract and accounted for separately, unless the fair value option is elected on the host contract. Under the fair value option, bifurcation of the embedded derivative is not necessary as the entire contract is carried at fair value with all related gains and losses recognized in investment related gains (losses) on the consolidated statements of income. Embedded derivatives are carried on the consolidated balance sheets at fair value in the same line item as the host contract.

FIA and indexed universal life insurance contracts allow the policyholder to elect a fixed interest rate return or an equity market component for which interest credited is based on the performance of certain stock market indices. The equity market option is an embedded derivative, similar to a call option. The benefit reserve is equal to the sum of the fair value of the embedded derivative and the host (or guaranteed) component of the contracts. The fair value of the embedded derivatives is computed as the present value of benefits attributable to the excess of the projected policy contract values over the projected minimum guaranteed contract values. The projections of policy contract values are based on assumptions for future policy growth, which include assumptions for expected index credits on the next policy anniversary date, future equity option costs, volatility, interest rates, and policyholder behavior. The projections of minimum guaranteed contract values include the same assumptions for policyholder behavior as were used to project policy contract values. The embedded derivative cash flows are discounted using a rate that reflects our own credit rating. The host contract is established at contract inception as the initial account value less the initial fair value of the embedded derivative and accreted over the policy's life. The host contract accretion rate is updated each quarter so that the present value of actual and expected guaranteed cash flows is equal to the initial host value. Changes in the fair value of embedded derivatives associated with FIAs and indexed universal life insurance contracts are reflected in interest sensitive contract benefits on the consolidated statements of income.

In general, the change in the fair value of the embedded derivatives will not directly correspond to the change in fair value of the hedging derivative assets. The derivatives are intended to hedge the index credits expected to be granted at the end of the current term. The options valued in the embedded derivatives represent the rights of the policyholder to receive index credits over the entire period the FIAs are expected to be in force, which are typically much longer than the current term of the options. From an economic basis we believe it is suitable to hedge with options that align with index terms of our FIA products because policyholder accounts are credited with index performance at the end of each index term. However, because the value of an embedded derivative in an FIA contract is longer-dated, there is a duration mismatch which may lead to differences in the recognition of income and expense for accounting purposes.

A significant assumption in determining policy liabilities for FIAs is the vector of rates used to discount the excess projected contract values. The change in risk free rates is expected to drive most of the movement in the discount rates between periods. Changes to credit spreads for a given credit rating as well as any change to our credit rating requiring a revised level of nonperformance risk would also be factors in the changes to the discount rate. If the discount rates used to discount the excess projected contract values were to fluctuate, there would be a resulting change in reserves for FIAs recorded through the consolidated statements of income.

As of December 31, 2019, we had embedded derivative liabilities classified as Level 3 in the fair value hierarchy of $10.9 billion. The increase (decrease) to the embedded derivatives on FIA products from hypothetical changes in discount rates is summarized as follows:

(In millions)	December 31, 2019
+100 bps discount rate	$ (904)
–100 bps discount rate	1,038

However, these estimated effects do not take into account potential changes in other variables, such as equity price levels and market volatility, which can also contribute significantly to changes in carrying values. Therefore, the quantitative impact presented in the table above does not necessarily correspond to the ultimate impact on the consolidated financial statements. In determining the ranges, we have considered current market conditions, as well as the market level of discount rates that can reasonably be anticipated over the near-term. For additional information regarding sensitivities to interest rate risk and public equity risk, see *Item 7A. Quantitative and Qualitative Disclosures About Market Risks*.

Valuation of Embedded Derivatives in Modco or Funds Withheld

Reinsurance agreements written on a funds withheld or modco basis contain embedded derivatives. The right to receive or obligation to pay the total return on the assets supporting the funds withheld at interest or funds withheld liability, respectively, represents a total return swap with a floating rate leg. The fair value of the embedded derivatives on funds withheld and modco agreements is computed as the unrealized gain (loss) on the underlying assets and is recognized in funds withheld at interest and funds withheld liability on the consolidated balance sheets for assumed and ceded agreements, respectively. The change in the fair value of the embedded derivatives is recorded in investment related gains (losses) on the consolidated statements of income.

Valuation of Derivative Contracts

Derivative contracts can be exchange-traded or OTC. Exchange-traded derivative contracts (for example, futures) typically fall within Level 1 of the fair value hierarchy depending on trading activity. OTC derivative contracts (for example, swaps) are valued using valuation models or an income approach using third-party broker-dealer 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 derivative liabilities. The majority of our derivatives trade in liquid markets; therefore, the model inputs and model selection does not involve significant judgment. As of December 31, 2019, we had derivative contract assets classified in the fair value hierarchy as Level 1 of $10 million, Level 2 of $2.9 billion and Level 3 of $0 million. As of December 31, 2019, we had derivative contract liabilities classified in the fair value hierarchy as Level 1 of $1 million, Level 2 of $93 million and Level 3 of $3 million.

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

Costs related directly to the successful acquisition of new or renewal insurance or investment contracts are deferred to the extent they are recoverable from future premiums or gross profits. These costs consist of commissions and policy issuance costs, as well as sales inducements credited to policyholder account balances. We perform periodic tests, including at issuance, to determine if the deferred costs are recoverable. If it is determined that the deferred costs are not recoverable, we record a cumulative charge to the current period.

Deferred costs related to universal life-type policies and investment contracts with significant revenue streams from sources other than investment of the policyholder funds are amortized over the lives of the policies, based upon the proportion of the present value of actual and expected deferred costs to the present value of actual and expected gross profits to be earned over the life of the policies. Gross profits include investment spread margins, surrender charge income, policy administration, changes in the GLWB and GMDB reserves, and realized gains (losses) on investments. Current period gross profits for FIAs also include the change in fair value of both freestanding and embedded derivatives.

Our estimates of expected gross profits and margins are based on assumptions using accepted actuarial methods related to policyholder behavior, including lapses and the use of benefit riders, mortality, yields on investments supporting the liabilities, future interest credited amounts (including indexed related credited amounts on fixed indexed annuity products), and other policy changes as applicable, and the level of expenses necessary to maintain the policies over their expected lives. Each reporting period, we update estimated gross profits with actual gross profits as part of the amortization process. We also periodically revise the key assumptions used in the amortization calculation which results in revisions to the estimated future gross profits. The effects of changes in assumptions are recorded as unlocking in the period in which the changes are made.

We establish VOBA for blocks of insurance contracts acquired through the acquisition of insurance entities. The fair value of the liabilities purchased is determined using market participant assumptions at the time of acquisition and represents the amount an acquirer would expect to be compensated to assume the contracts. We record the fair value of the liabilities assumed in two components: reserves and VOBA. Reserves are established using our best estimate assumptions, as previously discussed in future policy benefits. VOBA is the difference between the fair value of the liabilities and the reserves. VOBA can be either positive or negative. Any negative VOBA is recorded to the same financial statement line on the consolidated balance sheets as the associated reserves. Positive VOBA is recorded in DAC, DSI and VOBA on the consolidated balance sheets.

VOBA associated with immediate annuity contracts classified as long-duration contracts is amortized at a constant rate in relation to net policyholder liabilities. For universal life-type policies and investment contracts with significant revenue streams from sources other than investment of policyholder funds, VOBA is amortized in relation to the present value of estimated gross profits using methods consistent with those used to amortize DAC and DSI. Negative VOBA is amortized at a constant rate in relation to applicable net policyholder liabilities.

Estimated future gross profits vary based on a number of factors but are typically most sensitive to changes in investment spread margins, which are the most significant component of gross profits. If estimated gross profits for all future years on business in force were to change, including the impacts of shadow adjustments, there would be a resulting increase or decrease to the balances of DAC, DSI and VOBA recorded as an increase or decrease to amortization of DAC, DSI, and VOBA on the consolidated statements of income or AOCI.

Actual gross profits will depend on actual margins, including the changes in the value of embedded derivatives. The most sensitive assumption in determining the value of the embedded derivative is the vector of rates used to discount the excess projected contract values. If the discount rates used to discount the excess projected contract values were to change, there would be a resulting increase or decrease to the balances of DAC, DSI and VOBA recorded as an increase or decrease in amortization of DAC, DSI, and VOBA on the consolidated statements of income.

As of December 31, 2019, DAC, DSI and VOBA totaled $5.0 billion. The increases (decreases) to DAC, DSI and VOBA from hypothetical changes in estimated future gross profits and the embedded derivative discount rate are summarized as follows:

	December 31, 2019			
(In millions)	DAC	DSI	VOBA	Total
+10% estimated future gross profits	$ 130	$ 30	$ 54	$ 214
−10% estimated future gross profits	(150)	(34)	(60)	(244)
+100 bps discount rate	(149)	(53)	(39)	(241)
−100 bps discount rate	173	63	45	281

Consolidation

We consolidate all entities in which we hold a controlling financial interest as of the financial statement date whether through a majority voting interest or otherwise, including those investment funds that meet the definition of a VIE in which we are determined to be the primary beneficiary. If we are not the primary beneficiary, the general partner or another limited partner may consolidate the investment fund, and we record the investment as an equity method investment. See *Note 4 – Variable Interest Entities* to the consolidated financial statements.

The determination as to whether an entity qualifies as a VIE depends on the underlying facts and circumstances surrounding each entity. Our assessment of whether an entity is a VIE may require significant judgment. Those judgments may include, but are not limited to: (1) determining whether the total equity investment at risk is sufficient to permit the entity to finance its activities without additional subordinated financial support; (2) evaluating whether the holders of the equity investment at risk, as a group, lack any characteristics of a controlling financial interest, such as the obligation to absorb losses, right to receive expected residual returns or the ability to make decisions that have a significant effect on the success of the entity; and (3) determining whether the equity investors' voting rights are not proportional to their economic rights, and whether substantially all of the activities of the entity either involve or are conducted on behalf of an investor with disproportionately fewer voting rights.

Judgments are also made in determining whether we, as a variable interest holder, are required to consolidate the VIE as its primary beneficiary. Determining whether we are the primary beneficiary may require significant judgment. Generally, the primary beneficiary is the party that has both the power to direct the activities that most significantly impact the VIE's economic performance and the right to receive benefits or obligation to absorb losses that could be potentially significant to the VIE. This analysis considers related party and de-facto agent relationships, as well as indirect interests we may hold in the entity being evaluated. For example, we may not be deemed to control the VIE; however, to the extent the controlling party is a related party or a de-facto agent, we perform an additional assessment to determine if substantially all of the activities of the VIE are conducted on our behalf and we are therefore the primary beneficiary. This assessment is primarily qualitative and focused on the relationship between us and the VIE being evaluated, but also includes an analysis of the VIE's economic impacts we receive. Additionally, in situations where the related parties share power or are under common control, we evaluate the nature of the relationship and activities of the parties involved to determine which party within the related-party group is most closely associated with the VIE and therefore required to consolidate.

Additionally, determining whether a VIE meets the criteria of an investment company is qualitative in nature and may involve significant judgment. The significance of this distinction relates to whether the investment fund retains the specialized accounting afforded investment companies.

To be deemed an investment company an entity must, at a minimum, meet the following fundamental criteria: (1) obtain funds from one or more investors and provides the investor(s) with defined investment management services, (2) commit to its investor(s) that its business purpose and only substantive activities are investing funds solely for returns from capital appreciation, investment income, or both, and (3) it or its affiliates do not obtain or have the objective of obtaining returns or benefits from an investee or its affiliates that are not normally attributable to ownership interests or that are other than capital appreciation or investment income.

If the three fundamental characteristics are met, we evaluate whether the entity possesses some or all of the following typical characteristics that are generally associated with an investment company: (1) has more than one investment, (2) has more than one investor, (3) has investors that are not related parties of the parent entity (if there is a parent) and the investment manager, (4) has ownership interests in the form of equity or partnership interests, and (5) manages substantially all of its investments on a fair value basis. Lacking one or more of these characteristics does not preclude an entity from being considered an investment company. All relevant facts and circumstances are taken into consideration in making a final determination.

Income Taxes

In determining our income taxes, management is required to interpret complex income tax laws and regulations. We are subject to examinations by federal, state, local and foreign income tax authorities that may give rise to different interpretations of these complex laws and regulations. Due to the nature of the examination process, it generally takes years before these examinations are completed and these matters are resolved. We recognize the tax benefit from an uncertain tax position only if it is more-likely-than-not that the tax position will be sustained on examination by the relevant taxing authorities based on the technical merits of our position. For those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. The aggregate amount of any additional income tax liabilities that may result from these examinations, if any, is not expected to have a material impact on our consolidated financial results. For more information regarding income taxes, see *Note 12 – Income Taxes* to the consolidated financial statements.

Accounting for income taxes involves numerous estimates and assumptions regarding various events and transactions based on management's judgment and interpretation of the laws and regulations enacted as of the reporting date. Deferred tax assets and liabilities resulting from temporary differences between the financial reporting and tax basis of assets and liabilities are measured at the balance sheet date using enacted tax rates expected to apply to taxable income in the years the temporary differences are expected to reverse. We routinely evaluate the likelihood of realizing the benefit of our deferred tax assets and may record a valuation allowance if, based on all available evidence, we determine that it is more-likely-than-not some portion of the tax benefit will not be realized. We have deferred tax assets primarily related to reserve valuation differences, net operating losses, DAC and employee benefit plans.

On a quarterly basis, we test the value of deferred tax assets for impairment at the taxpaying-component level within each tax jurisdiction. Significant judgment and estimates are required in determining whether valuation allowances should be established as well as the amount of such allowances. When making such determination, consideration is given to, among other things, the following:

- whether sufficient taxable income exists within the allowed carryback or carryforward periods;
- whether future reversals of existing taxable temporary differences will occur, including any tax planning strategies that could be utilized;
- nature or character (e.g., ordinary vs. capital) of the deferred tax assets and liabilities; and
- whether future taxable income exclusive of reversing temporary differences and carryforwards exists.

We may be required to change the provision for income taxes in certain circumstances. Examples of such circumstances include when the ultimate deductibility of certain items is challenged by taxing authorities, when it becomes clear that certain items will not be challenged, when forecasted results used in determining valuation allowances on deferred tax assets significantly change, or when receipt of new information indicates the need for adjustment in valuation allowances. Additionally, future events such as changes in tax legislation could have an impact on the provision for income tax and the effective tax rate. Any such changes could significantly affect the amounts reported in our consolidated financial statements in the period to which these changes apply.

We expect that earnings from AHL's U.S. subsidiaries will not be subject to U.S. dividend withholding tax under the UK Treaty. Any dividends remitted to AHL from ALRe are not subject to withholding tax.

Impact of Recent Accounting Pronouncements

For a discussion of new accounting pronouncements affecting us, see *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* to the consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risks

Risk Management Framework

The function of our risk management framework is to identify, assess and prioritize risks to ensure that both senior management and the board of directors understand and can manage our risk profile. The processes supporting risk management are designed to ensure that our risk profile is consistent with our stated risk appetite and that we maintain sufficient capital to support our corporate plan, while meeting the requirements imposed by our policyholders, shareholders, and regulators. Risk management strives to enable us to maximize the value of our existing business platform to shareholders, preserve our ability to realize business and market opportunities under moderately stressful market conditions, and to withstand the impact of severely adverse events.

The risk management framework includes a governance committee structure that supports accountability in current risk-based decision making, and effective risk management. Governance committees are established at three levels: the board of directors, AHL management, and subsidiary management. We utilize a host of assessment tools to monitor and assess our risk profile, results of which are shared with senior management periodically at management level committees such as the management risk committee (MRC) and the management investment committee (MIC) and with the board of directors quarterly. Business management retains the primary responsibility for day-to-day management of risk.

Risk Management

The risk management team structure consists of an enterprise risk management (ERM) team, a derivatives trading team and an asset risk team. The risk management team is led by our Chief Risk Officer, who reports to the chair of the AHL Risk Committee. Our risk management team is comprised of approximately 35 dedicated, full-time employees.

Asset and Liability Management

Asset and liability risk management is a joint effort that spans business management and the entire risk management team. Processes established to analyze and manage the risks of our assets and liabilities include but are not limited to:

- analyzing our liabilities to ascertain their sensitivity to behavioral variations and changes in market conditions and actuarial assumptions;
- analyzing interest rate risk, cash flow mismatch, and liquidity risk management;
- performing scenario and stress analyses to examine their impacts on capital and earnings;
- performing cash flow testing and capital modeling;
- modeling the values of the derivatives embedded in our policy liabilities so that they can be effectively hedged;
- hedging unwanted risks, including from embedded derivatives, interest rate exposures and currency risks;
- reviewing our corporate plan and strategic objectives, and identifying prospective risks to those objectives under normal and stressed economic, behavioral and actuarial conditions; and
- providing appropriate risk reports that show consolidated risk exposures from assets and liabilities as well as the economic consequences of stress events and scenarios.

Market Risk and Management of Market Risk Exposures

Market risk is the risk of incurring losses due to adverse changes in market rates and prices. Included in market risk are potential losses in value due to credit and counterparty risk, interest rate risk, currency risk, commodity price risk, equity price risk and inflation risk. We are primarily exposed to credit risk, interest rate risk, equity price risk and inflation risk.

Credit Risk and Counterparty Risk

In order to operate our business model, which is based on earning spread income, we must bear credit risk. However, as we assume credit risk through our investment, reinsurance and hedging activities, we endeavor to ensure that risk exposures remain diversified, that we are adequately compensated for the risks we assume and that the level of risk is consistent with our risk appetite and objectives.

Credit risk is a key risk taken in the asset portfolio, as the credit spread on our investments is what drives our spread income. We manage credit risk by avoiding idiosyncratic risk concentrations, understanding and managing our systematic exposure to economic and market conditions through stress testing, monitoring investment activity daily and distinguishing between price and default risk from credit exposures. Concentration and portfolio limits are designed to ensure that exposure to default and impairment risk is sufficiently modest so as to not represent a solvency risk to us, even in severe economic conditions.

The investment teams within Apollo, which manage substantially all of our fixed income assets, focus on in-depth, bottom-up portfolio construction, and disciplined risk management. Their approach to taking credit risk is formulated based on:

- a fundamental view on existing and potential opportunities at the security level;
- an assessment of the current risk/reward proposition for each market segment;
- identification of downside risks and assigning a probability for those risks; and
- establishing a plan for best execution of the investment action.

Item 7A. Quantitative and Qualitative Disclosures About Market Risks

A dedicated set of AHL risk managers, who are on-site with Apollo, monitor the asset risks to ensure that such risks are consistent with our risk appetite, standards for committing capital, and overall strategic objectives. Our risk management team is also a key contributor to the OTTI/credit impairment evaluation process.

In addition to credit-risk exposures from our investment portfolio, we are also exposed to credit risk from our counterparty exposures from our derivative hedging and reinsurance activities. Derivative counterparty risk is managed by trading on a collateralized basis with counterparties under International Swaps and Derivatives Association documents with a credit support annex having low or zero-dollar collateral thresholds.

We utilize reinsurance to mitigate risks that are inconsistent with our strategy or objectives. For example, we have reinsured much of the mortality risk we would otherwise have accumulated through our various acquisitions, allowing us to focus on our core annuity business. These reinsurance agreements expose us to the credit risk of our counterparties. We manage this risk to avoid counterparty risk concentrations through various mechanisms: utilization of reinsurance structures such as funds withheld or modco so as to retain ownership of the assets and limit counterparty risk to the cost of replacing the counterparty; diversification across counterparties; and when possible, novating policies to eliminate counterparty risk altogether.

Interest Rate Risk

Significant interest rate risk may arise from mismatches in the timing of cash flows from our assets and liabilities. Management of interest rate risk at the company-wide level, and at the various operating company levels, is one of the main risk management activities in which senior management engages.

Depending upon the materiality of the risk and our assessment of how we would perform across a spectrum of interest rate environments, we may seek to mitigate interest rate risk using on-balance-sheet strategies (portfolio management) or off-balance-sheet strategies (derivative hedges such as interest rate swaps and futures). We monitor ALM metrics (such as key-rate durations and convexity) and employ quarterly cash flow testing requirements across all of our insurance companies to assure the asset and liability portfolios are managed to maintain net interest rate exposures at levels that are consistent with our risk appetite. We have established a set of exposure and stress limits to communicate our risk tolerance and to ensure adherence to those risk tolerance levels. Risk management personnel and the MRC and MIC (together, management committees) are notified in the event that risk tolerance levels are exceeded. Depending on the specific risk threshold that is exceeded, the appropriate management committee then makes a decision as to what actions, if any, should be undertaken.

Active portfolio management is performed by the investment managers at Apollo, with direction from the management committees. ALM risk is also managed by the management committees. The performance of our investment portfolio managed by Apollo is reviewed periodically by the management committees and the board of directors. The management committees strive to improve returns to shareholders and protect policyholders, while dynamically managing the risk within our expectations.

Equity Risk

Our FIAs require us to make payments to policyholders that are dependent on the performance of equity market indices. We seek to minimize the equity risk from our liabilities by economically defeasing this equity exposure with granular, policy-level-based hedging. In addition, our investment portfolio can be invested in strategies involving public and private equity positions, though in general, we have limited appetite for passive, public equity investments.

The equity index hedging framework implemented is one of static and dynamic replication. Unique policy-level liability options are matched with static OTC options and residual risk arising from policyholder behavior and other trading constraints (for example minimum trade size) are managed dynamically by decomposing the risk of the portfolio (asset and liability positions) into market risk measures which are managed to pre-established risk limits. The portfolio risks are measured overnight and rebalanced daily to ensure that the risk profile remains within risk appetite. Valuation is done at the position level, and risks are aggregated and shown at the level of each underlying index. Risk measures that have term structure sensitivity, such as index volatility risk, and interest rate risk, are monitored and risk managed along the term structure.

We are also exposed to equity risk in our alternative investment portfolio. The form of those investments is typically a limited partnership interest in a fund. We currently target fund investments that have characteristics resembling fixed income investments versus those resembling pure equity investments, but as holders of partnership positions, our investments are generally held as equity positions. Alternative investments are comprised of several categories, including at the most liquid end of the spectrum "liquid strategies," (which is mostly exposure to publicly traded equities), followed by "differentiated investments", "credit funds", "private equity" and "real assets."

Our investment mandate in our alternative investment portfolio is inherently opportunistic. Each investment is examined and analyzed on its own merits to gain a full understanding of the risks present, and with a view toward determining likely return scenarios, including the ability to withstand stress in a downturn. We have a strong preference for alternative investments 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.

The alternative investment portfolio is monitored to ensure diversification across asset classes and strategy, and the portfolio's performance under stress scenarios is evaluated routinely as part of management and board reviews. Since alternative investments are marked-to-market on the balance sheet, risk analyses focus on potential changes in market value across a variety of market stresses.

Currency Risk

We manage our currency risk so as to maintain minimal exposure to currency fluctuations. We attempt to hedge completely the currency risk arising in our investment portfolio or FIA products. In general, we match currency exposure of assets and liabilities. When the currency denominations of the assets and liabilities do not match, we generally undertake hedging activities to eliminate or mitigate currency mismatch risk.

Inflation Risk

We manage our inflation risk so as to maintain minimal exposure to changes in purchasing power. In general, we attempt to match inflation exposure of assets and liabilities. When the inflation exposure profiles of assets and liabilities do not match, we generally undertake hedging activities to eliminate or mitigate inflation mismatch risk. We attempt to hedge the majority of inflation risk arising from the PRT business that we reinsure.

Scenario Analysis

We evaluate our exposure to market risk through internally defined modeling of our portfolio performance during times of economic stress. We manage our business, capital and liquidity needs to withstand stress scenarios and target capital we believe will maintain our current ratings in a moderate recession scenario and will allow us to continue to be rated investment grade under a substantially severe financial crisis akin to the Lehman scenario in 2008. In the recession scenario, we calibrate recessionary shocks to several key risk factors (including but not limited to, S&P 500, BBB corporate spreads, high yield corporate spreads and 2 year and 10 year U.S. Treasury yields) using data from the 1991, 2001, and 2008 recessions, and estimate mark to market impacts to the various sectors in our portfolio using regression analysis of their credit spreads to the key risk factors. In the Lehman scenario, we use credit spread and interest rate movements from the 2008–2009 period to estimate mark to market changes, and we use default probabilities from the same 2008-2009 period, along with stressed recovery and ratings migration rates, to estimate OTTI impacts. We review the impacts of our stress test analyses quarterly with management.

Sensitivities

Interest Rate Risk

We assess interest rate exposures for financial assets and financial liabilities using hypothetical stress tests and exposure analyses. Assuming all other factors are constant, if there was an immediate, parallel increase in interest rates of 25 basis points from levels as of December 31, 2019, we estimate a net decrease to our point-in-time pre-tax income from changes in the fair value of these financial instruments of $179 million. The net change in fair value for these financial instruments would directly impact the current period gross profits and assessments used in the calculations of DAC, DSI, and VOBA amortization and changes to rider reserves, resulting in an offsetting increase to our pre-tax income of $53 million. If there were a similar parallel increase in interest rates from levels as of December 31, 2018, we estimate a net decrease to our point-in-time pre-tax income from changes in the fair value of these financial instruments of $199 million with an additional decrease to pre-tax income of $23 million from DAC, DSI, and VOBA amortization and changes in rider reserves. The increase in the estimated impacts of the DAC, DSI and VOBA amortization and changes in rider reserves as of December 31, 2019 compared to December 31, 2018 is primarily driven by higher gross profits attributed to the favorable change in fair value of reinsurance assets. The financial instruments included in the sensitivity analysis are carried at fair value and changes in fair value are recognized in earnings. These financial instruments include derivative instruments, embedded derivatives and certain fixed maturity securities. The sensitivity analysis excludes those financial instruments carried at fair value for which changes in fair value are recognized in equity, such as AFS fixed maturity securities.

Assuming a 25 basis point increase in interest rates that persists for a 12-month period, the estimated impact to adjusted operating income would be an increase of approximately $30 – $35 million. This is driven by an increase in investment income from floating rate assets, offset by DAC, DSI, and VOBA amortization and rider reserve change, all calculated without regard to future changes to assumptions. We are unable to make forward-looking estimates regarding the impact on net income of changes in interest rates that persist for a period of time as a result of an inability to determine how such changes will affect certain of the items that we characterize as "non-operating adjustments" in our reconciliation between net income available to AHL common shareholders and adjusted operating income available to common shareholders. See *Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations-Results of Operations by Segment* for the reconciliation of net income available to AHL common shareholders to adjusted operating income available to common shareholders. The impact of changing rates on these non-operating adjustments is likely to be significant. See above for a discussion regarding the estimated impact on net income of an immediate, parallel increase in interest rates of 25 basis points from levels as of December 31, 2019, which discussion encompasses the impact of such an increase on certain of the non-operating adjustment items.

The models used to estimate the impact of a 25 basis point change in market interest rates incorporate numerous assumptions, require significant estimates and assume an immediate change in interest rates without any discretionary management action to counteract such a change. Consequently, potential changes in our valuations indicated by these simulations will likely be different from the actual changes experienced under any given interest rate scenarios and these differences may be material. Because we actively manage our assets and liabilities, the net exposure to interest rates can vary over time. However, any such decreases in the fair value of fixed maturity securities, unless related to credit concerns of the issuer requiring recognition of an OTTI, would generally be realized only if we were required to sell such securities at losses to meet liquidity needs.

Public Equity Risk

We assess public equity market risk for financial assets and financial liabilities using hypothetical stress tests and exposure analyses. Assuming all other factors are constant, if there were a decline in public equity market prices of 10% as of December 31, 2019, we estimate a net decrease to our pre-tax income from changes in the fair value of these financial instruments of $415 million. The net change in fair value for these financial instruments would directly impact the current period gross profits and assessments used in the calculations of DAC, DSI, and VOBA amortization and changes to rider reserves, resulting in an offsetting increase to our pre-tax income of $167 million. As of December 31, 2018, we estimate that a decline in public equity market prices of 10% would cause a net decrease to our pre-tax income from changes in the fair value of these financial instruments of $214 million with an offsetting increase to our pre-tax income of $74 million from DAC, DSI, and VOBA amortization and changes in rider reserves. The decrease in the estimated outcome of the sensitivity analysis as of December 31, 2019 when compared to that as of December 31, 2018 is driven by equity market performance during 2019 which has resulted in more equity exposure to public equity market price declines. The financial instruments included in the sensitivity analysis are carried at fair value and changes in fair value are recognized in earnings. These financial instruments include public equity investments, derivative instruments and the FIA embedded derivative.

Item 8. Financial Statements and Supplementary Data

Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders
of Athene Holding Ltd.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Athene Holding Ltd. and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income (loss), equity, and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and financial statement schedules listed in the index appearing under Item 15(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of certain structured fixed maturity securities

As described in Notes 2 and 5 to the consolidated financial statements, structured fixed maturity securities include collateralized loan obligations (CLO), asset-backed securities (ABS), residential mortgage-backed securities (RMBS), and commercial mortgage-backed securities (CMBS), which represented approximately 21% of the Company's total $107,952 million in investments and 21% of the Company's $21,893 million in investments in related parties as of December 31, 2019. Management utilized 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 and unobservable inputs to value certain of its structured fixed maturity securities. The significant unobservable inputs include discount rates, 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.

The principal considerations for our determination that performing procedures relating to the valuation of certain structured fixed maturity securities is a critical audit matter are (i) there was significant judgment by management in determining the fair value of these investments as the valuation uses significant unobservable inputs, specifically, the discount rate, estimation of cash flows, and liquidity assumptions, which led to a high degree of auditor judgment, subjectivity and effort in performing the procedures relating to the estimate; and (ii) the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of certain structured fixed maturity securities, including controls over the development of the model and the significant unobservable inputs. These procedures also included, among others, developing an independent estimate of the value for a sample of the securities by obtaining independent pricing from third party vendors, if available. For a sample of structured fixed maturity securities, professionals with specialized skill and knowledge were used to assist in developing an independent range of prices and comparing management's estimate to the independently developed ranges. Developing the independent estimate involved utilizing a range of available market inputs and assumptions specific to the discount rate, estimation of cash flows, and liquidity assumptions, and testing the completeness and accuracy of data provided by management.

Valuation of embedded derivatives of fixed indexed annuities

As described in Notes 1, 3 and 5 to the consolidated financial statements, the Company issues and reinsures fixed indexed annuity products that contain embedded derivatives, valued at $10,942 million as of December 31, 2019. Fixed indexed annuity contracts allow the policyholder to elect a fixed interest rate return or an equity market component for which interest credited is based on the performance of certain stock market indices. The equity market option is an embedded derivative. The fair value of the embedded derivatives is computed as the present value of benefits attributable to the excess of the projected policy contract values over the projected minimum guaranteed contract values. The projections of policy contract values are based on assumptions for future policy growth, which includes assumptions for expected index credits on the next policy anniversary date, future equity option costs, volatility, interest rates, and policyholder behavior assumptions including lapses and the use of benefit riders.

The principal considerations for our determination that performing procedures relating to the valuation of embedded derivatives of fixed indexed annuities is a critical audit matter are (i) there was significant judgment by management in estimating the fair value of embedded derivatives, specifically the significant policyholder behavior assumptions including lapse and the use of benefit riders, which in turn led to a high degree of auditor judgment, subjectivity and effort in evaluating the audit evidence relating to the significant assumptions, and (ii) the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of embedded derivatives of fixed indexed annuities, including controls over the development of significant assumptions. These procedures also included, among others, testing the completeness and accuracy of key data underlying the development of the significant assumptions, and the involvement of professionals with specialized skill and knowledge to assist in testing management's process for determining the valuation of embedded derivatives for fixed indexed annuities, which included (i) evaluating the appropriateness of the methods used in the valuation of the embedded derivatives of fixed indexed annuities, and (ii) evaluating the reasonableness of management's significant assumptions of policyholder behavior assumptions including lapses and the use of benefit riders.

Valuation of guaranteed lifetime withdrawal benefits (GLWB)

As described in Note 1 to the consolidated financial statements, the Company issues and reinsures fixed indexed annuity products, which contain GLWB riders. The Company establishes future policy benefits reserve for GLWB by estimating the expected value of withdrawal benefits in excess of the projected account balance. The excess is recognized proportionally over the accumulation period based on total actual and expected assessments. The methods used to estimate future policy benefit reserve have assumptions about policyholder behavior, which includes lapses, withdrawals and use of benefit riders; mortality; expected yield on investments supporting the liability; and market conditions affecting the account balance growth.

The principal considerations for our determination that performing procedures relating to the valuation of the GLWB is a critical audit matter are (i) there was significant judgment by management in estimating the future policy benefit reserve of the GLWB rider, specifically the significant assumptions about policyholder behavior, including lapses and use of benefit riders, and the expected yield on investments supporting the liability which in turn led to a high degree of auditor judgment, subjectivity and effort in evaluating the audit evidence relating to the significant assumptions and (ii) the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of GLWB, including controls over the development of significant assumptions. These procedures also included, among others, testing the completeness and accuracy of key data underlying the development of the significant assumptions, and the involvement of professionals with specialized skill and knowledge to assist in testing management's process for determining the valuation of GLWB, which included (i) evaluating the appropriateness of the method used in the valuation of GLWB, and (ii) evaluating the reasonableness of management's significant assumptions about policyholder behavior, including lapses and use of benefit riders, and the expected yield on investments supporting the liability.

Valuation of deferred acquisition costs (DAC)

As described in Notes 1 and 7 to the consolidated financial statements, costs related directly to the successful acquisition of new, or renewal of, insurance or investment contracts are deferred to the extent they are recoverable from future premiums or gross profits. Deferred costs related to universal life-type policies and investment contracts with significant revenue streams from sources other than investment of the policyholder funds are amortized over the lives of the policies, based upon the proportion of the present value of actual and expected deferred costs to the present value of actual and expected gross profits to be earned over the life of the policies. Estimates of the expected gross profits are based on assumptions using accepted actuarial methods related to policyholder behavior, including lapses and the use of benefit riders, mortality, yields on investments supporting the liabilities, future interest credited amounts (including indexed related credited amounts on fixed indexed annuity products), and other policy changes as applicable, and the level of expenses necessary to maintain the policies over their expected lives.

The principal considerations for our determination that performing procedures relating to the valuation of DAC is a critical audit matter are (i) there was significant judgment by management in estimating the future gross profits used to amortize the DAC, specifically the significant policyholder behavior assumptions related to lapses and the use of benefit riders and yields on investments supporting the liabilities, which in turn led to a high degree of auditor judgment, subjectivity, and judgment in evaluating the audit evidence relating to the significant assumptions and (ii) the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of DAC, including controls over the development of significant assumptions. These procedures also included, among others, testing the completeness and accuracy of key data underlying the development of the significant assumptions, and the involvement of professionals with specialized skill and knowledge to assist in testing management's process for determining the valuation of DAC, which included (i) evaluating the appropriateness of the actuarial methods used in the valuation of DAC, and (ii) evaluating the reasonableness of management's significant assumptions including lapses and the use of benefit riders and yields on investments supporting the liabilities.

/s/ PricewaterhouseCoopers LLP
Des Moines, Iowa
February 20, 2020

We have served as the Company's auditor since 2015.

ATHENE HOLDING LTD.
Consolidated Balance Sheets

	December 31,	
(In millions)	2019	2018
Assets		
Investments		
Available-for-sale securities, at fair value (amortized cost: 2019 – $67,479 and 2018 – $60,025)	$ 71,374	$ 59,265
Trading securities, at fair value	2,054	1,949
Equity securities, at fair value	247	216
Mortgage loans, net of allowances (portion at fair value: 2019 – $27 and 2018 – $32)	14,306	10,340
Investment funds (portion at fair value: 2019 – $154 and 2018 – $182)	731	703
Policy loans	417	488
Funds withheld at interest (portion at fair value: 2019 – $801 and 2018 – $57)	15,181	15,023
Derivative assets	2,888	1,043
Short-term investments (portion at fair value: 2019 – $406 and 2018 – $191)	596	191
Other investments (portion at fair value: 2019 – $93 and 2018 – $52)	158	122
Total investments	107,952	89,340
Cash and cash equivalents	4,237	2,911
Restricted cash	402	492
Investments in related parties		
Available-for-sale securities, at fair value (amortized cost: 2019 – $3,783 and 2018 – $1,462)	3,804	1,437
Trading securities, at fair value	785	249
Equity securities, at fair value	58	120
Mortgage loans	653	291
Investment funds (portion at fair value: 2019 – $252 and 2018 – $201)	2,886	2,232
Funds withheld at interest (portion at fair value: 2019 – $594 and 2018 – $(110))	13,220	13,577
Other investments	487	386
Accrued investment income (related party: 2019 – $27 and 2018 – $25)	807	682
Reinsurance recoverable (related party: 2019 – $0 and 2018 – $344; portion at fair value: 2019 – $1,821 and 2018 – $1,676)	4,863	5,534
Deferred acquisition costs, deferred sales inducements and value of business acquired	5,008	5,907
Other assets (related party: 2019 – $0 and 2018 – $357)	985	1,635
Assets of consolidated variable interest entities		
Investments		
Trading securities, at fair value (related party: 2019 – $0 and 2018 – $35)	16	35
Equity securities, at fair value – related party	6	50
Investment funds (related party: 2019 – $664 and 2018 – $583; portion at fair value: 2019 – $567 and 2018 – $567)	683	624
Cash and cash equivalents	3	2
Other assets	20	1
Total assets	$ 146,875	$ 125,505

(Continued)

See accompanying notes to consolidated financial statements

ATHENE HOLDING LTD.
Consolidated Balance Sheets

(In millions, except per share data)	December 31, 2019	December 31, 2018
Liabilities and Equity		
Liabilities		
Interest sensitive contract liabilities (related party: 2019 – $15,285 and 2018 – $16,850; portion at fair value: 2019 – $11,992 and 2018 – $8,901)	$ 102,745	$ 96,610
Future policy benefits (related party: 2019 – $1,302 and 2018 – $1,259; portion at fair value: 2019 – $2,301 and 2018 – $2,173)	23,330	16,704
Other policy claims and benefits (related party: 2019 – $13 and 2018 – $10)	138	142
Dividends payable to policyholders	113	118
Short-term debt	475	—
Long-term debt	992	991
Derivative liabilities	97	85
Payables for collateral on derivatives and securities to repurchase	3,255	969
Funds withheld liability (related party: 2019 – $0 and 2018 – $337; portion at fair value: 2019 – $31 and 2018 – $(1))	408	721
Other liabilities (related party: 2019 – $79 and 2018 – $59)	1,181	889
Total liabilities	132,734	117,229
Commitments and Contingencies (Note 15)		
Equity		
Preferred stock		
Series A – par value $1 per share; $863 aggregate liquidation preference; authorized, issued and outstanding: 2019 and 2018 – 0.0 shares	—	—
Series B – par value $1 per share; $345 aggregate liquidation preference; authorized, issued and outstanding: 2019 and 2018 – 0.0 shares	—	—
Common stock		
Class A – par value $0.001 per share; authorized: 2019 and 2018 – 425.0 shares; issued and outstanding: 2019 – 143.2 and 2018 – 162.4 shares	—	—
Class B – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 325.0 shares; issued and outstanding: 2019 – 25.4 and 2018 – 25.4 shares	—	—
Class M-1 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.1 shares; issued and outstanding: 2019 – 3.3 and 2018 – 3.4 shares	—	—
Class M-2 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 5.0 shares; issued and outstanding: 2019 – 0.8 and 2018 – 0.8 shares	—	—
Class M-3 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.5 shares; issued and outstanding: 2019 – 1.0 and 2018 – 1.0 shares	—	—
Class M-4 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.5 shares; issued and outstanding: 2019 – 4.0 and 2018 – 4.1 shares	—	—
Additional paid-in capital	4,171	3,462
Retained earnings	6,939	5,286
Accumulated other comprehensive income (loss) (related party: 2019 – $17 and 2018 – $(25))	2,281	(472)
Total Athene Holding Ltd. shareholders' equity	13,391	8,276
Noncontrolling interests	750	—
Total equity	14,141	8,276
Total liabilities and equity	$ 146,875	$ 125,505

(Concluded)

See accompanying notes to consolidated financial statements

ATHENE HOLDING LTD.
Consolidated Statements of Income

(In millions, except per share data)	Years ended December 31, 2019	2018	2017
Revenues			
Premiums (related party: 2019 – $243, 2018 – $679 and 2017 – $0)	$ 6,382	$ 3,462	$ 2,526
Product charges (related party: 2019 – $54, 2018 – $34 and 2017 – $0)	524	449	340
Net investment income (related party investment income: 2019 – $707, 2018 – $539 and 2017 – $220; and related party investment expense: 2019 – $426, 2018 – $349 and 2017 – $318)	4,522	4,004	3,269
Investment related gains (losses) (related party: 2019 – $1,008, 2018 – $(77) and 2017 – $(16))	4,752	(1,324)	2,572
Other-than-temporary impairment investment losses			
Other-than-temporary impairment losses	(44)	(24)	(29)
Other-than-temporary impairment losses reclassified to (from) other comprehensive income	6	6	(4)
Net other-than-temporary impairment losses	(38)	(18)	(33)
Other revenues	37	26	37
Revenues of consolidated variable interest entities			
Net investment income (related party: 2019 – $72, 2018 – $55 and 2017 – $42)	74	56	42
Investment related gains (losses) (related party: 2019 – $1, 2018 – $(21) and 2017 – $35)	5	(18)	35
Total revenues	16,258	6,637	8,788
Benefits and expenses			
Interest sensitive contract benefits (related party: 2019 – $511, 2018 – $63 and 2017 – $0)	4,557	290	2,866
Amortization of deferred sales inducements	74	54	63
Future policy and other policy benefits (related party: 2019 – $365, 2018 – $707 and 2017 – $0)	7,587	4,281	3,261
Amortization of deferred acquisition costs and value of business acquired	958	174	344
Dividends to policyholders	36	37	118
Policy and other operating expenses (related party: 2019 – $45, 2018 – $42 and 2017 – $13)	744	626	672
Total benefits and expenses	13,956	5,462	7,324
Income before income taxes	2,302	1,175	1,464
Income tax expense	117	122	106
Net income	2,185	1,053	1,358
Less: Net income attributable to noncontrolling interests	13	—	—
Net income attributable to Athene Holding Ltd. shareholders	2,172	1,053	1,358
Less: Preferred stock dividends	36	—	—
Net income available to Athene Holding Ltd. common shareholders	$ 2,136	$ 1,053	$ 1,358
Earnings per share			
Basic – Classes A, B, M-1, M-2, M-3 and M-4	$ 11.44	$ 5.34	$ 6.95
Diluted – Class A	11.41	5.32	6.91
Diluted – Class B	11.44	5.34	6.95
Diluted – Class M-1	11.44	5.34	6.95
Diluted – Class M-2	11.44	5.31	5.05
Diluted – Class M-3	11.44	5.31	3.86
Diluted – Class M-4	9.94	4.11	3.10

See accompanying notes to consolidated financial statements

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

	Years ended December 31,		
(In millions)	2019	2018	2017
Net income	$ 2,185	$ 1,053	$ 1,358
Other comprehensive income (loss), before tax			
Unrealized investment gains (losses) on available-for-sale securities, net of offsets	3,444	(2,442)	1,312
Noncredit component of other-than-temporary impairment losses on available-for-sale securities	(6)	(6)	4
Unrealized gains (losses) on hedging instruments	29	146	(105)
Foreign currency translation and other adjustments	1	(8)	19
Other comprehensive income (loss), before tax	3,468	(2,310)	1,230
Income tax expense (benefit) related to other comprehensive income (loss)	698	(431)	334
Other comprehensive income (loss)	2,770	(1,879)	896
Comprehensive income (loss)	4,955	(826)	2,254
Less: Comprehensive loss attributable to noncontrolling interests	(4)	—	—
Comprehensive income (loss) attributable to Athene Holding Ltd. shareholders	$ 4,959	$ (826)	$ 2,254

See accompanying notes to consolidated financial statements

ATHENE HOLDING LTD.
Consolidated Statements of Equity

(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, 2016	$ —	$ —	$ 3,421	$ 3,094	$ 366	$ 6,881	$ 1	$ 6,882
Net income	—	—	—	1,358	—	1,358	—	1,358
Other comprehensive income	—	—	—	—	896	896	—	896
Issuance of common shares, net of expenses	—	—	1	—	—	1	—	1
Stock-based compensation	—	—	50	—	—	50	—	50
Retirement or repurchase of shares	—	—	—	(10)	—	(10)	—	(10)
Adoption of accounting standards	—	—	—	(187)	187	—	—	—
Other changes in equity of noncontrolling interests	—	—	—	—	—	—	(1)	(1)
Balance at December 31, 2017	—	—	3,472	4,255	1,449	9,176	—	9,176
Adoption of accounting standards	—	—	—	39	(42)	(3)	—	(3)
Net income	—	—	—	1,053	—	1,053	—	1,053
Other comprehensive loss	—	—	—	—	(1,879)	(1,879)	—	(1,879)
Issuance of common shares, net of expenses	—	—	2	—	—	2	—	2
Stock-based compensation	—	—	32	—	—	32	—	32
Retirement or repurchase of shares	—	—	(44)	(61)	—	(105)	—	(105)
Balance at December 31, 2018	—	—	3,462	5,286	(472)	8,276	—	8,276
Net income	—	—	—	2,172	—	2,172	13	2,185
Other comprehensive income	—	—	—	—	2,787	2,787	(17)	2,770
Issuance of preferred shares, net of expenses	—	—	1,172	—	—	1,172	—	1,172
Issuance of common shares, net of expenses	—	—	3	—	—	3	—	3
Stock-based compensation	—	—	28	—	—	28	—	28
Retirement or repurchase of shares	—	—	(349)	(483)		(832)		(832)
Preferred stock dividends	—	—	—	(36)	—	(36)	—	(36)
Subsidiary issuance of equity interests		—	(145)	—	(34)	(179)	754	575
Balance at December 31, 2019	$ —	$ —	$ 4,171	$ 6,939	$ 2,281	$ 13,391	$ 750	$ 14,141

See accompanying notes to consolidated financial statements

ATHENE HOLDING LTD.
Consolidated Statements of Cash Flows

	Years ended December 31,		
(In millions)	2019	2018	2017
Cash flows from operating activities			
Net income	$ 2,185	$ 1,053	$ 1,358
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of deferred acquisition costs and value of business acquired	958	174	344
Amortization of deferred sales inducements	74	54	63
Net accretion of net investment premiums, discounts and other	(94)	(178)	(192)
Payment at inception of reinsurance agreements, net (related party: 2019 – $0, 2018 – $(407) and 2017 – $0)	—	(394)	—
Net investment (income) loss (related party: 2019 – $(171), 2018 – $(103) and 2017 – $(63))	(167)	(84)	(53)
Net recognized (gains) losses on investments and derivatives (related party: 2019 – $(15), 2018 – $(8) and 2017 – $8)	(2,479)	1,095	(2,180)
Policy acquisition costs deferred	(645)	(919)	(493)
Changes in operating assets and liabilities:			
Accrued investment income (related party: 2019 – $(2), 2018 – $(15) and 2017 – $0)	(128)	(66)	(91)
Interest sensitive contract liabilities (related party: 2019 – $471, 2018 – $30 and 2017 – $0)	4,003	(365)	2,564
Future policy benefits, other policy claims and benefits, dividends payable to policyholders and reinsurance recoverable (related party: 2019 – $295, 2018 – $109 and 2017 – $0)	1,171	2,457	2,019
Funds withheld assets and liabilities (related party: 2019 – $(1,317), 2018 – $113 and 2017 – $0)	(2,582)	270	(419)
Other assets and liabilities	367	(240)	283
Consolidated variable interest entities related:			
Net recognized (gains) losses on investments and derivatives (related party: 2019 – $(1), 2018 – $20 and 2017 – $(36))	(5)	17	(36)
Other operating activities, net	(2)	—	3
Net cash provided by operating activities	2,656	2,874	3,170
Cash flows from investing activities			
Sales, maturities and repayments of:			
Available-for-sale securities (related party: 2019 – $252, 2018 – $181 and 2017 – $131)	$ 12,762	$ 12,121	$ 12,634
Trading securities (related party: 2019 – $40, 2018 – $30 and 2017 – $55)	272	348	156
Equity securities (related party: 2019 – $72, 2018 – $29 and 2017 – $22)	254	132	985
Mortgage loans (related party: 2019 – $4, 2018 – $13 and 2017 – $0)	2,070	1,373	1,669
Investment funds (related party: 2019 – $291, 2018 – $305 and 2017 – $349)	416	481	496
Derivative instruments and other invested assets (related party: 2019 – $0, 2018 – $2 and 2017 – $0)	1,503	1,859	1,503
Real estate	—	—	4
Short-term investments (related party: 2019 – $0, 2018 – $172 and 2017 – $65)	398	538	351
Purchases of:			
Available-for-sale securities (related party: 2019 – $(2,897), 2018 – $(811) and 2017 – $(186))	(17,237)	(15,435)	(18,883)
Trading securities (related party: 2019 – $(6), 2018 – $(4) and 2017 – $0)	(495)	(54)	(89)
Equity securities (related party: 2019 – $(262), 2018 – $(149) and 2017 – $0)	(451)	(334)	(847)
Mortgage loans (related party: 2019 – $(366), 2018 – $(389) and 2017 – $0)	(6,391)	(5,745)	(2,428)
Investment funds (related party: 2019 – $(746), 2018 – $(1,140) and 2017 – $(509))	(902)	(1,375)	(660)
Derivative instruments and other invested assets (related party: 2019 – $(100), 2018 – $(150) and 2017 – $0)	(1,299)	(1,348)	(738)
Real estate	—	—	(76)
Short-term investments (related party: 2019 – $0, 2018 – $(121) and 2017 – $(117))	(802)	(478)	(421)
Consolidated variable interest entities related:			
Sales, maturities and repayments of investments (related party: 2019 – $90, 2018 – $203 and 2017 – $85)	101	217	95
Purchases of investments (related party: 2019 – $(92), 2018 – $(31) and 2017 – $(23))	(110)	(83)	(23)
Deconsolidation of Athora Holding Ltd.	—	(296)	—
Other investing activities, net	(45)	(94)	503
Net cash used in investing activities	(9,956)	(8,173)	(5,769)

(Continued)

See accompanying notes to consolidated financial statements

ATHENE HOLDING LTD.
Consolidated Statements of Cash Flows

(In millions)	Years ended December 31, 2019	2018	2017
Cash flows from financing activities			
Proceeds from short-term debt	$ 475	$ 183	$ —
Repayment of short-term debt	—	(183)	—
Proceeds from long-term debt	—	998	—
Deposits on investment-type policies and contracts (related party: 2019 – $146, 2018 – $151 and 2017 – $0)	11,569	10,262	9,056
Withdrawals on investment-type policies and contracts (related party: 2019 – $(455), 2018 – $(252) and 2017 – $0)	(6,548)	(6,205)	(4,843)
Payments for coinsurance agreements on investment-type contracts, net	(44)	(2)	(33)
Net change in cash collateral posted for derivative transactions and securities to repurchase	2,286	(1,354)	940
Issuance of preferred stock, net of expenses	1,172	—	—
Preferred stock dividends	(36)	—	—
Repurchase of common stock	(832)	(105)	(10)
Subsidiary issuance of equity interests to noncontrolling interests	575	—	—
Other financing activities, net	(80)	113	(62)
Net cash provided by financing activities	8,537	3,707	5,048
Effect of exchange rate changes on cash and cash equivalents	—	—	32
Net increase (decrease) in cash and cash equivalents	1,237	(1,592)	2,481
Cash and cash equivalents at beginning of year[1]	3,405	4,997	2,516
Cash and cash equivalents at end of year[1]	$ 4,642	$ 3,405	$ 4,997
Supplementary information			
Cash paid (refunded) for taxes	$ 36	$ 52	$ (64)
Cash paid for interest	49	26	—
Non-cash transactions			
Deposits on investment-type policies and contracts through reinsurance agreements (related party: 2019 – $217, 2018 – $17,619 and 2017 – $0)	782	26,532	663
Withdrawals on investment-type policies and contracts through reinsurance agreements (related party: 2019 – $1,753, 2018 – $1,050 and 2017 – $0)	3,393	1,843	482
Investments received from settlements on reinsurance agreements	56	52	73
Investments received from settlements on related party reinsurance agreements	149	—	—
Investments received from pension risk transfer premiums	5,235	435	334
Investments exchanged for related party investments	—	95	26
Related party investments exchanged for investments	—	115	—
Investment in Athora Holding Ltd. received upon deconsolidation	—	108	—
Ceding commission on reinsurance agreements settled in investments	—	266	—
Decrease in investments due to novation of related party reinsurance transactions	320	—	—

[1] *Includes cash and cash equivalents, restricted cash, and cash and cash equivalents of consolidated variable interest entities.*

(Concluded)

See accompanying notes to 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.

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.; and
- Athene USA Corporation, an Iowa corporation (together with its subsidiaries, Athene USA).

Consolidation and Basis of Presentation—Our consolidated financial statements include our wholly owned subsidiaries, investees we control and any variable interest entities (VIEs) where we are the primary beneficiary. Investments in entities that we do not control, but have the ability to exercise significant influence over operating and financing decisions, other than investments for which we have elected the fair value option, are accounted for under the equity method. Intercompany balances and transactions have been eliminated.

For entities that are consolidated, but not 100% owned, we allocate a portion of the income or loss and corresponding equity to the owners other than us. We include the aggregate of the income or loss and corresponding equity that is not owned by us in noncontrolling interests in the consolidated financial statements.

We report investments in related parties and assets and liabilities of consolidated VIEs separately, as further described in the accounting policies that follow.

We have prepared the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (GAAP), which requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual experience could materially differ from these estimates and assumptions. Our principal estimates impact:

- fair value of investments;
- impairment of investments and valuation allowances;
- derivatives valuation, including embedded derivatives;
- deferred acquisition costs (DAC), deferred sales inducements (DSI) and value of business acquired (VOBA);
- future policy benefit reserves;
- valuation allowances on deferred tax assets; and
- stock-based compensation.

Additional details around these principal estimates and assumptions are discussed in the significant accounting policies that follow and the related footnote disclosures.

Deconsolidation – AGER Bermuda Holding Ltd. and its subsidiaries, now known as Athora Holding Ltd. (Athora), was our consolidated subsidiary for the year ended December 31, 2017. In April 2017, Athora entered into subscription agreements pursuant to which Athora secured commitments to purchase new common shares in Athora (Athora Offering). On January 1, 2018, the Athora Offering closed and Athora called capital from all of its investors, excluding us. In connection with the closing of the Athora Offering, our equity interest in Athora was exchanged for new common shares of Athora and our interest in Athora was reduced such that immediately after the closing of the Athora Offering, we held 10% of the aggregate voting power of and less than 50% of the economic interest in Athora. Our interest in Athora has since been held as a related party investment rather than a consolidated subsidiary. We did not recognize a material amount in the consolidated statements of income upon deconsolidation in 2018.

Summary of Significant Accounting Policies

Investments

Fixed Maturity Securities – Fixed maturity securities includes bonds, collateralized loan obligations (CLO), asset-backed securities (ABS), residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS) and redeemable preferred stock. We classify fixed maturity securities as available-for-sale (AFS) or trading at the time of purchase and subsequently carry them at fair value. Fair value hierarchy and valuation methodologies are discussed in *Note 5 – Fair Value*. Classification is dependent on a variety of factors including our expected holding period, election of the fair value option and asset and liability matching.

AFS Securities – Unrealized gains and losses on AFS securities, net of tax and adjustments to DAC, DSI, VOBA and future policy benefits, if applicable, are generally reflected in accumulated other comprehensive income (loss) (AOCI) on the consolidated balance sheets. Unrealized gains or losses relating to identified risks within AFS securities in fair value hedging relationships are reflected in investment related gains (losses) on the consolidated statements of income.

Trading Securities – We elected the fair value option for certain fixed maturity securities. These fixed maturity securities are classified as trading, with changes to fair value included in investment related gains (losses) on the consolidated statements of income. Although the securities are classified as trading, the trading activity related to these investments is primarily focused on asset and liability matching activities and is not intended to be an income strategy based on active trading. As such, the activity related to these investments on the consolidated statements of cash flows is classified as investing activities.

We generally record security transactions on a trade date basis, with any unsettled trades recorded in other assets or other liabilities on the consolidated balance sheets. Bank loans, private placements and investment funds are recorded on settlement date basis.

Equity Securities – Equity securities includes common stock, mutual funds and non-redeemable preferred stock. Equity securities are carried at fair value with subsequent changes in fair value recognized in net income effective January 1, 2018. Prior to January 1, 2018, the accounting for subsequent changes in the fair value of an equity security was dependent on its classification as AFS or trading as discussed previously.

Purchased Credit Impaired (PCI) Investments – We purchase certain structured securities, primarily RMBS, and re-performing mortgage loans having experienced deterioration in credit quality since their issuance which meet the definition of PCI investments. We determined, based on our expectations as to the timing and amount of cash flows expected to be received, that it was probable at acquisition that we would not collect all contractually required payments, including both principal and interest, while also considering the effects of any prepayments for these PCI investments. Based on these assumptions, the difference between the undiscounted expected future cash flows of the PCI investment and the recorded investment represents the initial accretable yield, which is accreted into investment income, net of related expenses, over its remaining life on a level-yield basis. The difference between the contractually required payments on the PCI investment and the undiscounted expected future cash flows represents the non-accretable difference at acquisition. Over time, based on actual payments received and changes in estimates of undiscounted expected future cash flows, the accretable yield and the non-accretable difference can change. PCI investments are presented on the consolidated financial statements consistent with AFS securities or mortgage loans depending on the underlying investment.

Quarterly, we evaluate the undiscounted expected future cash flows associated with PCI investments based on updates to key assumptions. Changes to undiscounted expected future cash flows due solely to the changes in the contractual benchmark interest rates on variable rate PCI investments will change the accretable yield prospectively. Declines in undiscounted expected future cash flows due to further credit deterioration, as well as changes in the expected timing of the cash flows, can result in the recognition of an other-than-temporary impairment (OTTI) charge for PCI securities or a valuation allowance for PCI loans. Significant increases in undiscounted expected future cash flows are recognized prospectively as an adjustment to the accretable yield.

Mortgage Loans – Mortgage loans are primarily stated at unpaid principal balance, adjusted for any unamortized premium or discount, and net of valuation allowances. Interest income is accrued on the principal amount of the loan based on its contractual interest rate. We record amortization of premiums and discounts using the effective yield method and contractual cash flows on the underlying loan. We accrue interest on loans until it is probable we will not receive interest or the loan is 90 days past due. Interest income, amortization of premiums and discounts, and prepayment fees are reported in net investment income on the consolidated statements of income. We have also elected the fair value option on a portion of our mortgage loans.

Investment Funds – We invest in certain non-fixed income, alternative investments in the form of limited partnerships or similar legal structures (investment funds). For investment funds in which we have determined we are not the primary beneficiary, and therefore not required to consolidate, we typically record these investments using the equity method of accounting, where the cost is recorded as an investment in the fund, or we have elected the fair value option. Adjustments to the carrying amount reflect our pro rata ownership percentage of the operating results as indicated by net asset value (NAV) in the investment fund financial statements, which can be on a lag of up to three months when investee information is not received in a timely manner.

We record our proportionate share of investment fund income within net investment income on the consolidated statements of income. Contributions paid or distributions received by us are recorded directly to the investment fund balance as an increase to carrying value or as a return of capital, respectively.

Policy Loans – Policy loans are funds provided to policyholders in return for a claim on the policyholder's account value. The funds provided are limited to a specified percentage of the account balance. The majority of policy loans do not have a stated maturity and the balances and accrued interest are repaid with proceeds from the policyholder's account balance. Policy loans are reported at the unpaid principal balance. Interest income is recorded as earned using the contract interest rate and is reported in net investment income on the consolidated statements of income.

Funds Withheld at Interest – Funds withheld at interest represents a receivable for amounts contractually withheld by ceding companies in accordance with funds withheld coinsurance (funds withheld) and modified coinsurance (modco) reinsurance agreements in which we act as reinsurer. Generally, assets equal to statutory reserves are withheld and legally owned by the ceding company, and any excess or shortfall is settled periodically. The underlying agreements contain embedded derivatives as discussed below.

Securities Repurchase and Reverse Repurchase Agreements – Securities repurchase and reverse repurchase transactions involve the temporary exchange of securities for cash or other collateral of equivalent value, with agreement to redeliver a like quantity of the same or similar securities at a future date prior to maturity at a fixed and determinable price. We evaluate transfers of securities under these agreements to repurchase or resell to determine whether they satisfy the criteria for accounting treatment as secured borrowing or lending arrangements. Agreements not meeting the criteria would require recognition of the transferred securities as sales or purchases, with related forward repurchase or resale commitments. All of our securities repurchase transactions are accounted for as collateralized borrowings and are included in payables for collateral on derivatives and securities to repurchase on the consolidated balance sheets. Earnings from investing activities related to the cash received under our securities repurchase arrangements are included in net investment income on the consolidated statements of income. The associated borrowing cost is included in policy and other operating expenses on the consolidated statements of income.

Short-term Investments – Short-term investments consists of financial instruments with maturities of greater than three months but less than twelve months when purchased. Short-term debt securities are accounted for as trading or AFS consistent with our policies for those investments. Short-term loans are carried at amortized cost. Fair values are determined consistent with methodologies described in *Note 5 – Fair Value* for the respective investment type.

Investment Income – We recognize investment income as it accrues or is legally due, net of investment management and custody fees. Investment income on fixed maturity securities includes coupon interest, as well as the amortization of any premium and the accretion of any discount. Investment income on equity securities represents dividend income and preferred coupons interest. Realized gains and losses on sales of investments are included in investment related gains (losses) on the consolidated statements of income. Realized gains and losses on investments sold are determined based on a first-in first-out method.

Other-Than-Temporary Impairment – We identify securities that could potentially have impairments that are other-than-temporary by monitoring market events for changes in market interest rates, credit issues, changes in business climate, management changes, litigation, government actions and other similar factors. Indicators of impairment may include changes in the issuers' credit ratings and outlook, frequency of late payments, pricing levels, key financial ratios, financial statements, revenue forecasts and cash flow projections.

We review securities on a case-by-case basis to determine whether an other-than-temporary decline in value exists and whether losses should be recognized. We consider relevant facts and circumstances in evaluating whether a credit or interest rate-related impairment of a security is other-than-temporary. Relevant facts and circumstances include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in fair value; (3) the issuer's financial position and access to capital; and (4) for fixed maturity securities, our intent to sell a security or whether it is more likely than not that we will be required to sell the security before the recovery of its cost or amortized cost which, in some cases, may extend to maturity and for equity securities prior to January 1, 2018, our ability and intent to hold the security for a period of time that allows for the recovery in value. To the extent we determine that a security is other-than-temporarily impaired, an impairment loss is recognized.

The recognition of impairment losses on fixed maturity securities is dependent upon the facts and circumstances related to the specific security. If 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 cost or amortized cost, less any recorded credit loss, we recognize a loss in other-than-temporary impairment losses on the consolidated statements of income for the difference between cost or amortized cost and fair value. If neither of these two conditions exists, then the recognition of the loss is bifurcated and we recognize the credit loss portion in other-than-temporary impairment losses on the consolidated statements of income and the non-credit loss portion in AOCI on the consolidated balance sheets. Impairment losses on equity securities were recognized in investment related gains (losses) on the consolidated statements of income prior to January 1, 2018. Effective January 1, 2018, equity securities are no longer evaluated for impairment as all changes in fair value are recognized in net income.

We estimate the amount of the credit loss component of a fixed maturity security impairment as the difference between amortized cost and the present value of the expected cash flows of the security. The present value is determined using the estimated cash flows discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete an asset-backed or floating rate security. The techniques and assumptions for establishing the estimated cash flows vary depending on the type of security. 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. 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.

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

We impair a mortgage loan when it is probable we will not collect all amounts due under the agreement. We establish a general valuation allowance on mortgage loans based on loss history. Additionally, we establish a valuation allowance on individual loans based on expected losses from future dispositions or settlement, including foreclosures. We calculate the allowance based on how much the carrying value exceeds one of these values:

- the present value of expected future cash flows discounted at the loan's original effective interest rate;
- the value of the loan's collateral if it is in the process of foreclosure or otherwise collateral dependent; or
- the loan's fair value if the loan is being sold.

We first apply any interest accrued or received on the net carrying amount of the impaired loan to the principal of the loan, and once the principal is repaid, we include amounts received in net investment income. We limit accrued interest income on impaired loans to 90 days of interest. Once accrued interest on the impaired loan is received, we recognize interest income on a cash basis. Loans deemed uncollectible or in foreclosure are charged off against the valuation allowances, and subsequent recoveries, if any, are credited to the valuation allowances. Changes in valuation allowances are reported in investment related gains (losses) on the consolidated statements of income.

The cost of other invested assets is adjusted for impairments in value deemed to be other-than-temporary in the period in which the determination is made. These impairments are included within other-than-temporary impairment losses on the consolidated statements of income, and the cost basis of the investment securities is reduced accordingly. We do not change the revised cost basis for subsequent recoveries in value.

Derivative Instruments—We invest in derivatives to hedge the risks experienced in our ongoing operations, such as equity, interest rate and cash flow risks, or for other risk management purposes, which primarily involve managing liability risks associated with our indexed annuity products and reinsurance agreements. Derivatives are financial instruments whose values are derived from interest rates, foreign exchange rates, financial indices or other underlying notional amounts. Derivative assets and liabilities are carried at fair value on the consolidated balance sheets. We elect to present any derivatives subject to master netting provisions as a gross asset or liability and gross of collateral. Disclosures regarding balance sheet presentation of derivatives subject to master netting agreements are discussed in *Note 3 – Derivative Instruments*. We may designate derivatives as cash flow or fair value hedges.

Hedge Documentation and Hedge Effectiveness – To qualify for hedge accounting, at the inception of the hedging relationship, we formally document our designation of the hedge as a cash flow or fair value hedge and our risk management objective and strategy for undertaking the hedging transaction. In this documentation, we identify how the hedging instrument is expected to hedge the designated risks related to the hedged item, the method that will be used to retrospectively and prospectively assess the hedging instrument's effectiveness and the method which will be used to measure ineffectiveness. A derivative designated as a hedging instrument must be assessed as being highly effective in offsetting the designated risk of the hedged item. Hedge effectiveness is formally assessed at inception and periodically throughout the life of the designated hedging relationship.

For a cash flow hedge, all changes in the fair value of the hedging derivative are reported within AOCI beginning January 1, 2018, and the related gains or losses on the derivative are reclassified into the consolidated statements of income when the cash flows of the hedged item affect earnings. Prior to January 1, 2018, any portion deemed to be ineffective was reported in investment related gains (losses) on the consolidated statements of income each reporting period as effectiveness was assessed.

For a fair value hedge, changes in the fair value of the hedging derivative and changes in the fair value of the hedged item related to the designated risk being hedged, are reported on the consolidated statements of income according to the nature of the risk being hedged. Additionally, changes in the fair value of amounts excluded from the assessment of effectiveness are recorded in earnings.

We discontinue hedge accounting prospectively when: (1) we determine the derivative is no longer highly effective in offsetting changes in the estimated cash flows or fair value of a hedged item; (2) the derivative expires, is sold, terminated, or exercised; or (3) the derivative is de-designated as a hedging instrument. When hedge accounting is discontinued, the derivative continues to be carried on the consolidated balance sheets at fair value, with changes in fair value recognized in investment related gains (losses) on the consolidated statements of income.

For a derivative not designated as a hedge, changes in the derivative's fair value and any income received or paid on derivatives at the settlement date are included in investment related gains (losses) on the consolidated statements of income.

Embedded Derivatives – We issue and reinsure products, primarily fixed indexed annuity products, or purchase investments that contain embedded derivatives. If we determine the embedded derivative has economic characteristics not clearly and closely related to the economic characteristics of the host contract, and a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is bifurcated from the host contract and accounted for separately, unless the fair value option is elected on the host contract. Under the fair value option, bifurcation of the embedded derivative is not necessary as the entire contract is carried at fair value with all related gains and losses recognized in investment related gains (losses) on the consolidated statements of income. Embedded derivatives are carried on the consolidated balance sheets at fair value in the same line item as the host contract.

Fixed indexed annuity and indexed universal life insurance contracts allow the policyholder to elect a fixed interest rate return or an equity market component for which interest credited is based on the performance of certain stock market indices. The equity market option is an embedded derivative, similar to a call option. The benefit reserve is equal to the sum of the fair value of the embedded derivative and the host (or guaranteed) component of the contracts. The fair value of the embedded derivatives is computed as the present value of benefits attributable to the excess of the projected policy contract values over the projected minimum guaranteed contract values. The projections of policy contract values are based on assumptions for future policy growth, which include assumptions for expected index credits on the next policy anniversary date, future equity option costs, volatility, interest rates and policyholder behavior assumptions including lapses and the use of benefit riders. The projections of minimum guaranteed contract values include the same assumptions for policyholder behavior as were used to project policy contract values. The embedded derivative cash flows are discounted using a rate that reflects our own credit rating. The host contract is established at contract inception as the initial account value less the initial fair value of the embedded derivative and accreted over the policy's life. The host contract accretion rate is updated each quarter so that the present value of actual and expected guaranteed cash flows is equal to the initial host value. Changes in the fair value of embedded derivatives associated with fixed indexed annuities and indexed universal life insurance contracts are included in interest sensitive contract benefits on the consolidated statements of income.

Additionally, reinsurance agreements written on a funds withheld or modco basis contain embedded derivatives. The right to receive or obligation to pay the total return on the assets supporting the funds withheld at interest or funds withheld liability, respectively, represents a total return swap with a floating rate leg. The fair value of embedded derivatives on funds withheld and modco agreements is computed as the unrealized gain (loss) on the underlying assets and is included in the funds withheld at interest and funds withheld liability lines on the consolidated balance sheets for assumed and ceded agreements, respectively. The change in the fair value of the embedded derivatives is recorded in investment related gains (losses) on the consolidated statements of income. Assumed and ceded earnings from funds withheld at interest, funds withheld liability and changes in the fair value of embedded derivatives are reported in operating activities on the consolidated statements of cash flows. Contributions to and withdrawals from funds withheld at interest and funds withheld liability are reported in operating activities on the consolidated statements of cash flows.

Variable Interest Entities—An entity that does not have sufficient equity to finance its activities without additional financial support, or in which the equity investors, as a group, do not have the characteristics typically afforded to common shareholders is a VIE. The determination as to whether an entity qualifies as a VIE depends on the facts and circumstances surrounding each entity and may require significant judgment. Our investment funds generally qualify as VIEs and are evaluated for consolidation under the VIE model.

We are required to consolidate a VIE if we are the primary beneficiary, defined as the variable interest holder with both the power to direct the activities that most significantly impact the VIE's economic performance and rights to receive benefits or obligations to absorb losses that could be potentially significant to the VIE. We determine whether we are the primary beneficiary of an entity based on a qualitative assessment of the VIE's capital structure, contractual terms, nature of the VIE's operations and purpose and our relative exposure to the related risks of the VIE. Since affiliates of Apollo Global Management, Inc. (AGM and, together with its subsidiaries, Apollo), a related party, are the decision makers in certain of the investment funds, we and a member of our related party group may together have the characteristics of the primary beneficiary of an investment fund. In this situation, we have concluded we are not under common control, as defined by GAAP, with the related party, and therefore consolidate in the circumstances when substantially all of the activities of the VIE are conducted on our behalf. We reassess the VIE and primary beneficiary determinations on an ongoing basis.

For entities that we do not consolidate but have significant influence over the entities' operations, we record our investment under the equity method of accounting. If we do not consolidate and do not have significant influence, generally on investment funds in which we own a less than a 3% interest, we elect the fair value option.

See *Note 4 – Variable Interest Entities* for discussion of our interest in entities that meet the definition of a VIE.

Reinsurance—We assume and cede insurance and investment contracts under coinsurance, funds withheld and modco. We follow reinsurance accounting for transactions that provide indemnification against loss or liability relating to insurance risk (risk transfer). To meet risk transfer requirements, a reinsurance agreement must transfer insurance risk arising from uncertainties about both underwriting and timing risks. Cessions under reinsurance do not discharge our obligations as the primary insurer, unless the requirements of assumption reinsurance have been met. We generally have the right of offset on reinsurance contracts, but have elected to present reinsurance settlement amounts due to and from the Company on a gross basis.

Assets and liabilities assumed or ceded under coinsurance, funds withheld, or modco are presented gross on the consolidated balance sheets. For investment contracts, the change in assumed and ceded reserves are presented net in interest sensitive contract benefits on the consolidated statements of income. For insurance contracts, the change in assumed and ceded reserves and benefits are presented net in future policy and other policy benefits on the consolidated statements of income. Assumed or ceded premiums are included in premiums on the consolidated statements of income.

Accounting for reinsurance requires the use of assumptions, particularly related to the future performance of the underlying business and the potential impact of counterparty credit risks. We attempt to minimize our counterparty credit risk through the structuring of the terms of our reinsurance agreements, including the use of trusts, and we monitor credit ratings of counterparties for signs of declining credit quality. When a ceding company does not report information on a timely basis, we record accruals based on the best available information at the time, which includes the reinsurance agreement terms and historical experience. We periodically compare actual and anticipated experience to the assumptions used to establish reinsurance assets and liabilities. See *Note 6 – Reinsurance* for more information.

Funds Withheld and ModCo – For business assumed or ceded on a funds withheld or modco basis, a funds withheld segregated portfolio, comprised of invested assets and other assets is maintained by the ceding entity, which is sufficient to support the current balance of statutory reserves. The fair value of the funds withheld is recorded as a funds withheld asset or liability and any excess or shortfall in relation to statutory reserves is settled periodically.

Cash and Cash Equivalents—Cash and cash equivalents include deposits and short-term highly liquid investments with a maturity of less than 90 days from the date of acquisition. Amounts included are readily convertible to known amounts of cash and are subject to an insignificant risk of change in value.

Restricted Cash—Restricted cash primarily consists of cash and cash equivalents held in funds in trust as part of certain coinsurance agreements to secure statutory reserves and liabilities of the coinsured parties. Restricted cash is reported separately on the consolidated balance sheets, but is included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period amounts shown on the consolidated statements of cash flows.

Investments in Related Parties—Investments in related parties and associated earnings, other comprehensive income and cash flows are separately identified on the consolidated financial statements and accounted for consistently with the policies described above for each category of investment. Investments in related parties are primarily a result of investments over which Apollo can exercise significant influence.

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

Deferred Acquisition Costs and Deferred Sales Inducements – Costs related directly to the successful acquisition of new, or renewal of, insurance or investment contracts are deferred to the extent they are recoverable from future premiums or gross profits. These costs consist of commissions and policy issuance costs, as well as sales inducements credited to policyholder account balances, and are included in deferred acquisition costs, deferred sales inducements and value of business acquired on the consolidated balance sheets. We perform periodic tests, including at issuance, to determine if the deferred costs are recoverable. If we determine that the deferred costs are not recoverable, we record a cumulative charge to the current period.

Deferred costs related to universal life-type policies and investment contracts with significant revenue streams from sources other than investment of the policyholder funds are amortized over the lives of the policies, based upon the proportion of the present value of actual and expected deferred costs to the present value of actual and expected gross profits to be earned over the life of the policies. Gross profits include investment spread margins, surrender charge income, policy administration, changes in the guaranteed lifetime withdrawal benefit (GLWB) and guaranteed minimum death benefit (GMDB) reserves and realized gains and losses on investments. Current period gross profits for fixed indexed annuities also include the change in fair value of both freestanding and embedded derivatives. Estimates of the expected gross profits and margins are based on assumptions using accepted actuarial methods related to policyholder behavior, including lapses and the use of benefit riders, mortality, yields on investments supporting the liabilities, future interest credited amounts (including indexed related credited amounts on fixed indexed annuity products), and other policy changes as applicable, and the level of expenses necessary to maintain the policies over their expected lives. Each reporting period, we update estimated gross profits with actual gross profits as part of the amortization process and adjust the DAC and DSI balances due to the other comprehensive income (OCI) effects of unrealized investment gains and losses on AFS securities. We also periodically revise the key assumptions used in the amortization calculation, which results in revisions to the estimated future gross profits. The effects of changes in assumptions are recorded as unlocking in the period in which the changes are made.

Deferred costs related to investment contracts without significant revenue streams from sources other than investment of the policyholder funds are amortized using the effective interest method. The effective interest method amortizes the deferred costs by discounting the future liability cash flows at a break-even rate. The break-even rate is solved such that the present value of future liability cash flows is equal to the net liability at the inception of the contract.

Value of Business Acquired – We establish VOBA for blocks of insurance contracts acquired through the acquisition of insurance entities. We record the fair value of the liabilities assumed in two components: reserves and VOBA. Reserves are established using our best estimate assumptions consistent with the policies described below for future policy benefits and interest sensitive contract liabilities. VOBA is the difference between the fair value of the liabilities and the reserves. VOBA can be either positive or negative. Any negative VOBA is recorded to the same financial statement line on the consolidated balance sheets as the associated reserves. Positive VOBA is recorded in deferred acquisition costs, deferred sales inducements and value of business acquired on the consolidated balance sheets. We perform periodic tests to determine if the VOBA remains recoverable. If we determine that VOBA is not recoverable, we record a cumulative charge to the current period.

VOBA associated with investment contracts without significant revenue streams from sources other than investment of the policyholder funds is amortized using the effective interest method. VOBA associated with immediate annuity contracts classified as long duration contracts is amortized at a constant rate in relation to net policyholder liabilities. For universal life-type policies and investment contracts with significant revenue streams from sources other than investment of policyholder funds, VOBA is amortized in relation to the present value of estimated gross profits using methods consistent with those used to amortize DAC and DSI. Negative VOBA is amortized at a constant rate in relation to applicable net policyholder liabilities.

See *Note 7 – Deferred Acquisition Costs, Deferred Sales Inducements and Value of Business Acquired* for further discussion.

Interest Sensitive Contract Liabilities—Universal life-type policies and investment contracts include fixed indexed and traditional fixed annuities in the accumulation phase, funding agreements, universal life insurance, fixed indexed universal life insurance and immediate annuities without significant mortality risk (which includes pension risk transfer (PRT) annuities without life contingencies). We carry liabilities for fixed annuities, universal life insurance and funding agreements at the account balances without reduction for potential surrender or withdrawal charges, except for a block of universal life business ceded to Global Atlantic Financial Group Limited (together with its subsidiaries, Global Atlantic) which we carry at fair value. Liabilities for immediate annuities without significant mortality risk are calculated as the present value of future liability cash flows and policy maintenance expenses discounted at contractual interest rates. For a discussion regarding our indexed products, refer above to the embedded derivative discussion.

Changes in the interest sensitive contract liabilities, excluding deposits and withdrawals, are recorded in interest sensitive contract benefits or product charges on the consolidated statements of income. Interest sensitive contract liabilities are not reduced for amounts ceded under reinsurance agreements which are reported as reinsurance recoverable on the consolidated balance sheets. See the reinsurance accounting policy discussed in *–Reinsurance* above and *Note 6 – Reinsurance* for more information on reinsurance.

Future Policy Benefits—We issue contracts classified as long-duration, which includes term and whole life, accident and health, disability, and deferred and immediate annuities with life contingencies (which includes PRT annuities with life contingencies). Liabilities for non-participating long-duration contracts are established using accepted actuarial valuation methods which require the use of assumptions related to expenses, investment yields, mortality, morbidity and persistency, with a provision for adverse deviation, at the date of issue or acquisition. As of December 31, 2019, the reserve investment yield assumptions for non-participating contracts range from 3.31% to 5.44% and are specific to our expected earned rate on the asset portfolio supporting the reserves. We base other key assumptions, such as mortality and morbidity, on industry standard data adjusted to align with actual company experience, if necessary.

For long-duration contracts, the assumptions are locked in at contract inception and only modified if we deem the reserves to be inadequate. We periodically review actual and anticipated experience compared to the assumptions used to establish policy benefits. If the net GAAP liability (gross reserves less DAC, DSI and VOBA) is less than the gross premium liability, impairment is deemed to have occurred, and the DAC, DSI and VOBA asset balances are reduced until the net GAAP liability is equal to the gross premium liability. If the DAC, DSI and VOBA asset balances are completely written off and the net GAAP liability is still less than the gross premium liability, then an additional liability is recorded to arrive at the gross premium liability.

We issue and reinsure deferred annuity contracts which contain GLWB and GMDB riders. We establish future policy benefits for GLWB and GMDB riders by estimating the expected value of withdrawal and death benefits in excess of the projected account balance. We recognize the excess proportionally over the accumulation period based on total actual and expected assessments. The methods we use to estimate the liabilities have assumptions about policyholder behavior, which includes lapses, withdrawals and use of benefit riders; mortality, expected yield on investments supporting the liability; and market conditions affecting the account balance growth.

Future policy benefits includes liabilities for no-lapse guarantees on universal life insurance and fixed indexed universal life insurance. We establish future policy benefits for no-lapse guarantees by estimating the expected value of death benefits paid after policyholder account balances have been exhausted. We recognize these benefits proportionally over the life of the contracts based on total actual and expected assessments. The methods we use to estimate the liabilities have assumptions about policyholder behavior, mortality, expected yield on investments supporting the liability, and market conditions affecting the account balance growth.

For the liabilities associated with GLWB and GMDB riders and no-lapse guarantees, each reporting period, we update expected excess benefits and assessments with actual excess benefits and assessments and adjust the liability balances due to the OCI effects of unrealized investment gains and losses on AFS securities. We also periodically revise the key assumptions used in the calculation of the liabilities which results in revisions to the expected excess benefits and assessments. The effects of changes in assumptions are recorded as unlocking in the period in which the changes are made.

Changes in future policy benefits other than the adjustment for the OCI effects of unrealized investment gains and losses on AFS securities, are recorded in future policy and other policy benefits on the consolidated statements of income. Future policy benefits are not reduced for amounts ceded under reinsurance agreements which are reported as reinsurance recoverable on the consolidated balance sheets. See the reinsurance accounting policy discussed in *–Reinsurance* above and *Note 6 – Reinsurance* for more information on reinsurance.

Closed Block Business—Two closed blocks of policies were established in connection with the reorganization of two predecessor subsidiaries from mutual companies to stock companies, collectively referred to as the Closed Blocks, and individually referred to as the AmerUs Life Insurance Company (AmerUs) closed block (AmerUs Closed Block) and the Indianapolis Life Insurance Company (ILICO) closed block (ILICO Closed Block). Insurance policies which had a dividend scale in effect as of each closed block establishment date were included in the respective closed block. The Closed Blocks were designed to give reasonable assurance to owners of insurance policies included therein that, after the reorganization, assets would be available to maintain the dividend scales and interest credits in effect prior to the reorganization, if the experience underlying such scales and crediting continued. The assets, including related revenue, allocated to the Closed Blocks will accrue solely to the benefit of the policyholders included in the Closed Blocks until they no longer exist. A policyholder dividend obligation is required to be established for earnings in the Closed Blocks that are not available to the shareholders. We have elected the fair value option for the AmerUs Closed Block and the ILICO Closed Block. See *Note 8 – Closed Block* for more information on the Closed Blocks.

Other Policy Claims and Benefits—Other policy claims and benefits include amounts payable relating to in course of settlements (ICOS) and incurred but not reported (IBNR) liabilities associated with interest sensitive contract liabilities and future policy benefits. For traditional life and universal life policies, ICOS claim liabilities are established when we are notified of the death of the policyholder but the claim has not been paid as of the reporting date. For immediate annuities and supplemental contracts, ICOS claim liabilities are established to accrue suspended benefit payments between the date of notification of death and the date of verification of death.

We determine IBNR claim liabilities using studies of past experience. The time that elapses from the death or claim date to when the claim is reported to us can vary significantly by product type, but generally ranges between one to six months for life business. We estimate IBNR claims on an undiscounted basis, using actuarial estimates of historical claims expense, adjusted for current trends and conditions. These estimates are continually reviewed and the ultimate liability may vary significantly from the amount recognized.

Dividends Payable to Policyholders—Participating policies entitle the policyholders to receive dividends based on actual interest, mortality, morbidity and expense experience for the year. Dividends are distributed to the policyholders through annual or terminal dividends which the board of directors of the applicable insurance subsidiary approves. As of December 31, 2019 and 2018, 10% and 10%, respectively, of life policies, inclusive of ceded policies, were participating, and the related liability is recorded in dividends payable to policyholders on the consolidated balance sheets. Premiums related to participating policies represented 30%, 26% and 52% of total life insurance direct premiums and deposits for the years ended December 31, 2019, 2018 and 2017, respectively.

Policyholder dividend liabilities are recorded in dividends payable to policyholders on the consolidated balance sheets and policyholder dividends are recorded in dividends to policyholders on the consolidated statements of income. For participating policies issued by our previously consolidated German subsidiaries, dividends payable to policyholders includes an adjustment to recognize timing differences between GAAP and local statutory earnings that reverse and enter into future calculations of dividends to policyholders. Except for changes due to unrealized gains or losses on AFS securities, the change in this adjustment is recorded in dividends to policyholders on the consolidated statements of income. Changes in this adjustment due to unrealized gains or losses on AFS securities are recorded in OCI.

Share Repurchase—When shares are repurchased, we can choose to record treasury shares or account for the repurchase as a constructive retirement. We have accounted for share repurchases as constructive retirement, whereby we reduce common stock and additional paid-in capital by the amount of the original issuance, with any excess purchase price recorded as a reduction to retained earnings. Under this method, issued and outstanding shares are reduced by the shares repurchased, and no treasury stock is recognized on the consolidated balance sheets.

Earnings Per Share—We compute basic earnings per share (EPS) by dividing unrounded net income available to Athene Holding Ltd. shareholders by the weighted average number of common shares eligible for earnings and outstanding for the period. As a result, it may not be possible to recalculate EPS as presented in our consolidated financial statements. Diluted earnings per share includes the effect of all potentially dilutive instruments, such as common shares, options and restricted stock units (RSUs), outstanding during the period. See *Note 11 – Earnings Per Share* for further information.

Foreign Currency—The accounts of foreign-based subsidiaries and equity method investments are measured using their functional currency. Revenue and expenses of these subsidiaries are translated into U.S. dollars at the average exchange rate for the period. Assets and liabilities are translated at the exchange rate as of the end of the reporting period. For the equity method investments, our proportionate share of the investee's income is translated into U.S. dollars at the average exchange rate for the period and our investment is translated using the exchange rate as of the end of the reporting period. The resulting translation adjustments are included in equity as a component of AOCI. Gains or losses arising from transactions denominated in a currency other than the functional currency of the entity that is party to the transaction are included in net income. The impacts of any non-U.S. dollar denominated AFS securities are included in AOCI along with the change in its fair value unless in a fair value hedging relationship as discussed in *–Derivative Instruments* above.

Recognition of Revenues and Related Expenses—Revenues for universal life-type policies and investment contracts, including surrender and market value adjustments, costs of insurance, policy administration, GMDB, GLWB and no-lapse guarantee charges, are earned when assessed against policyholder account balances during the period. Interest credited to policyholder account balances and the change in fair value of embedded derivatives within fixed indexed annuity contracts is included in interest sensitive contract benefits on the consolidated statements of income.

Premiums for long-duration contracts, including products with fixed and guaranteed premiums and benefits, are recognized as revenue when due from policyholders. When premiums are due over a significantly shorter period than the period over which benefits are provided, such as immediate annuities with life contingencies (which includes PRT annuities), a deferred profit liability is established equal to the excess of the gross premium over the net premium. The deferred profit liability is recognized in future policy benefits on the consolidated balance sheets and amortized into income in a constant relationship to the benefit reserve through future policy and other policy benefits on the consolidated statements of income.

All insurance related revenue is reported net of reinsurance ceded.

Income Taxes—We compute income taxes using the asset and liability method, under which deferred income taxes are provided for the temporary differences between the financial statement carrying amounts and the tax basis of our assets and liabilities using estimated tax rates expected to be in effect for the year in which the differences are expected to reverse. Such temporary differences are primarily due to the tax basis of reserves, DAC, VOBA, unrealized investment gains/losses, reinsurance related differences, embedded derivatives and net operating loss carryforwards. Changes in deferred income tax assets and liabilities associated with components of OCI are recorded directly to OCI. We evaluate the likelihood of realizing the benefit of our deferred tax assets and may record a valuation allowance if, based on all available evidence, we determine that it is more likely than not that some portion of the tax benefit will not be realized. We adjust the valuation allowance if, based on our evaluation, there is a change in the amount of deferred income tax assets that are deemed more-likely-than-not to be realized. Changes in deferred tax assets and liabilities attributable to changes in enacted income tax rates are recorded through net income in the period of enactment. We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the relevant taxing authorities, based on the technical merits of our position. For those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. We recognize any income tax interest and penalties in income tax expense.

See *Note 12 – Income Taxes* for discussion on withholding taxes for undistributed earnings of subsidiaries.

Reclassifications—Certain reclassifications have been made to conform with current year presentation.

Adopted Accounting Pronouncements

Leases (ASU 2019-01, ASU 2018-20, ASU 2018-11, ASU 2018-10, ASU 2018-01, ASU 2017-13 and ASU 2016-02)
These updates increase transparency and comparability for lease transactions. ASU 2016-02 requires a lessee to recognize a right-of-use asset and lease liability on the balance sheet for all leases with an original term longer than twelve months and disclose key information about leasing arrangements. Lessor accounting is largely unchanged.

ASU 2016-02 requires the adoption on a modified retrospective basis. However, ASU 2018-11 provides the option to recognize the cumulative effect as an adjustment to the opening balance of retained earnings in the year of adoption, while continuing to present all prior periods under the previous lease guidance. These updates also provide optional practical expedients in transition.

We adopted these updates effective January 1, 2019 by recording a lease liability and right-of-use asset related to office space, copiers, reserved areas and equipment at data centers, and other agreements. We will continue to present all prior periods under the previous lease guidance. We elected the "package of practical expedients," which permits us to maintain our prior conclusions about lease identification, classification and initial direct costs. We also elected the short-term lease exception, which allows us to exclude contracts with a lease term of 12 months or less, including any reasonably certain renewal options, from consideration under the new guidance. This update did not have a material effect on our consolidated financial statements.

Derivatives and Hedging (ASU 2018-16)
The amendments in this update allow entities to use the Overnight Index Swap rate based on the Secured Overnight Financing Rate as a U.S. benchmark interest rate for hedge accounting purposes, in addition to the previously acceptable rates. We adopted this update prospectively for qualifying new or redesignated hedging relationships entered into on or after January 1, 2019. This update did not have an effect on our consolidated financial statements.

Stock Compensation – Nonemployee Share-Based Payments (ASU 2018-07)
The amendments in this update simplify the accounting for share-based payments to nonemployees by aligning with the accounting for share-based payments to employees, with certain exceptions. We adopted this update on a modified retrospective basis effective January 1, 2019. This update did not have a material effect on our consolidated financial statements.

Recently Issued Accounting Pronouncements

Financial Instruments – Credit Losses (ASU 2019-05, ASU 2019-04, ASU 2018-19 and ASU 2016-13)
This update will limit the number of credit impairment models used for different assets and will result in accelerated credit loss recognition on assets held at amortized cost, which includes our commercial and residential mortgage loans. The identification of purchased credit-deteriorated financial assets will include 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 will be recognized immediately in the income statement. Available-for-sale (AFS) securities are not in scope of the new credit loss model, but will undergo targeted improvements to the current reporting model including the establishment of a valuation allowance for credit losses versus the current direct write down approach. We will adopt this update effective January 1, 2020 with a cumulative-effect adjustment that will decrease retained earnings by approximately $216 million on a pre-tax basis, excluding the offsetting impacts to DAC, DSI, VOBA and the SOP 03-1 reserve, as a result of further refinement of our models and assumptions. The adjustment to retained earnings primarily relates to the establishment of an allowance on our commercial mortgage loan portfolio, which will represent approximately 1.72% 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.

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. The update is effective January 1, 2020. We do not expect the adoption of this update will 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 will be required to adopt this update retrospectively with a cumulative-effect adjustment to retained earnings at the beginning of the earliest period presented. The update is effective January 1, 2020. We do not expect the adoption of this update will 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. The update is effective January 1, 2020 and will be adopted prospectively. We do not expect the adoption of this update will 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. We early adopted the removal and modification of certain disclosures as permitted. The additional disclosures in the update are effective January 1, 2020. We do not expect the adoption of this update will have a material effect on our consolidated financial statements.

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 utilized 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 the Company's 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 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.

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 will be 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 will continue to have the option to perform a qualitative assessment to determine if a quantitative impairment test is necessary. The update is effective January 1, 2020 and will be adopted prospectively. We do not expect the adoption of this update will have a material effect on our consolidated financial statements.

2. Investments

AFS Securities—The following table represents the amortized cost, gross unrealized gains and losses, fair value and OTTI in 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

	December 31, 2018				
(In millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	OTTI in AOCI
AFS securities					
U.S. government and agencies	$ 57	$ —	$ —	$ 57	$ —
U.S. state, municipal and political subdivisions	1,183	117	(7)	1,293	—
Foreign governments	162	2	(3)	161	—
Corporate	38,018	394	(1,315)	37,097	1
CLO	5,658	2	(299)	5,361	—
ABS	4,915	53	(48)	4,920	—
CMBS	2,390	27	(60)	2,357	7
RMBS	7,642	413	(36)	8,019	11
Total AFS securities	60,025	1,008	(1,768)	59,265	19
AFS securities – related party					
CLO	587	—	(25)	562	—
ABS	875	4	(4)	875	—
Total AFS securities – related party	1,462	4	(29)	1,437	—
Total AFS securities including related party	$ 61,487	$ 1,012	$ (1,797)	$ 60,702	$ 19

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

	December 31, 2019	
(In millions)	Amortized Cost	Fair Value
AFS securities		
Due in one year or less	$ 1,108	$ 1,113
Due after one year through five years	9,175	9,479
Due after five years through ten years	11,274	11,931
Due after ten years	24,204	26,609
CLO, ABS, CMBS and RMBS	21,718	22,242
Total AFS securities	67,479	71,374
AFS securities – related party		
Due after one year through five years	18	19
CLO and ABS	3,765	3,785
Total AFS securities – related party	3,783	3,804
Total AFS securities including related party	$ 71,262	$ 75,178

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, aggregated by class of security 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)

	December 31, 2018					
	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	$ 32	$ —	$ 2	$ —	$ 34	$ —
U.S. state, municipal and political subdivisions	139	(2)	82	(5)	221	(7)
Foreign governments	97	(2)	15	(1)	112	(3)
Corporate	20,213	(942)	4,118	(373)	24,331	(1,315)
CLO	5,054	(297)	90	(2)	5,144	(299)
ABS	1,336	(23)	506	(25)	1,842	(48)
CMBS	932	(27)	497	(33)	1,429	(60)
RMBS	1,417	(31)	140	(5)	1,557	(36)
Total AFS securities	29,220	(1,324)	5,450	(444)	34,670	(1,768)
AFS securities – related party						
CLO	534	(25)	—	—	534	(25)
ABS	306	(2)	116	(2)	422	(4)
Total AFS securities – related party	840	(27)	116	(2)	956	(29)
Total AFS securities including related party	$ 30,060	$ (1,351)	$ 5,566	$ (446)	$ 35,626	$ (1,797)

As of December 31, 2019, we held 1,239 AFS securities that were in an unrealized loss position. Of this total, 493 were in an unrealized loss position 12 months or more. As of December 31, 2019, we held 47 related party AFS securities that were in an unrealized loss position. Of this total, fifteen 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.

Other-Than-Temporary Impairments—For the year ended December 31, 2019, we incurred $38 million of net OTTI, of which $25 million related to intent-to-sell impairments. The net remaining OTTI of $13 million related to credit impairments where a portion was bifurcated in AOCI. Any credit loss impairments not bifurcated in AOCI are excluded from the rollforward below.

The following table represents a rollforward of the cumulative amounts recognized on the consolidated statements of income for OTTI related to pre-tax credit loss impairments on AFS securities, for which a portion of the securities' total OTTI was recognized in AOCI:

	Years ended December 31,		
(In millions)	2019	2018	2017
Beginning balance	$ 10	$ 14	$ 16
Initial impairments – credit loss OTTI recognized on securities not previously impaired	11	3	17
Additional impairments – credit loss OTTI recognized on securities previously impaired	2	2	—
Reduction in impairments from securities sold, matured or repaid	—	(9)	(13)
Reduction for credit loss that no longer has a portion of the OTTI loss recognized in AOCI	—	—	(6)
Ending balance	$ 23	$ 10	$ 14

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

	Years ended December 31,		
(In millions)	2019	2018	2017
AFS securities	$ 3,088	$ 2,855	$ 2,579
Trading securities	189	200	200
Equity securities	16	12	14
Mortgage loans	670	457	371
Investment funds	308	231	211
Funds withheld at interest	527	492	148
Other	159	112	78
Investment revenue	4,957	4,359	3,601
Investment expenses	(435)	(355)	(332)
Net investment income	$ 4,522	$ 4,004	$ 3,269

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

	Years ended December 31,		
(In millions)	2019	2018	2017
AFS securities			
Gross realized gains on investment activity	$ 178	$ 165	$ 169
Gross realized losses on investment activity	(56)	(151)	(72)
Net realized investment gains on AFS securities	122	14	97
Net recognized investment gains (losses) on trading securities	152	(255)	29
Net recognized investment gains (losses) on equity securities	17	(19)	88
Derivative gains (losses)	4,443	(1,099)	2,377
Other gains (losses)	18	35	(19)
Investment related gains (losses)	$ 4,752	$ (1,324)	$ 2,572

Proceeds from sales of AFS securities were $6,886 million, $6,547 million and $5,720 million for the years ended December 31, 2019, 2018 and 2017, respectively. Proceeds from sales of AFS securities for the years ended December 31, 2018 and 2017 have been revised for immaterial misstatements to be comparable to current year balances.

The following table summarizes the change in unrealized gains (losses) on trading and equity securities, including related party and consolidated VIEs, we held as of the respective year end:

	Years ended December 31,		
(In millions)	2019	2018	2017
Trading securities	$ 193	$ (143)	$ 107
Trading securities – related party	(21)	(25)	(3)
VIE trading securities – related party	3	—	4
Equity securities	19	(18)	32
Equity securities – related party	(17)	—	—
VIE equity securities – related party	(1)	24	25

Purchased Credit Impaired Investments—The following table summarizes our PCI investments:

	Fixed maturity securities		Mortgage loans	
	December 31,		December 31,	
(In millions)	2019	2018	2019	2018
Contractually required payments receivable	$ 6,772	$ 8,179	$ 3,647	$ 2,675
Less: Cash flows expected to be collected[1]	(6,064)	(7,195)	(3,606)	(2,628)
Non-accretable difference	$ 708	$ 984	$ 41	$ 47
Cash flows expected to be collected[1]	$ 6,064	$ 7,195	$ 3,606	$ 2,628
Less: Amortized cost	(4,603)	(5,518)	(2,575)	(1,931)
Accretable difference	$ 1,461	$ 1,677	$ 1,031	$ 697
Fair value	$ 5,007	$ 5,828	$ 2,756	$ 1,933
Outstanding balance	5,740	6,773	2,925	2,210

[1] *Represents the undiscounted principal and interest cash flows expected.*

During the respective years ended December 31, we acquired PCI investments with the following amounts at the time of purchase:

	Fixed maturity securities		Mortgage loans	
(In millions)	2019	2018	2019	2018
Contractually required payments receivable	$ 176	$ 623	$ 1,198	$ 1,625
Cash flows expected to be collected	146	562	1,179	1,601
Fair value	124	454	910	1,178

The following table summarizes the activity for the accretable yield on PCI investments:

	Fixed maturity securities		Mortgage loans	
(In millions)	2019	2018	2019	2018
Beginning balance at January 1	$ 1,677	$ 2,020	$ 697	$ 273
Purchases of PCI investments, net of sales	1	65	191	407
Accretion	(307)	(405)	(115)	(48)
Net reclassification from (to) non-accretable difference	90	(3)	258	65
Ending balance at December 31	$ 1,461	$ 1,677	$ 1,031	$ 697

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

	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 consolidated balance sheets.*

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

	December 31, 2019	
(In millions)	Amortized Cost	Fair Value
AFS securities – Corporate	$ 498	$ 534
Total securities pledged under repurchase agreements	$ 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 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 December 31, 2019 and 2018, amounts loaned under reverse repurchase agreements were $190 million and $0 million, respectively, and collateral received was $630 million and $0 million, respectively.

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

	December 31,	
(In millions)	2019	2018
Commercial mortgage loans	$ 10,412	$ 7,217
Commercial mortgage loans under development	93	80
Total commercial mortgage loans	10,505	7,297
Residential mortgage loans	4,454	3,334
Mortgage loans, net of allowances	$ 14,959	$ 10,631

We primarily invest in commercial mortgage loans on income producing properties including office and retail buildings, hotels, industrial properties and apartments. 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 valuation allowances, by property type and geographic region, is as follows:

	December 31,			
	2019		2018	
(In millions, except for percentages)	Net Carrying Value	Percentage of Total	Net Carrying Value	Percentage of Total
Property type				
Office building	$ 2,899	27.6%	$ 2,221	30.5%
Retail	2,182	20.8%	1,660	22.7%
Apartment	2,142	20.4%	791	10.8%
Hotels	1,104	10.5%	1,040	14.3%
Industrial	1,448	13.8%	1,196	16.4%
Other commercial	730	6.9%	389	5.3%
Total commercial mortgage loans	$ 10,505	100.0%	$ 7,297	100.0%
U.S. Region				
East North Central	$ 1,036	9.9%	$ 855	11.7%
East South Central	428	4.1%	295	4.0%
Middle Atlantic	2,580	24.6%	1,131	15.5%
Mountain	528	5.0%	616	8.4%
New England	340	3.2%	374	5.1%
Pacific	2,502	23.8%	1,540	21.1%
South Atlantic	1,920	18.3%	1,468	20.2%
West North Central	146	1.4%	173	2.4%
West South Central	791	7.5%	845	11.6%
Total U.S. Region	10,271	97.8%	7,297	100.0%
International Region	234	2.2%	—	—%
Total commercial mortgage loans	$ 10,505	100.0%	$ 7,297	100.0%

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

	December 31,	
	2019	2018
U.S. States		
California	27.0%	30.3%
Florida	12.7%	16.3%
Texas	6.2%	3.3%
New York	3.3%	7.7%
Other[1]	38.4%	42.4%
Total U.S. percentage	87.6%	100.0%
International percentage – Ireland	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.*

Mortgage Loan Valuation Allowance—The assessment of mortgage loan impairments and valuation allowances is substantially the same for residential and commercial mortgage loans. As of December 31, 2019 and 2018, the valuation allowance was $11 million and $2 million, respectively. We did not record any material activity in the valuation allowance during the years ended December 31, 2019, 2018 or 2017.

Residential mortgage loans – The primary credit quality indicator of residential mortgage loans is loan performance. Nonperforming residential mortgage loans are 90 days or more past due and/or are in non-accrual status. As of December 31, 2019 and 2018, $67 million and $48 million, respectively, of our residential mortgage loans were nonperforming.

Commercial mortgage loans – As of December 31, 2019 and 2018, none of our commercial loans were 30 days or more past due.

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

	December 31,	
(In millions)	2019	2018
Less than 50%	$ 2,640	$ 1,883
50% to 60%	2,486	1,988
61% to 70%	4,093	2,394
71% to 80%	1,162	898
81% to 100%	31	54
Commercial mortgage loans	$ 10,412	$ 7,217

The debt service coverage ratio, based upon the most recent financial statements, 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. The following represents the debt service coverage ratio of the commercial mortgage loan portfolio, excluding those under development, net of valuation allowances:

	December 31,	
(In millions)	2019	2018
Greater than 1.20x	$ 9,212	$ 6,576
1.00x – 1.20x	1,166	474
Less than 1.00x	34	167
Commercial mortgage loans	$ 10,412	$ 7,217

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, which are discussed further in *Note 4 – Variable Interest Entities*. Our investment funds do not specify timing of distributions on the funds' underlying assets.

The following summarizes our investment funds, including related party and those owned by consolidated VIEs:

	December 31, 2019		December 31, 2018[1]	
(In millions, except for percentages and years)	Carrying Value	Percent of Total	Carrying Value	Percent of Total
Investment funds				
Real estate	$ 277	37.9%	$ 215	30.6%
Credit funds	153	20.9%	172	24.5%
Private equity	236	32.3%	253	36.0%
Real assets	64	8.8%	56	7.9%
Natural resources	1	0.1%	4	0.6%
Other	—	—%	3	0.4%
Total investment funds	731	100.0%	703	100.0%
Investment funds – related parties				
Differentiated investments				
AmeriHome Mortgage Company, LLC (AmeriHome)[2]	487	16.9%	463	20.7%
Catalina Holdings Ltd. (Catalina)	271	9.4%	233	10.4%
Athora Holding Ltd. (Athora)[2]	132	4.6%	105	4.7%
Venerable Holdings, Inc. (Venerable)[2]	99	3.4%	92	4.1%
Other	222	7.7%	196	8.8%
Total differentiated investments	1,211	42.0%	1,089	48.7%
Real estate	736	25.6%	497	22.3%
Credit funds	370	12.8%	316	14.2%
Private equity	105	3.6%	18	0.8%
Real assets	182	6.3%	145	6.5%
Natural resources	163	5.6%	104	4.7%
Public equities	119	4.1%	63	2.8%
Total investment funds – related parties	2,886	100.0%	2,232	100.0%
Investment funds owned by consolidated VIEs				
MidCap FinCo Designated Activity Company (MidCap)[2]	547	80.1%	553	88.6%
Real estate	117	17.1%	30	4.8%
Real assets	19	2.8%	41	6.6%
Total investment funds owned by consolidated VIEs	683	100.0%	624	100.0%
Total investment funds including related parties and funds owned by consolidated VIEs	$ 4,300		$ 3,559	

[1] *Certain reclassifications have been made to conform with current year presentation.*

[2] *See further discussion on AmeriHome, Athora, Venerable and MidCap in Note 14 – Related Parties.*

Summarized Ownership of Investment Funds—The following is the aggregated summarized financial information of equity method investees, including those for which we elected the fair value option and would otherwise be accounted for as an equity method investment, and may be presented on a lag due to the availability of financial information from the investee:

	December 31,	
(In millions)	2019	2018
Assets	$ 50,563	$ 40,630
Liabilities	31,821	24,241
Equity	18,742	16,389

	Years ended December 31,		
(In millions)	2019	2018	2017
Net income	$ 817	$ 1,159	$ 1,587

The following table presents the carrying value by ownership percentage of equity method investment funds, including related party investment funds and investment funds owned by consolidated VIEs:

(In millions)	December 31, 2019	December 31, 2018
Ownership Percentage		
100%	$ 11	$ 17
50% – 99%	1,378	1,044
3% – 49%	1,938	1,617
Equity method investment funds	$ 3,327	$ 2,678

The following table presents the carrying value by ownership percentage of investment funds held at fair value, either due to election of the fair value option or requirement, including related party investment funds and investment funds owned by consolidated VIEs:

(In millions)	December 31, 2019	December 31, 2018
Ownership Percentage		
50% – 99%	$ 28	$ —
3% – 49%	772	687
Less than 3%	173	194
Fair value investment funds	$ 973	$ 881

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:

	December 31,			
	2019		2018	
(In millions)	Carrying Value	Maximum Loss Exposure	Carrying Value	Maximum Loss Exposure
Investment funds	$ 731	$ 1,246	$ 703	$ 1,329
Investment in related parties – investment funds	2,886	5,113	2,232	4,331
Assets of consolidated VIEs – investment funds	683	861	624	727
Investment in fixed maturity securities	22,694	22,170	21,188	21,139
Investment in related parties – fixed maturity securities	4,570	4,878	1,686	1,788
Investment in related parties – equity securities	58	58	120	120
Total non-consolidated investments	$ 31,622	$ 34,326	$ 26,553	$ 29,434

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 1 – Business, Basis of Presentation and Significant Accounting Policies* for a description of our accounting policies for derivatives and *Note 5 – Fair Value* for information about the fair value hierarchy for derivatives.

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

	December 31,					
	2019			2018		
		Fair Value			Fair Value	
(In millions)	Notional Amount	Assets	Liabilities	Notional Amount	Assets	Liabilities
Derivatives designated as hedges						
Foreign currency swaps	3,158	$ 113	$ 56	2,041	$ 83	$ 55
Foreign currency forwards	717	1	9	85	—	1
Foreign currency forwards on net investments	139	—	2	—	—	—
Total derivatives designated as hedges		114	67		83	56
Derivatives not designated as hedges						
Equity options	49,549	2,746	5	49,821	942	11
Futures	8	10	1	4	9	3
Total return swaps	106	6	—	62	—	3
Foreign currency swaps	35	2	1	38	3	2
Interest rate swaps	776	3	4	326	—	1
Credit default swaps	10	—	3	10	—	4
Foreign currency forwards	1,924	7	16	646	6	5
Embedded derivatives						
Funds withheld including related party		1,395	31		(53)	(1)
Interest sensitive contract liabilities		—	10,942		—	7,969
Total derivatives not designated as hedges		4,169	11,003		907	7,997
Total derivatives		$ 4,283	$ 11,070		$ 990	$ 8,053

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 years ended December 31, 2019, 2018 and 2017, we had foreign currency swap gains of $29 million and $146 million and losses of $105 million, respectively, recorded in AOCI. There were no amounts reclassified to income and no amounts deemed ineffective for the years ended December 31, 2019, 2018 or 2017. As of December 31, 2019, 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 December 31, 2019 and 2018, the carrying amount of the hedged AFS securities was $456 million and $88 million, respectively, and the cumulative amount of fair value hedging adjustments included in the hedged AFS securities included gains of $1 million and $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 consolidated statements of income. During the years ended December 31, 2019 and 2018, the derivatives had gains of $2 million and losses of $1 million, respectively, and the related hedged items had gains of $0 million and $1 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 year ended December 31, 2019, these derivatives had losses of $2 million, which are included in foreign currency translation and other adjustments on the consolidated statements of comprehensive income. As of December 31, 2019, the cumulative foreign currency translation loss recorded in AOCI related to these net investment hedges was $2 million. There were no amounts deemed ineffective for the year ended December 31, 2019.

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 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:

	Years ended December 31,		
(In millions)	2019	2018	2017
Equity options	$ 2,169	$ (877)	$ 1,939
Futures	(13)	2	(24)
Swaps	43	(8)	27
Foreign currency forwards	(2)	16	28
Embedded derivatives on funds withheld	2,246	(232)	407
Amounts recognized in investment related gains (losses)	4,443	(1,099)	2,377
Embedded derivatives in indexed annuity products[1]	(2,526)	923	(1,744)
Total gains (losses) on derivatives not designated as hedges	$ 1,917	$ (176)	$ 633

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

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:

(In millions)	Gross amount recognized[1]	Gross amounts not offset on the consolidated balance sheets: Financial instruments[2]	Gross amounts not offset on the consolidated balance sheets: Collateral received/pledged	Net amount	Off-balance sheet securities collateral[3]	Net amount after securities collateral
December 31, 2019						
Derivative assets	$ 2,888	$ (67)	$ (2,743)	$ 78	$ (145)	$ (67)
Derivative liabilities	(97)	67	31	1	—	1
December 31, 2018						
Derivative assets	$ 1,043	$ (52)	$ (969)	$ 22	$ (4)	$ 18
Derivative liabilities	(85)	52	24	(9)	—	(9)

[1] *The gross amounts of recognized derivative assets and derivative liabilities are reported on the consolidated balance sheets. As of December 31, 2019 and 2018, 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 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.*

Certain derivative instruments contain provisions for credit-related events, such as downgrades in our credit ratings or for a negative credit event of a credit default swap's reference entity. If a credit event were to occur, we may be required to settle an outstanding liability. The following is a summary of our exposure to credit-related events:

(In millions)	December 31, 2019	December 31, 2018
Fair value of derivative liabilities with credit related provisions	$ 3	$ 4
Maximum exposure for credit default swaps	10	10

As of December 31, 2019 and 2018, no additional collateral would be required if a default or termination event were to occur.

4. Variable Interest Entities

We consolidate the following investment funds as VIEs:

- 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);
- ALR Aircraft Investment Ireland Limited (ALR); and
- Entities included under our agreement to purchase funds managed by Apollo entities (Strategic Partnership). See *Note 14 – Related Parties* for further discussion on the Strategic Partnership.

We are the only limited partner or holder of profit participating notes in these investment funds and receive all of the economic benefits and losses, other than management fees and carried interest, as applicable, paid to the general partner in each entity, or a related entity, which are related parties. We do not have any voting rights as limited partner and, as the limited partner or holder of profit participating notes, do not solely satisfy the power criteria to direct the activities that significantly impact the economics of the VIE. However, the criteria for the primary beneficiary are satisfied by our related party group and, because substantially all of the activities are conducted on our behalf, we consolidate the investment funds.

No arrangement exists requiring us to provide additional funding in excess of our committed capital investment, liquidity, or the funding of losses or an increase to our loss exposure in excess of our investment in the VIEs. We elected the fair value option for certain fixed maturity and equity securities, and investment funds, which are reported in the consolidated variable interest entity sections on the consolidated balance sheets.

CoInvest VI, CoInvest VII and CoInvest Other were formed to make investments, including co-investments alongside private equity funds sponsored by Apollo. Investments held by CoInvest VI, CoInvest VII and CoInvest Other are related party investments because Apollo affiliates exercise significant influence over the management or operations of the investees. We received our interests in CoInvest VI, CoInvest VII and CoInvest Other as part of a contribution agreement in 2012 with AAA Guarantor – Athene, L.P. (AAA Investor) and its subsidiary, Apollo Life Re Ltd., in order to provide a capital base to support future acquisitions.

ALR was formed to invest in a joint venture that provides airplane lease financing to a major commercial airline. We are the only investor in the profit participating notes and, as substantially all of the activities of ALR are conducted on our behalf, we are the primary beneficiary and consolidate ALR.

5. 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:

	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	92	—	—	92	—
CMBS	51	—	—	51	—
RMBS	303	—	—	251	52
Total trading securities	2,054	—	8	1,988	58
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	4,237	—	4,237	—	—
Restricted cash	402	—	402	—	—
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	58	—	—	—	58
Investment funds	252	120	—	—	132
Funds withheld at interest – embedded derivative	594	—	—	—	594
Reinsurance recoverable	1,821	—	—	—	1,821
Assets of consolidated VIEs					
Trading securities	16	—	—	—	16
Equity securities	6	—	—	—	6
Investment funds	567	567	—	—	—
Cash and cash equivalents	3	—	3	—	—
Total assets measured at fair value	$ 90,589	$ 819	$ 4,785	$ 76,027	$ 8,958

(Continued)

(In millions)	December 31, 2019 Total	NAV	Level 1	Level 2	Level 3
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)

(In millions)	December 31, 2018 Total	NAV	Level 1	Level 2	Level 3
Assets					
AFS securities					
U.S. government and agencies	$ 57	$ —	$ 54	$ 3	$ —
U.S. state, municipal and political subdivisions	1,293	—	—	1,293	—
Foreign governments	161	—	—	161	—
Corporate	37,097	—	—	36,199	898
CLO	5,361	—	—	5,254	107
ABS	4,920	—	—	3,305	1,615
CMBS	2,357	—	—	2,170	187
RMBS	8,019	—	—	7,963	56
Total AFS securities	59,265	—	54	56,348	2,863
Trading securities					
U.S. government and agencies	5	—	3	2	—
U.S. state, municipal and political subdivisions	126	—	—	126	—
Corporate	1,287	—	—	1,287	—
CLO	9	—	—	8	1
ABS	87	—	—	87	—
CMBS	49	—	—	49	—
RMBS	386	—	—	252	134
Total trading securities	1,949	—	3	1,811	135
Equity securities	216	—	40	173	3
Mortgage loans	32	—	—	—	32
Investment funds	182	153	—	—	29
Funds withheld at interest – embedded derivative	57	—	—	—	57
Derivative assets	1,043	—	9	1,034	—
Short-term investments	191	—	66	125	—
Other investments	52	—	—	52	—
Cash and cash equivalents	2,911	—	2,911	—	—
Restricted cash	492	—	492	—	—

(Continued)

	December 31, 2018				
(In millions)	Total	NAV	Level 1	Level 2	Level 3
Investments in related parties					
AFS securities					
CLO	562	—	—	562	—
ABS	875	—	—	547	328
Total AFS securities – related party	1,437	—	—	1,109	328
Trading securities					
CLO	100	—	—	22	78
ABS	149	—	—	—	149
Total trading securities – related party	249	—	—	22	227
Equity securities	120	—	—	—	120
Investment funds	201	96	—	—	105
Funds withheld at interest – embedded derivative	(110)	—	—	—	(110)
Reinsurance recoverable	1,676	—	—	—	1,676
Assets of consolidated VIEs					
Trading securities	35	—	—	—	35
Equity securities	50	—	37	—	13
Investment funds	567	552	—	—	15
Cash and cash equivalents	2	—	2	—	—
Total assets measured at fair value	$ 70,617	$ 801	$ 3,614	$ 60,674	$ 5,528
Liabilities					
Interest sensitive contract liabilities					
Embedded derivative	$ 7,969	$ —	$ —	$ —	$ 7,969
Universal life benefits	932	—	—	—	932
Future policy benefits					
AmerUs Closed Block	1,443	—	—	—	1,443
ILICO Closed Block and life benefits	730	—	—	—	730
Derivative liabilities	85	—	3	78	4
Funds withheld liability – embedded derivative	(1)	—	—	(1)	—
Total liabilities measured at fair value	$ 11,158	$ —	$ 3	$ 77	$ 11,078

(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 and consolidated VIEs:

	Years ended December 31,		
(In millions)	2019	2018	2017
Trading securities	$ 152	$ (255)	$ 30
Mortgage loans	—	—	(1)
Investment funds	(3)	37	35
Future policy benefits	(103)	182	(19)
Total gains (losses)	$ 46	$ (36)	$ 45

Gains and losses on trading securities are recorded in investment related gains (losses) on the consolidated statements of income. 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 consolidated statements of income. Gains and losses related to investment funds, including related party investment funds, are recorded in net investment income on the consolidated statements of income. We record the change in fair value of future policy benefits to future policy and other policy benefits on the consolidated statements of income.

The following summarizes information for fair value option mortgage loans:

	December 31,	
(In millions)	2019	2018
Unpaid principal balance	$ 25	$ 30
Mark to fair value	2	2
Fair value	$ 27	$ 32

There were no fair value option mortgage loans 90 days or more past due as of December 31, 2019 and 2018.

Level 3 Financial Instruments—The following is a reconciliation for all Level 3 assets and liabilities measured at fair value on a recurring basis

	Year ended December 31, 2019							
		Total realized and unrealized gains (losses)			Transfers			
(In millions)	Beginning balance	Included in income	Included in OCI	Net purchases, issuances, sales and settlements	In	Out	Ending balance	Total gains (losses) included in earnings[1]
Assets								
AFS securities								
U.S. state, municipal and political subdivisions	$ —	$ —	$ —	$ 40	$ —	$ —	$ 40	$ —
Corporate	898	14	12	(61)	5	(143)	725	—
CLO	107	—	3	50	—	(39)	121	—
ABS	1,615	7	32	120	30	(430)	1,374	—
CMBS	187	2	7	(131)	—	(19)	46	—
RMBS	56	2	2	(13)	—	(47)	—	—
Trading securities								
CLO	1	—	—	—	5	—	6	6
RMBS	134	(21)	—	10	4	(75)	52	1
Equity securities	3	—	—	—	—	—	3	—
Mortgage loans	32	—	—	(5)	—	—	27	—
Investment funds	29	(3)	—	(4)	—	—	22	(3)
Funds withheld at interest – embedded derivative	57	744	—	—	—	—	801	—
Short-term investments	—	—	—	41	—	—	41	—
Investments in related parties								
AFS securities, ABS	328	2	22	2,076	—	(104)	2,324	—
Trading securities								
CLO	78	(7)	—	(14)	17	(36)	38	2
ABS	149	(14)	—	473	103	—	711	(6)
Equity securities	120	—	—	(62)	—	—	58	—
Investment funds	105	8	—	19	—	—	132	8
Funds withheld at interest – embedded derivative	(110)	704	—	—	—	—	594	—
Reinsurance recoverable	1,676	145	—	—	—	—	1,821	—
Investments of consolidated VIEs								
Trading securities	35	—	—	(44)	25	—	16	1
Equity securities	13	(2)	—	(5)	—	—	6	(1)
Investment funds	15	(1)	—	—	—	(14)	—	(1)
Total Level 3 assets	$ 5,528	$ 1,580	$ 78	$ 2,490	$ 189	$ (907)	$ 8,958	$ 7
Liabilities								
Interest sensitive contract liabilities								
Embedded derivative	$ (7,969)	$ (2,526)	$ —	$ (447)	$ —	$ —	$ (10,942)	$ —
Universal life benefits	(932)	(118)	—	—	—	—	(1,050)	—
Future policy benefits								
AmerUs Closed Block	(1,443)	(103)	—	—	—	—	(1,546)	—
ILICO Closed Block and life benefits	(730)	(25)	—	—	—	—	(755)	—
Derivative liabilities	(4)	1	—	—	—	—	(3)	1
Total Level 3 liabilities	$ (11,078)	$ (2,771)	$ —	$ (447)	$ —	$ —	$ (14,296)	$ 1

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

	Year ended December 31, 2018							
		Total realized and unrealized gains (losses)			Transfers			
(In millions)	Beginning balance	Included in income	Included in OCI	Net purchases, issuances, sales and settlements	In	Out	Ending balance	Total gains (losses) included in earnings[1]
Assets								
AFS securities								
Corporate	$ 578	$ (16)	$ (6)	$ 249	$ 97	$ (4)	$ 898	$ —
CLO	64	2	(2)	36	7	—	107	—
ABS	1,457	8	(11)	252	—	(91)	1,615	—
CMBS	137	1	—	132	15	(98)	187	—
RMBS	301	4	(11)	21	—	(259)	56	—
Trading securities								
U.S. state, municipal and political subdivisions	17	1	—	—	—	(18)	—	1
CLO	17	(9)	—	—	—	(7)	1	(6)
ABS	77	(6)	—	—	—	(71)	—	(2)
RMBS	342	(65)	—	—	—	(143)	134	5
Equity securities	8	2	—	(7)	—	—	3	2
Mortgage loans	41	—	—	(9)	—	—	32	—
Investment funds	41	(3)	—	(9)	—	—	29	(3)
Funds withheld at interest – embedded derivative	312	(255)	—	—	—	—	57	—
Investments in related parties								
AFS securities, ABS	4	—	(2)	326	—	—	328	—
Trading securities								
CLO	105	(13)	—	(18)	25	(21)	78	(5)
ABS	—	—	—	—	149	—	149	—
Equity securities	—	—	—	120	—	—	120	—
Investment funds	—	(3)	—	108	—	—	105	(3)
Funds withheld at interest – embedded derivative	—	(110)	—	—	—	—	(110)	—
Reinsurance recoverable	1,824	(148)	—	—	—	—	1,676	—
Investments of consolidated VIEs								
Trading securities	48	—	—	(13)	—	—	35	—
Equity securities	28	(12)	—	(3)	—	—	13	—
Investment funds	21	(3)	—	(3)	—	—	15	—
Total Level 3 assets	$ 5,422	$ (625)	$ (32)	$ 1,182	$ 293	$ (712)	$ 5,528	$ (11)
Liabilities								
Interest sensitive contract liabilities								
Embedded derivative	$ (7,411)	$ 923	$ —	$ (1,481)	$ —	$ —	$ (7,969)	$ —
Universal life benefits	(1,005)	73	—	—	—	—	(932)	—
Future policy benefits								
AmerUs Closed Block	(1,625)	182	—	—	—	—	(1,443)	—
ILICO Closed Block and life benefits	(803)	73	—	—	—	—	(730)	—
Derivative liabilities	(5)	1	—	—	—	—	(4)	1
Total Level 3 liabilities	$ (10,849)	$ 1,252	$ —	$ (1,481)	$ —	$ —	$ (11,078)	$ 1

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

The following represents the gross components of purchases, issuances, sales and settlements, net, shown above:

	Year ended December 31, 2019				
(In millions)	Purchases	Issuances	Sales	Settlements	Net purchases, issuances, sales and settlements
Assets					
AFS securities					
U.S. state, municipal and political subdivisions	$ 40	$ —	$ —	$ —	$ 40
Corporate	116	—	(3)	(174)	(61)
CLO	94	—	—	(44)	50
ABS	409	—	(172)	(117)	120
CMBS	—	—	(4)	(127)	(131)
RMBS	1	—	—	(14)	(13)
Trading securities, RMBS	10	—	—	—	10
Mortgage loans	—	—	—	(5)	(5)
Investment funds	—	—	(4)	—	(4)
Short-term investments	74	—	—	(33)	41
Investments in related parties					
AFS securities, ABS	2,207	—	—	(131)	2,076
Trading securities					
CLO	—	—	(14)	—	(14)
ABS	511	—	—	(38)	473
Equity securities	75	—	—	(137)	(62)
Investment funds	20	—	(1)	—	19
Investments of consolidated VIEs					
Trading securities	—	—	(44)	—	(44)
Equity securities	—	—	(5)	—	(5)
Total Level 3 assets	$ 3,557	$ —	$ (247)	$ (820)	$ 2,490
Liabilities					
Interest sensitive contract liabilities – embedded derivative	$ —	$ (937)	$ —	$ 490	$ (447)
Total Level 3 liabilities	$ —	$ (937)	$ —	$ 490	$ (447)

	Year ended December 31, 2018				
(In millions)	Purchases	Issuances	Sales	Settlements	Net purchases, issuances, sales and settlements
Assets					
AFS securities					
Corporate	$ 351	$ —	$ (29)	$ (73)	$ 249
CLO	67	—	—	(31)	36
ABS	599	—	(35)	(312)	252
CMBS	151	—	(3)	(16)	132
RMBS	56	—	—	(35)	21
Trading securities, CLO	7	—	(7)	—	—
Equity securities	1	—	(8)	—	(7)
Mortgage loans	—	—	—	(9)	(9)
Investment funds	—	—	—	(9)	(9)
Investments in related parties					
AFS securities, ABS	326	—	—	—	326
Trading securities, CLO	30	—	(48)	—	(18)
Equity securities	120	—	—	—	120
Investment funds	108	—	—	—	108
Investments of consolidated VIEs					
Trading securities	—	—	(13)	—	(13)
Equity securities	1	—	(4)	—	(3)
Investment funds	14	—	(17)	—	(3)
Total Level 3 assets	$ 1,831	$ —	$ (164)	$ (485)	$ 1,182
Liabilities					
Interest sensitive contract liabilities – embedded derivative	$ —	$ (1,888)	$ —	$ 407	$ (1,481)
Total Level 3 liabilities	$ —	$ (1,888)	$ —	$ 407	$ (1,481)

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. An increase in the discount rate can lower the fair value; a decrease in the discount rate can increase the fair value. As of December 31, 2019, discounts ranged from 3% to 9%, and as of December 31, 2018, discounts ranged from 5% to 9%. 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 the embedded derivatives of fixed indexed annuities:

	December 31, 2019				
(In millions, except for percentages)	Fair value	Valuation technique	Unobservable inputs	Input/range of inputs	Impact of an increase in the input on fair value
Interest sensitive contract liabilities – fixed indexed annuities embedded derivatives	$ 10,942	Option budget method	Nonperformance risk	0.2% – 1.1%	Decrease
			Option budget	0.7% – 3.7%	Increase
			Surrender rate	3.5% – 8.1%	Decrease

	December 31, 2018				
(In millions, except for percentages)	Fair value	Valuation technique	Unobservable inputs	Input/range of inputs	Impact of an increase in the input on fair value
Interest sensitive contract liabilities – fixed indexed annuities embedded derivatives	$ 7,969	Option budget method	Nonperformance risk	0.3% – 1.5%	Decrease
			Option budget	0.7% – 3.7%	Increase
			Surrender rate	3.6% – 7.3%	Decrease

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

	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	577	577	577	—	—	—
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	2,634	2,634	2,634	—	—	—
Funds withheld at interest	12,626	12,626	—	—	—	12,626
Other investments	487	537	—	—	—	537
Assets of consolidated VIEs						
Investment funds	116	116	116	—	—	—
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

	December 31, 2018					
(In millions)	Carrying Value	Fair Value	NAV	Level 1	Level 2	Level 3
Financial assets						
Mortgage loans	$ 10,308	$ 10,424	$ —	$ —	$ —	$ 10,424
Investment funds	521	521	521	—	—	—
Policy loans	488	488	—	—	488	—
Funds withheld at interest	14,966	14,966	—	—	—	14,966
Other investments	70	70	—	—	—	70
Investments in related parties						
Mortgage loans	291	290	—	—	—	290
Investment funds	2,031	2,031	2,031	—	—	—
Funds withheld at interest	13,687	13,687	—	—	—	13,687
Other investments	386	361	—	—	—	361
Assets of consolidated VIEs						
Investment funds	57	57	57	—	—	—
Total financial assets not carried at fair value	$ 42,805	$ 42,895	$ 2,609	$ —	$ 488	$ 39,798
Financial liabilities						
Interest sensitive contract liabilities	$ 54,655	$ 51,655	$ —	$ —	$ —	$ 51,655
Long-term debt	991	910	—	—	910	—
Funds withheld liability	722	722	—	—	722	—
Total financial liabilities not carried at fair value	$ 56,368	$ 53,287	$ —	$ —	$ 1,632	$ 51,655

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 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.

6. Reinsurance

The following summarizes the effect of reinsurance on premiums and future policy and other policy benefits on the consolidated statements of income:

	Years ended December 31,		
(In millions)	2019	2018	2017
Premiums			
Direct	$ 5,449	$ 2,813	$ 2,700
Reinsurance assumed	1,092	1,066	21
Reinsurance ceded	(159)	(417)	(195)
Total premiums	$ 6,382	$ 3,462	$ 2,526
Future policy and other policy benefits			
Direct	$ 6,697	$ 3,739	$ 3,537
Reinsurance assumed	1,223	1,093	37
Reinsurance ceded	(333)	(551)	(313)
Total future policy and other policy benefits	$ 7,587	$ 4,281	$ 3,261

Reinsurance typically provides for recapture rights on the part of the ceding company for certain events of default. Additionally, some agreements require us to place assets in trust accounts for the benefit of the ceding entity. The required minimum assets are equal to or greater than statutory reserves, as defined by the agreement, and were $8,377 million and $5,719 million as of December 31, 2019 and 2018, respectively. Although we own the assets placed in trust, their use is restricted based on the trust agreement terms. If the statutory book value of the assets, or in certain cases fair value, in a trust declines because of impairments or other reasons, we may be required to contribute additional assets to the trust. In addition, the assets within a trust may be subject to a pledge in favor of the applicable reinsurance company.

Reinsurance transactions

We have entered into various coinsurance and modco agreements to reinsure blocks of fixed deferred and fixed indexed and PRT annuities. The following summarizes those agreements at inception:

	Years ended December 31,	
(In millions)	2019	2018
Liabilities assumed	$ 791	$ 27,238
Less: Assets received	818	26,255
Ceding commission (paid) received	—	(660)
Net cost of reinsurance	$ (27)	$ 1,643
DAC	$ —	$ 1,777
Unearned revenue reserve[1]	—	(69)
Deferred profit liability[2]	(27)	(65)
Net cost of reinsurance	$ (27)	$ 1,643

[1] *Included within interest sensitive contract liabilities on the consolidated balance sheets.*

[2] *Included within future policy benefits on the consolidated balance sheets.*

DAC and unearned revenue reserve balances are amortized over the life of the reinsurance agreements on a basis consistent with our DAC amortization policy. The deferred profit liability balance is amortized over the life of the reinsurance agreement on a constant relationship to the benefit reserves.

Certain of these reinsurance agreements were with related parties. See *Note 14 – Related Parties* for further information.

Global Atlantic – We have a 100% coinsurance and assumption agreement with Global Atlantic. The agreement ceded all existing open block life insurance business issued by Athene Annuity and Life Company (AAIA), with the exception of enhanced guarantee universal life insurance products. We also entered into a 100% coinsurance agreement with Global Atlantic to cede all policy liabilities of the ILICO Closed Block. The ILICO Closed Block consists primarily of participating whole life insurance policies. We also have an excess of loss arrangement with Global Atlantic to reimburse us for any payments required from our general assets to meet the contractual obligations of the AmerUs Closed Block not covered by existing reinsurance through Athene Re USA IV. The AmerUs Closed Block consists primarily of participating whole life insurance policies. Since all liabilities were covered by the existing reinsurance at close, no reinsurance premiums were ceded. The assets backing the AmerUs Closed Block are managed, on AAIA's behalf, by Goldman Sachs Asset Management, an affiliate of Global Atlantic.

As of December 31, 2019 and 2018, Global Atlantic maintained a series of trust and custody accounts under the terms of these agreements with assets equal to or greater than a required aggregate statutory balance of $3,478 million and $3,967 million, respectively.

Protective Life Insurance Company (Protective) – We reinsured substantially all of the existing life and health business of Athene Annuity & Life Assurance Company (AADE) to Protective under a coinsurance agreement in 2011. As of December 31, 2019 and 2018, Protective maintained a trust for our benefit with assets having a fair value of $1,640 million and $1,525 million, respectively.

Novations—We have novated certain open blocks of business ceded to Global Atlantic, in accordance with the terms of the coinsurance and assumption agreement. Additionally, we have novated the reinsurance agreement for blocks of endowment contracts and annuities assumed from Athora Lebensversicherung AG (ALV) to Athora Life Re Ltd. (ARE). The below table summarizes the decreases in amounts on the consolidated balance sheets as a result of the novations. Novations during the year ended December 31, 2018 did not have a material effect on the consolidated balance sheets.

(In millions)	Year ended December 31, 2019
Interest sensitive contract liabilities	$ 407
Future policy benefits	305
Funds withheld liability	347
Investments	320
Policy loans	38
Reinsurance recoverable	674
Other assets and liabilities	27

Reinsurance Recoverables—The following summarizes our reinsurance recoverable from the following:

	December 31,	
(In millions)	2019	2018
Global Atlantic	$ 2,981	$ 3,166
Protective	1,605	1,652
ARE	—	337
Other[1]	277	379
Reinsurance recoverable	$ 4,863	$ 5,534

[1] *Represents all other reinsurers, with no single reinsurer having a carrying value in excess of 5% of total recoverable.*

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

The following represents a rollforward of DAC, DSI and VOBA:

(In millions)	DAC	DSI	VOBA	Total
Balance at December 31, 2016	$ 1,145	$ 462	$ 1,352	$ 2,959
Additions	493	161	—	654
Unlocking	13	4	(1)	16
Amortization	(194)	(67)	(162)	(423)
Impact of unrealized investment (gains) losses	(82)	(40)	(112)	(234)
Balance at December 31, 2017	1,375	520	1,077	2,972
Additions	2,481	264	—	2,745
Unlocking	21	7	54	82
Amortization	(108)	(61)	(141)	(310)
Impact of unrealized investment (gains) losses	152	69	197	418
Balance at December 31, 2018	3,921	799	1,187	5,907
Additions	645	226	—	871
Unlocking	(117)	(9)	(24)	(150)
Amortization	(749)	(65)	(68)	(882)
Impact of unrealized investment (gains) losses	(426)	(131)	(181)	(738)
Balance at December 31, 2019	$ 3,274	$ 820	$ 914	$ 5,008

The expected amortization of VOBA for the next five years is as follows:

(In millions)	Expected Amortization
2020	$ 94
2021	85
2022	75
2023	71
2024	66

8. Closed Block

We pay guaranteed benefits under all policies included in the Closed Blocks. In the event the performance of the Closed Blocks' assets is insufficient to maintain dividend scales and interest credits, we may reduce the policyholder dividend scales. In the event dividends have been reduced to zero and the Closed Blocks' assets remain insufficient to fund the Closed Blocks' guaranteed benefits, we would use assets supporting open block policies or surplus to meet the contractual benefits of the Closed Blocks' policyholders. The ILICO Closed Block has been ceded to Global Atlantic. Therefore, Global Atlantic would be required to provide funding for any asset insufficiency related to the ILICO Closed Block. Additionally, the AmerUs Closed Block has a letter of credit and tail risk reinsurance agreement in place that limits our exposure to potential asset insufficiency.

We elected the fair value option for the AmerUs Closed Block. The fair value of liabilities of the AmerUs Closed Block was derived at election as the sum of the fair value of the AmerUs Closed Block assets plus our cost of capital in the AmerUs Closed Block. The cost of capital was then determined to be the present value of the projected release of required capital and future after tax earnings 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. At each reporting period, we record the fair value of the AmerUs Closed Block by adjusting the change in liabilities, exclusive of the cost of capital, to equal the change in assets. We do not record additional policyholder dividend obligations, as there are no future GAAP earnings available to the policyholders.

The excess of the fair value of the liabilities over the fair value of the assets represents our cost of capital in the AmerUs Closed Block. The maximum amount of future earnings from the assets and liabilities of the AmerUs Closed Block is represented by the reduction in the cost of capital in future years based on the operations of the AmerUs Closed Block and recalculation of the cost of capital each reporting period.

Summarized financial information of the AmerUs Closed Block is presented below.

	December 31,	
(In millions)	2019	2018
Liabilities		
Future policy benefits	$ 1,546	$ 1,443
Other policy claims and benefits	18	14
Dividends payable to policyholders	87	89
Total liabilities	1,651	1,546
Assets		
Trading securities	1,353	1,228
Mortgage loans, net of allowances	27	32
Policy loans	139	154
Total investments	1,519	1,414
Cash and cash equivalents	30	31
Accrued investment income	44	41
Reinsurance recoverable	19	22
Other assets	9	2
Total assets	1,621	1,510
Maximum future earnings to be recognized from AmerUs Closed Block	$ 30	$ 36

The following represents the contribution from AmerUs Closed Block.

	Years ended December 31,		
(In millions)	2019	2018	2017
Revenues			
Premiums	$ 54	$ 48	$ 58
Net investment income	74	77	79
Investment related gains (losses)	147	(118)	61
Total revenues	275	7	198
Benefits and Expenses			
Future policy and other policy benefits	234	(49)	144
Dividends to policyholders	36	36	51
Total benefits and expenses	270	(13)	195
Contribution from AmerUs Closed Block before income taxes	5	20	3
Income tax benefit	(1)	—	(5)
Contribution from AmerUs Closed Block, net of income taxes	$ 6	$ 20	$ 8

9. Debt

Credit Facility—In the fourth quarter of 2019, we entered into a five-year revolving credit agreement, subject to up to two one-year extensions (Credit Facility) with Citibank, N.A., as administrative agent, which replaced our previous revolving credit agreement. The borrowing capacity under the Credit Facility is $1.25 billion, with potential increases up to $1.75 billion. In connection with the Credit Facility, AHL and Athene USA guaranteed all of the obligations of AHL, ALRe, Athene Annuity Re Ltd. (AARe) and Athene USA under this facility, and ALRe and AARe guaranteed certain of the obligations of AHL, ALRe, AARe and Athene USA under this facility. The Credit Facility contains various standard covenants with which we must comply, including the following:

1. Consolidated debt to capitalization ratio of not greater than 35%;
2. Minimum consolidated net worth of no less than $7.3 billion; and
3. Restrictions on our ability to incur debt and liens, in each case with certain exceptions.

As of December 31, 2019 and 2018, we had no amounts outstanding under the respective revolving credit agreements and were in compliance with all covenants under these facilities.

Interest accrues on outstanding borrowings at either the Eurodollar Rate (as defined in the Credit Facility) plus a margin or a base rate plus a margin, with the applicable margin varying based on AHL's Debt Rating (as defined in the Credit Facility). The Credit Facility has a commitment fee that is determined by reference to AHL's Debt Rating, and ranges from 0.10% to 0.30% of the undrawn commitment. As of December 31, 2019 and 2018, the commitment fee was 0.15% and 0.225%, respectively, of the undrawn commitment.

Senior Notes—In the first quarter of 2018, AHL issued $1 billion of unsecured senior notes due in January 2028. The senior notes have a 4.125% coupon rate, payable semi-annually. The senior notes are callable at any time prior to October 12, 2027 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 prospectus supplement relating to the senior notes, dated January 9, 2018) plus 25 basis points, and any accrued and unpaid interest. Interest expense on long-term debt was $42 million and $41 million for the years ended December 31, 2019 and 2018, respectively.

Short-term Borrowings—In the fourth quarter of 2019, we borrowed $475 million from the Federal Home Loan Bank (FHLB) through their variable rate short-term federal funds program. As of December 31, 2019, the borrowings had maturity dates ranging from February 10, 2020 to May 11, 2020 and a weighted average interest rate of 1.79%, 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 borrowings. See *Note 15 – Commitments and Contingencies* for further discussion regarding existing collateral posting with the FHLB.

10. Equity

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 (Series A). In 2019, we declared and paid dividends of $881.95 per Series A share and $31 million in the aggregate.

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 (Series B). In 2019, we declared and paid dividends of $394.53 per Series B share and $5 million in the aggregate.

Preferred stock dividends are payable on a non-cumulative basis only when, as and if declared, quarterly in arrears on the 30th 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—We have six classes of common stock: Class A, Class B, Class M-1, Class M-2, Class M-3 and Class M-4. The Class M-1, Class M-2, Class M-3 and Class M-4 shares are collectively referred to as Class M shares. In the fourth quarter of 2019, we entered into an agreement with Apollo in which, among other things, we will make certain amendments to our bye-laws to eliminate our current multi-class share structure, subject to the closing of the underlying transaction. See additional information regarding this agreement in *Note 14 – Related Parties*.

Class A shares collectively represented 55% of the total voting power of the Company. Class B shares collectively represent the remaining 45% of the total voting power of the Company, and are beneficially owned by shareholders who are members of the Apollo Group, as defined in our bye-laws. Class B shares can be converted to Class A shares on a one-to-one basis at any time upon notice to us. Our bye-laws place certain restrictions on Class A shares such that (1) a holder of Class A shares, including its affiliates, 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, (2) the total voting power held by employees of the Apollo Group is limited to 3% and (3) Class A shares may be deemed non-voting when owned by a shareholder who owns Class B shares, has an equity interest in certain Apollo entities, or is a member of the Apollo Group.

Class M shares are restricted, non-voting shares previously issued under equity incentive plans. Class M shares function similar to options in that they are exchangeable into Class A shares upon payment of a conversion price and other conditions being met, including vesting conditions. As of December 31, 2019, there were 9.1 million outstanding Class M shares with a weighted average conversion price of $18.63.

Repurchase Authorizations

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 authorizations:

(In millions)		
Initial authorization	$	250
Repurchases		(100)
Remaining authorization at December 31, 2018		150
Additional authorizations		1,317
Repurchases		(827)
Remaining authorization at December 31, 2019	$	640

Other Share Activities

2018

- In the first quarter, a total of 21.9 million Class B shares were converted into Class A shares pursuant to a distribution of common shares from AP Alternative Assets, L.P. (AAA) to AAA unitholders.

2017

- In the fourth quarter, a total of 21.4 million Class B shares were converted into Class A shares pursuant to a distribution of common shares from AP Alternative Assets, L.P. (AAA) to AAA unitholders.
- As a result of the lockup releases during the year, 1.3 million Class B shares were converted into Class A shares.
- During the year, we completed two follow-on offerings of our Class A common shares. Shareholders sold 50.3 million existing Class A shares through the offerings. We did not sell any shares in the follow-on offerings. A total of 41.7 million Class B shares were converted into Class A shares on a one-for-one basis in order to participate in the follow-on offerings.

As of December 31, 2019, we had 150 million shares of capital stock authorized which remain undesignated.

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

	Years ended December 31,		
(In millions)	2019	2018	2017
Class A			
Beginning balance	162.4	142.4	77.3
Issued shares	0.7	0.6	0.7
Forfeited shares	(0.1)	—	—
Repurchased shares	(19.8)	(2.6)	—
Converted from Class B shares	—	22.0	64.4
Ending balance	143.2	162.4	142.4
Class B			
Beginning balance	25.4	47.4	111.8
Converted to Class A shares	—	(22.0)	(64.4)
Ending balance	25.4	25.4	47.4
Class M-1			
Beginning balance	3.4	3.4	3.5
Converted to Class A shares	(0.1)	—	(0.1)
Ending balance	3.3	3.4	3.4
Class M-2			
Beginning balance	0.8	0.9	1.1
Converted to Class A shares	—	(0.1)	(0.2)
Ending balance	0.8	0.8	0.9
Class M-3			
Beginning balance	1.0	1.1	1.3
Converted to Class A shares	—	(0.1)	(0.2)
Ending balance	1.0	1.0	1.1
Class M-4			
Beginning balance	4.1	4.7	5.4
Converted to Class A shares	(0.1)	(0.5)	(0.2)
Forfeited shares	—	—	(0.1)
Repurchased shares	—	(0.1)	(0.4)
Ending balance	4.0	4.1	4.7

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

(In millions)	Unrealized investment gains (losses) on AFS securities	DAC, DSI, VOBA, future policy benefits and dividends payable to policyholders adjustments on AFS securities	Noncredit component of OTTI losses on AFS securities	Unrealized gains (losses) on hedging instruments	Foreign currency translation and other adjustments	Accumulated other comprehensive income (loss)
Balance at December 31, 2016	$ 684	$ (298)	$ (11)	$ 6	$ (15)	$ 366
Adoption of accounting standards	273	(72)	(2)	(12)	—	187
Other comprehensive income (loss) before reclassifications	1,680	(319)	(5)	(105)	19	1,270
Less: Reclassification adjustments for gains (losses) realized in net income[1]	75	(26)	(9)	—	—	40
Less: Income tax expense (benefit)	463	(95)	1	(35)	—	334
Balance at December 31, 2017	2,099	(568)	(10)	(76)	4	1,449
Adoption of accounting standards	(46)	4	—	—	—	(42)
Other comprehensive income (loss) before reclassifications	(3,291)	852	(9)	146	(8)	(2,310)
Less: Reclassification adjustments for gains (losses) realized in net income[1]	4	(1)	(3)	—	—	—
Less: Income tax expense (benefit)	(629)	168	(1)	31	—	(431)
Balance at December 31, 2018	(613)	121	(15)	39	(4)	(472)
Other comprehensive income (loss) before reclassifications	4,928	(1,322)	1	29	1	3,637
Less: Reclassification adjustments for gains (losses) realized in net income[1]	218	(56)	7	—	—	169
Less: Income tax expense (benefit)	959	(266)	(1)	6	—	698
Less: Other comprehensive income attributable to NCI, net of subsidiary issuance of equity interests and tax	16	—	—	1	—	17
Balance at December 31, 2019	$ 3,122	$ (879)	$ (20)	$ 61	$ (3)	$ 2,281

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

11. Earnings Per Share

The following represents our basic and diluted EPS calculations:

	Year ended December 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	$ 1,760	$ 291	$ 38	$ 10	$ 11	$ 26
Basic weighted average shares outstanding	153.9	25.4	3.3	0.8	1.0	2.2
Dilutive effect of stock compensation plans	0.4	—	—	—	—	0.3
Diluted weighted average shares outstanding	154.3	25.4	3.3	0.8	1.0	2.5
Earnings per share						
Basic	$ 11.44	$ 11.44	$ 11.44	$ 11.44	$ 11.44	$ 11.44
Diluted	$ 11.41	$ 11.44	$ 11.44	$ 11.44	$ 11.44	$ 9.94

(In millions, except per share data)	Year ended December 31, 2018 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	$ 857	$ 157	$ 18	$ 5	$ 5	$ 11
Basic weighted average shares outstanding	160.5	29.3	3.4	0.8	1.0	2.1
Dilutive effect of stock compensation plans	0.6	—	—	—	—	0.6
Diluted weighted average shares outstanding	161.1	29.3	3.4	0.8	1.0	2.7
Earnings per share						
Basic	$ 5.34	$ 5.34	$ 5.34	$ 5.34	$ 5.34	$ 5.34
Diluted	$ 5.32	$ 5.34	$ 5.34	$ 5.31	$ 5.31	$ 4.11

(In millions, except per share data)	Year ended December 31, 2017 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	$ 749	$ 567	$ 24	$ 4	$ 5	$ 9
Effect of stock compensation plans on allocated net income	18	—	—	—	—	—
Net income available to Athene Holding Ltd. common shareholders – diluted	$ 767	$ 567	$ 24	$ 4	$ 5	$ 9
Basic weighted average shares outstanding	107.7	81.6	3.4	0.6	0.7	1.3
Dilutive effect of stock compensation plans	3.3	—	—	0.3	0.5	1.6
Diluted weighted average shares outstanding	111.0	81.6	3.4	0.9	1.2	2.9
Earnings per share						
Basic	$ 6.95	$ 6.95	$ 6.95	$ 6.95	$ 6.95	$ 6.95
Diluted	$ 6.91	$ 6.95	$ 6.95	$ 5.05	$ 3.86	$ 3.10

We use the two-class method for allocating net income to each class of our common stock. Our Class M shares did not become eligible to participate in dividends until a return of investment (ROI) condition had been met for each class. Once eligible, each class of our common stock has equal dividend rights. In conjunction with our IPO in 2016, the ROI condition for Class M-1 was met. The ROI condition was met for Class M-2 on March 28, 2017, and for Class M-3 and Class M-4 on April 20, 2017. For purposes of calculating basic weighted average shares outstanding and the allocation of basic income, shares are deemed to be participating in earnings for only the portion of the period after the condition is met. For purposes of calculating diluted weighted average shares outstanding, shares are deemed dilutive as of the beginning of the period.

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 31.9 million, 34.9 million and 52.3 million shares, RSUs and options as of December 31, 2019, 2018 and 2017, respectively.

12. Income Taxes

Income tax expense consists of the following:

(In millions)	Years ended December 31, 2019	2018	2017
Current	$ 53	$ 78	$ 5
Deferred	64	44	101
Income tax expense (benefit)	$ 117	$ 122	$ 106

Income tax expense was calculated based on the following components of income before income taxes:

	Years ended December 31,		
(In millions)	2019	2018	2017
Income before income taxes – Bermuda	$ 1,895	$ 641	$ 1,165
Income before income taxes – U.S.	528	534	274
Income before income taxes – United Kingdom	(121)	—	—
Income before income taxes – Germany	—	—	25
Income before income taxes	$ 2,302	$ 1,175	$ 1,464

The expected tax provision computed on pre-tax income at the weighted average tax rate has been calculated as the sum of the pre-tax income in each jurisdiction multiplied by that jurisdiction's applicable statutory tax rate. Statutory tax rates of 0%, 21%, and 19% have been used for Bermuda, the U.S. and the United Kingdom (UK), respectively, for the year ended December 31, 2019. Statutory rates of 0% and 21% have been used for Bermuda and the U.S. for the year ended December 31, 2018. Statutory tax rates of 0%, 31% and 35% have been used for Bermuda, Germany and the U.S., respectively, for the year ended December 31, 2017. A reconciliation of the difference between the expected tax provision at the weighted average tax rate and income tax expense (benefit) is as follows:

	Years ended December 31,		
(In millions, except for percentages)	2019	2018	2017
Expected tax provision computed on pre-tax income at weighted average income tax rate	$ 88	$ 112	$ 104
Increase in income taxes resulting from:			
Deferred tax valuation allowance	16	—	(5)
Non-deductible expenses	17	—	—
Prior year true-up	2	11	8
Corporate owned life insurance	(6)	(3)	(8)
Stock compensation expense	2	1	5
Change in statutory tax rates	—	—	(7)
State taxes and other	(2)	1	9
Income tax expense (benefit)	$ 117	$ 122	$ 106
Effective tax rate	5%	10%	7%

Public Law no. 115-97, an Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018 (Tax Act) was enacted on December 22, 2017 and made key changes to the U.S. tax law, including the reduction of the U.S. statutory tax rate from 35% to 21%. As such, the December 31, 2017 deferred tax balances were remeasured to reflect the reduction in rate and the resulting decrease to the net deferred tax liability is included in change in statutory tax rates of the reconciliation above.

Total income taxes were as follows:

	Years ended December 31,		
(In millions)	2019	2018	2017
Income tax expense	$ 117	$ 122	$ 106
Income tax expense (benefit) from OCI	698	(431)	334
Total income taxes	$ 815	$ (309)	$ 440

Current income tax recoverable and deferred tax assets are included in other assets on the consolidated balance sheets, and current income tax payable and deferred tax liabilities are included in other liabilities on the consolidated balance sheets. Current and deferred income tax assets and liabilities were as follows:

	December 31,	
(In millions)	2019	2018
Current income tax recoverable	$ —	$ 36
Current income tax payable	14	33
Net current income tax recoverable (payable)	$ (14)	$ 3
Deferred tax assets	$ —	$ 340
Deferred tax liabilities	423	—
Net deferred tax assets (liabilities)	$ (423)	$ 340

Deferred income tax assets and liabilities consisted of the following:

(In millions)	December 31, 2019	December 31, 2018
Deferred tax assets		
Insurance liabilities	$ 1,753	$ 1,186
Net unrealized losses on AFS	—	112
Net operating and capital loss carryforwards	133	78
Tax credits	2	—
Fixed assets	—	43
Employee benefits	21	24
Other	16	38
Total deferred tax assets	1,925	1,481
Valuation allowance	(63)	(52)
Deferred tax assets, after valuation allowance	1,862	1,429
Deferred tax liabilities		
Investments, including derivatives	928	296
Net unrealized gains on AFS	585	—
DAC, DSI and VOBA	758	790
Other	14	3
Total deferred tax liabilities	2,285	1,089
Net deferred tax assets (liabilities)	$ (423)	$ 340

As of December 31, 2019, we have gross deferred tax assets associated with U.S. federal and state net operating losses of $793 million, which will begin to expire in 2022.

The valuation allowance consists of the following:

(In millions)	December 31, 2019	December 31, 2018
U.S. federal and state net operating losses and other deferred tax assets	$ 47	$ 52
UK net operating losses and other deferred tax assets	16	—
Total valuation allowance	$ 63	$ 52

AHL and its Bermuda subsidiaries file protective U.S. income tax returns and its U.S. subsidiaries file income tax returns with the U.S. federal government and various U.S. state governments. AADE is not subject to U.S. federal and state examinations by tax authorities for years prior to 2011, while Athene Annuity & Life Assurance Company of New York (AANY) is not subject to examinations for years prior to 2015. The Internal Revenue Service is currently auditing the 2013 consolidated tax return filed by Athene USA Corporation, and is conducting a limited scope audit of the 2015 consolidated tax return filed by AADE. One state jurisdiction is auditing the 2016 and 2017 combined tax returns filed by Athene USA. No material adverse proposed adjustments have been issued with respect to any examination.

Under current Bermuda law, we are not required to pay any taxes in Bermuda on either income or capital gains. We have received an undertaking from the Bermuda Minister of Finance that, in the event of any such taxes being imposed, the Company will be exempted from taxation until the year 2035.

We expect that earnings from AHL's U.S. subsidiaries will not be subject to U.S. dividend withholding tax under the benefits provided by the income tax treaty between the U.S. and the UK. Any dividends remitted to AHL from ALRe are not subject to withholding tax.

13. Statutory Requirements

Our insurance and reinsurance subsidiaries are subject to insurance laws and regulations in the jurisdictions in which they operate including Bermuda, all U.S. states and the District of Columbia. Certain regulations include restrictions that limit the dividends or other distributions, such as loans or cash advances, available to shareholders without prior approval of the insurance regulatory authorities. The differences between financial statements prepared for insurance regulatory authorities and GAAP financial statements vary by jurisdiction.

Bermuda statutory requirements—ALRe, AARe, and Athene Co-Invest Reinsurance Affiliate 1A Ltd. (ACRA 1A, and together with its subsidiaries, ACRA) are each licensed by the Bermuda Monetary Authority (BMA) as long-term insurers and are subject to the Insurance Act 1978, as amended (Bermuda Insurance Act) and regulations promulgated thereunder. The BMA implemented the Economic Balance Sheet (EBS) framework into the Bermuda Solvency Capital Requirement (BSCR), which was granted equivalence to the European Union's Directive (2009/138/EC) (Solvency II).

Under the Bermuda Insurance Act, long-term insurers are required to maintain minimum statutory capital and surplus to meet the minimum margin of solvency (MMS) and minimum economic statutory capital and surplus (EBS capital and surplus) to meet the Enhanced Capital Requirement (ECR). For our Class C reinsurer, ACRA 1A, MMS is equal to the greater of $500,000, 1.5% of the total statutory assets or 25% of ECR. For our Class E reinsurers, ALRe and AARe, MMS is equal to the greater of $8 million, 2% of the first $500 million of statutory assets plus 1.5% of statutory assets above $500 million or 25% of ECR. For each class, the ECR is calculated based on a risk-based capital model where risk factor charges are applied to the EBS. The ECR is floored at the MMS. As of December 31, 2019, our Bermuda subsidiaries were in excess of the minimum levels required. For our Bermuda reinsurance subsidiaries, the ECR is the binding regulatory constraint. The following represents the EBS capital and surplus and BSCR ratios:

	EBS capital & surplus		BSCR ratio	
	December 31,		December 31,	
(In millions)	2019	2018	2019	2018
ALRe	$ 14,073	$ 12,000	310%	340%
AARe	2,898	3,029	257%	176%
ACRA 1A	1,237	575	341%	295%

Under the EBS framework, statutory financial statements are generally equivalent to GAAP financial statements, with the exception of permitted practices granted by the BMA. Our Bermuda subsidiaries have permission in the statutory financial statements to use amortized cost instead of fair value as the basis for certain investments. Additionally, our Bermuda subsidiaries use U.S. statutory reserving principles for the calculation of insurance reserves instead of GAAP, subject to the reserves being proved adequate based on cash flow testing. The following represents the effect of the permitted practices to the statutory financial statements:

	December 31, 2019		
(In millions)	ALRe	AARe[1]	ACRA 1A
Increase (decrease) to capital and surplus due to permitted practices	$ (3,765)	$ (5,047)	$ (311)
Increase (decrease) to statutory net income due to permitted practices	(1,035)	(4,988)	(43)

[1] *AARe has permission to use amortized cost instead of fair value as the basis for certain investments but does not produce GAAP financial statements. The effect of the permitted practices to the AARe statutory financial statements reflects the impact of the difference between amortized cost and fair value for certain investments.*

Under the Bermuda Insurance Act, our Bermuda subsidiaries are 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 the companies' respective board of directors and its principal representative in Bermuda sign and submit to the BMA an affidavit attesting that a dividend in excess of this amount would not cause the subsidiary to fail to meet its relevant margins. In certain instances, the Bermuda subsidiary 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, and further subject to meeting the MMS and ECR requirements, a Bermuda subsidiary is permitted to distribute up to the sum of 100% of statutory surplus and an amount less than 15% of statutory capital. Distributions in excess of this amount require the approval of the BMA. The following represents the maximum distribution our Bermuda subsidiaries would be permitted to remit to its parent without the need for prior approval:

	December 31,	
(In millions)	2019	2018
ALRe	$ 8,141	$ 5,942
AARe	1,216	997
ACRA 1A	59	—

U.S. statutory requirements—Our regulated U.S. subsidiaries and the corresponding insurance regulatory authorities are as follows:

Subsidiary	Regulatory Authority
AADE	Delaware Department of Insurance
AAIA	Iowa Insurance Division
AANY	New York Department of Financial Services
Athene Re USA IV	State of Vermont Department of Financial Regulation

Each entity's statutory statements are presented on the basis of accounting practices determined by the respective regulatory authority. The regulatory authority recognizes only statutory accounting practices prescribed or permitted by the corresponding state for determining and reporting the financial condition and results of operations of an insurance company and for determining its solvency under insurance law.

The maximum dividend these subsidiaries can pay to shareholders, without prior approval of the respective state insurance department, is subject to restrictions relating to statutory surplus or net gain from operations. The maximum dividend payment over a twelve-month period may not, without prior approval, be paid from a source other than earned surplus and may not exceed the greater of (1) the prior year's net gain from operations or (2) 10% of policyholders' surplus. Based on these restrictions, the maximum dividend AADE could pay to Athene USA absent regulatory approval was $152 million and $154 million as of December 31, 2019 and 2018, respectively. Any dividends from AHL's other U.S. statutory entities in excess of the amounts allowed for AADE would not be able to be remitted to Athene USA without regulatory approval from the Delaware Department of Insurance.

As of December 31, 2019, our U.S. subsidiaries' solvency, liquidity and risk-based capital amounts were significantly in excess of the minimum levels required.

In some instances, the states of domicile of our U.S. subsidiaries have adopted prescribed accounting practices that differ from the required accounting outlined in National Association of Insurance Commissioners (NAIC) Statutory Accounting Principles (SAP). These subsidiaries also have certain accounting practices permitted by the states of domicile that differ from those found in NAIC SAP. These prescribed and permitted practices are described as follows:

AAIA – Among the products issued by AAIA are indexed universal life insurance and fixed indexed annuities. These products allow a portion of the premium to earn interest based on certain indices, primarily the S&P 500. We purchase call options, futures and variance swaps to hedge the growth in interest credited to the customer as a direct result of increases in the related index. The Iowa Insurance Division allows an insurer to elect (1) to use an amortized cost method to account for certain derivative instruments, such as call options, purchased to hedge the growth in interest credited to the customer on indexed insurance products and (2) to use an indexed annuity reserve calculation methodology under which call options associated with the current index interest crediting term are valued at zero. AAIA has elected to apply this option to its over-the-counter call options and reserve liabilities. As a result, AAIA's statutory surplus decreased by $80 million and increased by $39 million as of December 31, 2019 and 2018, respectively.

Athene Re USA IV – AAIA has ceded the AmerUs Closed Block to Athene Re USA IV on a 100% funds withheld basis. A permitted practice in the State of Vermont allows Athene Re USA IV to include as admitted assets the face amount of all issued and outstanding letters of credit used to fund its reinsurance obligations to AAIA in its statutory financial statements. If Athene Re USA IV had not followed this permitted practice, then it would not have exceeded authorized control level risk based capital requirements. As of December 31, 2019 and 2018, Athene Re USA IV included as admitted assets $137 million and $153 million, respectively, related to the outstanding letters of credit.

Statutory capital and surplus and net income (loss)—The following table presents, for each of our primary insurance subsidiaries, the statutory capital and surplus and the statutory net income (loss), based on the most recent statutory financial statements to be filed with insurance regulators:

	Statutory capital & surplus		Statutory net income (loss)		
	December 31,		Years ended December 31,		
(In millions)	2019	2018	2019	2018	2017
ALRe	$ 11,000	$ 9,659	$ 1,247	$ 418	$ 828
AARe	2,343	2,095	248	997	—
ACRA 1A	808	393	265	(287)	—
AADE	1,526	1,544	(86)	18	24
AAIA	1,209	1,234	241	81	239
AANY	318	282	33	6	29

14. 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 wholly owned subsidiary, Athene Asset Management LLC (AAM, now known as Apollo Insurance Solutions Group LLC (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)	December 31, 2019	Percent of Total
Core	$ 32,474	25.5%
Core Plus	30,155	23.6%
Yield	48,557	38.0%
High Alpha	5,062	4.0%
Other	11,302	8.9%
Total sub-allocation assets	$ 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. Under the Fee Agreement fees payable to Apollo for sub-advisory services are encompassed within the current fee structure and we no longer separately pay sub-advisory fees (as defined below). See –*Historical fee structure* below for further discussion of the prior fee structure.

For the years ended December 31, 2019, 2018 and 2017, we incurred management fees of $426 million, $349 million and $318 million, respectively. Management fees are included within net investment income on the consolidated statements of income. As of December 31, 2019 and 2018, management fees payable were $42 million and $54 million, respectively, and are included in other liabilities on the consolidated balance sheets.

Historical fee structure – Prior to January 1, 2019, we paid AAM an annual fee of 0.40%, subject to certain discounts and exceptions, on all assets that AAM managed in accounts owned by us in the U.S. and Bermuda or in accounts supporting reinsurance ceded to our U.S. and Bermuda subsidiaries by third-party insurers (North American Accounts) up to $65,846 million and 0.30% per year on assets managed in excess of such amount. Additionally, for certain assets which required specialized sourcing and underwriting capabilities, AAM had chosen to mandate sub-advisors rather than build out in-house capabilities. AAM entered into Master Sub-Advisory Agreements (MSAAs) with certain Apollo affiliates to sub-advise AAM with respect to a portion of our assets, with the fees recharged to us, in addition to the gross fee paid to AAM as described above.

The MSAAs covered services rendered by Apollo-affiliated sub-advisors relating to the following investments:

(In millions, except for percentages)	December 31, 2018
AFS securities	
Foreign governments	$ 153
Corporate	3,398
CLO	5,703
ABS	663
CMBS	880
Trading securities	87
Equity securities	2
Mortgage loans	3,507
Investment funds	157
Funds withheld at interest	4,126
Other investments	70
Total assets sub-advised by Apollo affiliates	$ 18,746
Percent of assets sub-advised by Apollo affiliates to total AAM-managed assets	18%

AAM paid Apollo 0.40% per year on all assets in the North American Accounts explicitly sub-advised by Apollo up to $10,000 million, 0.35% per year on all assets in such accounts explicitly sub-advised by Apollo in excess of $10,000 million up to $12,441 million, 0.40% per year on all assets in such accounts explicitly sub-advised by Apollo in excess of $12,441 million up to $16,000 million, and 0.35% per year on all assets in such accounts explicitly sub-advised by Apollo in excess of $16,000 million, subject to certain exceptions (sub-advisory fees).

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 the applicable Apollo subsidiary, 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, as defined in our bye-laws. Also, James Belardi, our Chief Executive Officer, is also 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 $487 million and $463 million as of December 31, 2019 and 2018, 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 $411 million, $722 million and $57 million of residential mortgage loans under this agreement during the years ended December 31, 2019, 2018 and 2017, respectively. Additionally, we hold ABS securities issued by AmeriHome affiliates of $170 million and $121 million as of December 31, 2019 and 2018, respectively, which are included in related party AFS securities on the consolidated balances sheets. We also have commitments to make additional equity investments in A-A Mortgage of $169 million as of December 31, 2019.

MidCap – CoInvest VII holds a significant investment in MidCap, which is included in investment funds of consolidated VIEs on the consolidated balance sheets. We have also advanced amounts under a subordinated debt facility to Midcap and, as of December 31, 2019 and 2018, the principal balance was $345 million and $245 million, respectively, which is included in other related party investments on the consolidated balance sheets. Our total investment in MidCap, including amounts advanced under credit facilities, was $886 million and $792 million as of December 31, 2019 and 2018, respectively. Additionally, we hold ABS and CLO securities issued by MidCap affiliates of $624 million and $226 million as of December 31, 2019 and 2018, respectively, which are included in related party AFS securities on the 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 December 31, 2019, we have not exercised our right of first refusal to reinsure liabilities ceded to Athora's insurance or reinsurance subsidiaries.

During the fourth quarter of 2018, we entered into a coinsurance agreement with ALV to reinsure endowment contracts and annuities, in which we assumed liabilities of $325 million. ALV coinsurance assets were recorded as receivable in other assets on the December 31, 2018 consolidated balance sheet, as the assets were not received prior to December 31, 2018. We then retroceded these endowment contracts and annuities through a modco agreement to ARE, in which we recorded a funds withheld liability of $337 million. ARE modco assets were recorded as reinsurance recoverable on the consolidated balance sheets. During the fourth quarter of 2019, we novated the reinsurance agreement for the ALV endowment contracts and annuities to ARE, which resulted in a decrease of $663 million of liabilities and related assets on the consolidated balance sheets.

Our investment in Athora, which is included in related party investment funds on the consolidated balance sheets, was $132 million and $105 million as of December 31, 2019 and 2018, respectively. Additionally, as of December 31, 2019 and 2018, we had $146 million and $166 million, respectively, of funding agreements outstanding to Athora, which were issued to Athora prior to closing. We also have commitments to make additional equity investments in Athora of $454 million as of December 31, 2019.

Venerable – On June 1, 2018, we entered into coinsurance and modco agreements with Voya Insurance and Annuity Company (VIAC) to reinsure a block of fixed and fixed indexed annuities, in which we assumed liabilities of $18,578 million. VIAC is a related party pursuant to GAAP due to our minority equity investment in its holding company's parent, VA Capital Company LLC (VA Capital), which was $99 million and $92 million as of December 31, 2019 and December 31, 2018, respectively. The minority equity investment in VA Capital is included in related party investment funds on the 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, as of December 31, 2019, we have a $148 million, 15-year term loan receivable from Venerable, which is held at amortized cost and included in related party other investments on the consolidated balance sheets. While management views the overall transactions with VIAC and 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 Voya 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 December 31, 2019 and 2018, we had $97 million and $16 million, respectively, of investments under the Strategic Partnership and these investments are classified as investment funds of consolidated VIEs.

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.

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 will be 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) – On October 1, 2019, we sold 67% of our equity interests in our subsidiary, ACRA, to ADIP, which is managed by AGM, for $575 million. As a result, we reduced APIC and AOCI by $145 million and $34 million, respectively, and recorded $754 million for the issuance of equity to noncontrolling interests. The shares held by ADIP are non-voting and our shares represent 100% of the voting power and 33% of the equity interests in ACRA.

Apollo Share Exchange and Related Transactions – On October 27, 2019 we entered into a transaction agreement (Transaction Agreement) with AGM and certain affiliates of AGM which collectively comprise the Apollo Operating Group (AOG), pursuant to which, among other things, (i) we agreed to sell 27,959,184 new Class A common shares to the AOG for 29,154,519 new AOG units valued at approximately $1.2 billion (based on the closing market price of AGM's Class A common shares on October 25, 2019 and representing a 2.3% premium to the closing price of our Class A common shares on October 25, 2019), (ii) we agreed to sell 7,575,758 new Class A common shares to the AOG for $350 million in cash (representing a 10% premium to the closing price of our Class A common shares on October 25, 2019) (collectively, (i) and (ii), Share Issuance), (iii) we agreed to grant AGM the right to purchase additional Class A common shares from the closing date of the Share Issuance (Closing Date) until 180 days thereafter 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 (Contingent Right), (iv) AMH (as defined below) will have 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, and (v) we will make certain amendments to our bye-laws to, among other things, eliminate our current multi-class share structure.

The proposed transaction is subject to customary closing conditions, the receipt of all necessary regulatory and governmental approvals, and certain other closing conditions. Subject to certain assumptions, including those regarding the exercise of the Contingent Right, and taking into consideration certain voting proxies (as described below), AGM and certain of its related parties and employees are expected to control equity interests approximating 35% of our voting power and economic interest as compared to the 45% voting power and approximately 17% economic interest that AGM and certain of its related parties and employees hold today.

Concurrently with the entry into the Transaction Agreement, Apollo Management Holdings, L.P. (AMH), James Belardi, our Chief Executive Officer, and William Wheeler, our President (each an "Other Shareholder"), entered into a Voting Agreement (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.

In addition, Messrs. Belardi and Wheeler have each entered into a letter agreement with us, pursuant to which they have agreed to vote their Class M common shares in favor of the proposals on which holders of our Class M common shares are entitled to vote at our shareholder meeting (including the proposal to approve the amendments to our bye-laws that eliminate the Class M 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 December 31, 2019 and 2018, we held $58 million and $120 million, respectively, of preferred shares, which are included in related party equity securities on the consolidated balance sheets. In the fourth quarter of 2019, AA Infrastructure issued $267 million of ABS securities as a return of capital on the preferred shares. As of December 31, 2019, we held AA Infrastructure ABS securities of $267 million, which are included in related party trading securities on the consolidated balance sheets. Additionally, as of December 31, 2019, we had commitments to make additional investments in AA Infrastructure of $42 million.

15. 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 $4,793 million and $3,036 million as of December 31, 2019 and 2018, 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 December 31, 2019 and 2018, we had $1,226 million and $926 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 December 31, 2019 and 2018, we had $3,700 million and $2,700 million, respectively, of FABN funding agreements outstanding. We had $6.0 billion of remaining FABN capacity as of December 31, 2019.

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

	December 31,	
(In millions)	2019	2018
AFS securities	$ 9,369	$ 5,439
Trading securities	45	68
Equity securities	22	2
Mortgage loans	2,535	1,830
Investment funds	84	53
Derivative assets	105	24
Short-term investments	92	77
Other investments	88	47
Restricted cash	402	492
Total restricted assets	$ 12,742	$ 8,032

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 $198 million as of December 31, 2019. 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 AAIA, purchased broad based variable COLI policies from American General Life Insurance Company (American General) that, as of December 31, 2019, had an asset value of $387 million, and is included in other assets on the 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 $188 million as of December 31, 2019.

Regulatory Matters – Our U.S. insurance subsidiaries have experienced increased service and administration 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 services on such policies. AllianceOne also administers certain 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 similar service and administration issues.

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 the 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 examination 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 such annuity policies, including the administration of such blocks by AllianceOne. On June 28, 2018 we entered into a consent order with the NYSDFS resolving that matter in a manner that, when considering the indemnification received from affiliates of Global Atlantic, did not have a material impact on our financial condition, results of operations or cash flows. Global Atlantic is currently in negotiation with the CDI to resolve the pending action related to the converted life insurance policies. We do not expect any settlement to be material to our financial condition, results of operations or cash flows.

In addition to the foregoing, we have received inquiries, and expect to continue to receive inquiries, from other regulatory authorities regarding the conversion matter. 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 recent 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. We are currently in discussions with the NYSDFS to resolve its concerns.

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, and litigation is proceeding in the trial court.

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.

Central Laborers' Pension Fund (CLPF) and Cambria County Employees' Retirement System (Cambria) – On June 18, 2019 and July 25, 2019, CLPF and Cambria, respectively, filed derivative actions against AAM and AGM, as defendants, and us, as a nominal defendant, in New York State Court (the New York Actions). CLPF and Cambria, both purporting to be our shareholders, each allege that AAM and AGM injured us by causing us to pay excessive management fees to AAM and AGM. The complaints do not name any of our directors as defendants, but allege certain breaches of fiduciary duty. Both complaints seek forms of injunctive relief and disgorgement, but neither complaint seeks monetary relief from us.

On July 5, 2019 and July 29, 2019, the Supreme Court of Bermuda enjoined CLPF and Cambria, respectively, from taking any further steps to advance or otherwise positively participate in its respective New York Action in light of the exclusive jurisdiction provision in our bye-laws. On July 31, 2019, CLPF and Cambria each filed a notice that it was dismissing its claims in its respective New York Action. We moved for default judgments in the Supreme Court of Bermuda and, on October 15, 2019, the Court granted our applications and permanently enjoined CLPF and Cambria from taking any further steps in the New York Actions. The Supreme Court of Bermuda has awarded costs in our favor against CLPF and Cambria, which are in the process of being enforced.

16. 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 and prior to January 1, 2018, included our former Germany operations, which were primarily comprised of participating long-duration savings products. Included in Corporate and Other are 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. See *Note 1 – Business, Basis of Presentation and Significant Accounting Policies* for discussion on the deconsolidation of our German operations in 2018.

Financial Measures—Segment adjusted operating income available to common shareholders and net investment earnings are internal measures 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;
- VIE expenses and noncontrolling interests; and
- Other adjustments to revenues.

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

(In millions)	Years ended December 31, 2019	2018	2017
Retirement Services	$ 11,460	$ 8,118	$ 5,960
Corporate and Other	117	44	368
Non-operating adjustments			
Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets	2,346	(1,020)	1,990
Investment gains (losses), net of offsets	1,685	(515)	461
VIE expenses and noncontrolling interests	637	1	—
Other adjustments to revenues	13	9	9
Total revenues	$ 16,258	$ 6,637	$ 8,788

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 consolidated statements of income:

(In millions)	Years ended December 31, 2019	2018	2017
Retirement Services	$ 1,322	$ 1,201	$ 1,038
Corporate and Other	(33)	(61)	17
Non-operating adjustments			
Investment gains (losses), net of offsets	994	(274)	199
Change in fair values of derivatives and embedded derivatives – index annuities, net of offsets	(65)	242	230
Integration, restructuring and other non-operating expenses	(70)	(22)	(68)
Stock-based compensation, excluding LTIP	(12)	(11)	(33)
Income tax (expense) benefit – non-operating	—	(22)	(25)
Net income available to Athene Holding Ltd. common shareholders	$ 2,136	$ 1,053	$ 1,358

Net investment earnings used to evaluate the performance of our segments is an internal measure that does not correspond to GAAP net investment income. Adjustments are made to GAAP net investment income to arrive at a net investment earnings measure that reflects the profitability of our core deferred annuities business. Accordingly, we adjust net investment income to include earnings from our consolidated VIEs and earnings on certain alternative investments (primarily CLOs) classified in investment related gains (losses) on the consolidated statements of income. Additionally, we adjust for impacts of reinsurance embedded derivatives and noncontrolling interests on net investment income. The table below reconciles segment net investment earnings to net investment income presented on the consolidated statements of income:

	Years ended December 31,		
(In millions)	2019	2018	2017
Retirement Services	$ 5,062	$ 4,188	$ 3,241
Corporate and Other	117	44	182
Adjustments to net investment income			
Reinsurance embedded derivative impacts	(680)	(301)	(191)
Net VIE earnings	(80)	(37)	(77)
Alternative income (gains) losses	(1)	34	20
Noncontrolling interests	61	—	—
Held for trading amortization	43	76	94
Net investment income	$ 4,522	$ 4,004	$ 3,269

Adjusted operating income available to common shareholders excludes the income tax impact of the taxable non-operating adjustments presented above. The income tax expense of non-operating income adjustments is comprised of the appropriate jurisdiction's tax rate applied to the non-operating adjustments subject to income tax, as well as the amount recorded for the change in the U.S. statutory rate resulting from the Tax Act. The table below reconciles segment provision for income taxes – operating to income tax expense presented on the consolidated statements of income:

	Years ended December 31,		
(In millions)	2019	2018	2017
Retirement Services	$ 117	$ 100	$ 83
Corporate and Other	—	—	(2)
Income tax (expense) benefit – non-operating	—	22	25
Income tax expense (benefit)	$ 117	$ 122	$ 106

The following represents total assets by segment:

	December 31,	
(In millions)	2019	2018
Retirement Services	$ 143,881	$ 123,498
Corporate and Other	2,994	2,007
Total assets	$ 146,875	$ 125,505

We market annuity products, primarily fixed rate and fixed indexed annuities. Deposits, which are generally not included in revenues on the consolidated statements of income, and premiums collected are as follows:

	Years ended December 31,		
(In millions)	2019	2018	2017
Fixed indexed annuities	$ 7,304	$ 29,973	$ 5,480
Fixed rate annuities	3,192	5,501	873
Payouts without life contingencies	341	535	106
Funding agreements	1,301	650	3,054
Life and other deposits	(13)	4	33
Total deposits	12,125	36,663	9,546
Payouts with life contingencies	6,332	3,408	2,272
Life and other premiums	50	54	254
Total premiums	6,382	3,462	2,526
Total premiums and deposits, net of ceded	$ 18,507	$ 40,125	$ 12,072

Deposits and premiums collected by the geographical location are as follows:

(In millions)	Years ended December 31, 2019	2018	2017
United States	$ 17,159	$ 16,421	$ 11,217
Bermuda	1,348	23,704	652
Germany	—	—	203
Total premiums and deposits, net of ceded	$ 18,507	$ 40,125	$ 12,072

17. Quarterly Results of Operations (Unaudited)

The unaudited quarterly results of operations for the years ended December 31, 2019 and 2018 are summarized in the table below:

(In millions, except per share data)	Three months ended March 31	June 30	September 30	December 31
2019				
Total revenues	$ 4,995	$ 3,423	$ 4,584	$ 3,256
Total benefits and expenses	4,255	2,673	4,305	2,723
Net income	708	720	293	464
Less: Net income attributable to noncontrolling interests	—	—	—	13
Net income attributable to Athene Holding Ltd. shareholders	708	720	293	451
Less: Preferred stock dividends	—	—	17	19
Net income available to Athene Holding Ltd. common shareholders	708	720	276	432
Earnings per share				
Basic – All classes	$ 3.65	$ 3.76	$ 1.50	$ 2.43
Diluted – Class A	3.64	3.75	1.50	2.42
Diluted – Class B	3.65	3.76	1.50	2.43
Diluted – Class M-1	3.65	3.76	1.50	2.43
Diluted – Class M-2	3.65	3.76	1.50	2.43
Diluted – Class M-3	3.65	3.76	1.50	2.43
Diluted – Class M-4	3.15	3.28	1.29	2.13
2018				
Total revenues	$ 1,023	$ 1,850	$ 2,586	$ 1,178
Total benefits and expenses	701	1,529	1,907	1,325
Net income (loss)	277	257	623	(104)
Net income (loss) attributable to Athene Holding Ltd. shareholders	277	257	623	(104)
Net income (loss) available to Athene Holding Ltd. common shareholders	277	257	623	(104)
Earnings (loss) per share				
Basic – All classes	$ 1.40	$ 1.30	$ 3.16	$ (0.53)
Diluted – Class A	1.40	1.30	3.15	(0.53)
Diluted – Class B	1.40	1.30	3.16	(0.53)
Diluted – Class M-1	1.40	1.30	3.16	(0.53)
Diluted – Class M-2	1.39	1.29	3.16	(0.53)
Diluted – Class M-3	1.38	1.30	3.16	(0.53)
Diluted – Class M-4	0.97	1.02	2.42	(0.53)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures as such term is defined under Exchange Act Rule 13a-15(e), that are designed to provide reasonable assurance 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 as of December 31, 2019.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Under the supervision and with the participation of management, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on criteria established in the *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2019.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of our internal control over financial reporting as of December 31, 2019. Their report is included in *Item 8. Financial Statements and Supplementary Data.*

Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting during the three months ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

On February 18, 2020, Messrs. Belardi, Wheeler, Klein, Kvalheim and Rhodes as well as certain other members of our senior management were granted limited partner interests in a newly authorized subsidiary of the Company (Athene Plan LP) in the form of "Athene Plan Points." Each Athene Plan Point generally represents the right to participate in 1/1500th of the carried interest received by Apollo ADIP Advisors, L.P. (ADIP GP) from ADIP. Athene Plan Points are allocated from time to time by our management team, with approval of our Compensation Committee, where applicable, to certain personnel as incentive compensation in connection with, and based on the performance of, ADIP. We believe these grants further align such personnel with our strategic objective to deploy excess capital at attractive risk-adjusted returns across our various liability channels and, in particular, we believe that the efforts of our personnel who will be receiving these allocations are critical to achieving a successful, risk-adjusted return at ADIP and ACRA. In addition, these grants provide a key retention tool for personnel who are deemed key to the success of ADIP and ACRA, and therefore key to our success more broadly.

ALRe is expected to be the general partner of Athene Plan LP. Athene Plan LP is expected to become a limited partner in the ADIP GP and to become entitled to one-third of the carried interest allocated to the ADIP GP from ADIP. The value of the carried interest is calculated in a manner customarily used in the investment fund industry and is based on a percentage of the total returns on ADIP's capital after ADIP investors receive a preferred return. Distributions (other than tax distributions) will not be made with respect to Athene Plan Points until ADIP has returned contributed capital to its limited partners and made distributions in excess of a specified performance return. Any distributions made with respect to Athene Plan Points are expected to be paid in cash.

Messrs. Belardi, Wheeler, Klein, Kvalheim and Rhodes were granted 76, 59.5, 32.5, 32.5 and 16 Athene Plan Points, respectively, and they may receive additional Athene Plan Points upon the forfeiture of Athene Plan Points by other participants. A participant's Athene Plan Points are treated as fully vested for purposes of receiving distributions while the participant remains employed by us or our affiliates. Upon a termination of employment (other than for cause), a participant will be eligible to retain up to a maximum of 75% of his or her Athene Plan Points, with the actual number of Athene Plan Points retained to be determined based on a five-year monthly vesting schedule beginning on October 1, 2019, the date the ACRA joint venture began. A participant will forfeit all of his or her Athene Plan Points upon a termination for cause or upon a breach of applicable confidentiality, non-competition, non-solicitation, non-disparagement or other post-separation covenants. See *Item 1. Business–Capital–Deployable Capital–ACRA* for further discussion regarding ACRA.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information called for by this Item is incorporated herein by reference to the sections entitled "Management," "Proposal 1: Election of Directors of the Company," "Corporate Governance–Classified Board of Directors," "Corporate Governance–Delinquent Section 16(a) Reports" and "Corporate Governance–Committees of the Board of Directors" in our definitive proxy statement for our 2020 Annual General Meeting of Shareholders to be filed by us with the SEC pursuant to Regulation 14A within 120 days after the year ended December 31, 2019 (2020 Proxy Statement).

Corporate Governance Guidelines and Code of Business Conduct and Ethics

We have adopted corporate governance guidelines and a code of business conduct and ethics that applies to all of our directors, officers and employees. These documents are available at www.athene.com. Information contained on our website or connected thereto does not constitute a part of, and is not incorporated by reference into, this report. We intend to satisfy our disclosure obligations under Item 5.05 of Form 8-K by posting information about amendments to, or waivers from a provision of, our code of business conduct and ethics that apply to our Chief Executive Officer, Chief Financial Officer and Chief Accounting Officer on our website at the address given above.

Item 11. Executive Compensation

The information called for by this Item is incorporated herein by reference to the sections entitled "Compensation of Executive Officers and Directors," "Corporate Governance–Compensation Committee Interlocks and Insider Participation," and "Corporate Governance–Committees of the Board of Directors–Compensation Committee" in our 2020 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information called for by this Item pertaining to security ownership of certain beneficial owners and management is incorporated herein by reference to the section entitled "Security Ownership of Certain Beneficial Owners" in our 2020 Proxy Statement.

Share Incentive Plan Information

The table below shows information regarding awards outstanding and shares of common stock available for issuance as of December 31, 2019 under the Share Incentive Plans:

Plan Category	Number of Securities to Be Issued Upon Exercise of Outstanding Options, Warrants and Rights[1]	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights[2]	Number of Securities Remaining Available for Future Issuance Under Share Incentive Plans[3]
Share Incentive Plans Approved by Security Holders	1,966,566	$ 46.69	6,969,377
Share Incentive Plans Not Approved by Security Holders[4]	9,522,864	$ 19.31	—
Total	11,489,430	$ 21.93	6,969,377

[1] *Consists of Class A shares underlying options, time-based RSUs, performance-based RSUs and Class M common shares. Class M common shares, once vested, are convertible into Class A shares, subject to payment of the conversion price. Performance-based RSUs are included at their target value. Class M common shares are included based on the assumption that 100% of such shares vest and are converted into Class A shares on a one-for-one basis.*

[2] *Includes options, Class M common shares and the RSUs issued in conjunction with the Class M-4 common shares. Does not include other time-based RSUs or performance-based RSUs, as they do not have exercise prices.*

[3] *Includes shares remaining available for issuance under the ESPP and the 2019 Share Incentive Plan. The ESPP is a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code. As of December 31, 2019, there were 3,662,780 shares remaining available for issuance under the ESPP. We estimate that 16,694 shares are subject to purchase during the current purchase period beginning on January 1, 2020 and ending on March 31, 2020, assuming a purchase price equal to 85% of the closing price of our Class A common shares on February 14, 2020.*

[4] *Includes securities pursuant to our 2009, 2012, and 2014 share incentive plans. These plans were frozen in 2016 and no additional awards may be granted under these plans.*

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information called for by this Item is incorporated herein by reference to the sections entitled "Certain Relationships and Related Transactions" and "Corporate Governance–Director Independence" in our 2020 Proxy Statement.

Item 14. Principal Accountant Fees and Services

The information called for by this Item is incorporated herein by reference to the sections entitled "Additional Information and Matters–Principal Accountant Fees and Services" and "Corporate Governance–Committees of the Board of Directors–Audit Committee–Pre-Approval Policies and Procedures of the Audit Committee" in our 2020 Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules

The following documents are filed as part of this report:

ATHENE HOLDING LTD.
Schedule I — Summary of Investments — Other Than Investments in Related Parties

	December 31, 2019		
(In millions)	Cost or Amortized Cost	Fair Value	Amount Shown on Consolidated Balance Sheet
AFS securities			
U.S government and agencies	$ 35	$ 36	$ 36
U.S. state, municipal and political subdivisions	1,322	1,541	1,541
Foreign governments	298	327	327
Public utilities	701	731	731
Redeemable preferred stock	106	114	114
Other corporate	43,299	46,383	46,383
CLO	7,524	7,349	7,349
ABS	5,018	5,118	5,118
CMBS	2,304	2,400	2,400
RMBS	6,872	7,375	7,375
Trading securities	1,890	2,054	2,054
Total fixed maturity securities	69,369	73,428	73,428
Equity securities			
Public utilities	—	1	1
Industrial, miscellaneous and all other common stock	50	48	48
Nonredeemable preferred stocks	188	198	198
Total equity securities	238	247	247
Mortgage loans, net of allowances	14,304		14,306
Investment funds	664		731
Policy loans	417		417
Funds withheld at interest	15,181		15,181
Derivative assets	1,588		2,888
Short-term investments	596		596
Other investments	158		158
Total investments	$ 102,515		$ 107,952

ATHENE HOLDING LTD.
Schedule II — Condensed Financial Information of Registrant (Parent Company Only) — Balance Sheets

	December 31,	
(In millions, except per share data)	2019	2018
Assets		
Investments		
Available-for-sale securities, at fair value (amortized cost: 2019 – $56 and 2018 – $46)	$ 61	$ 45
Cash and cash equivalents	171	112
Investments in related parties		
Available-for-sale securities, at fair value (amortized cost: 2019 – $2 and 2018 – $0)	2	—
Investment funds	132	105
Other assets	6	24
Intercompany receivable	13	21
Investments in subsidiaries	14,085	9,108
Total assets	$ 14,470	$ 9,415
Liabilities and Equity		
Liabilities		
Long-term debt	$ 992	$ 991
Note payable to subsidiary	38	105
Other liabilities	40	35
Intercompany payable	9	8
Total liabilities	1,079	1,139
Equity		
Preferred stock		
Series A – par value $1 per share; $863 aggregate liquidation preference; authorized, issued and outstanding: 2019 and 2018 – 0.0 shares	—	—
Series B – par value $1 per share; $345 aggregate liquidation preference; authorized, issued and outstanding: 2019 and 2018 – 0.0 shares	—	—
Common stock		
Class A – par value $0.001 per share; authorized: 2019 and 2018 – 425.0 shares; issued and outstanding: 2019 – 143.2 and 2018 – 162.4 shares	—	—
Class B – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 325.0 shares; issued and outstanding: 2019 – 25.4 and 2018 – 25.4 shares	—	—
Class M-1 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.1 shares; issued and outstanding: 2019 – 3.3 and 2018 – 3.4 shares	—	—
Class M-2 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 5.0 shares; issued and outstanding: 2019 – 0.8 and 2018 – 0.8 shares	—	—
Class M-3 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.5 shares; issued and outstanding: 2019 – 1.0 and 2018 – 1.0 shares	—	—
Class M-4 – par value $0.001 per share; convertible to Class A; authorized: 2019 and 2018 – 7.5 shares; issued and outstanding: 2019 – 4.0 and 2018 – 4.1 shares	—	—
Additional paid-in capital	4,171	3,462
Retained earnings	6,939	5,286
Accumulated other comprehensive income (loss)	2,281	(472)
Total Athene Holding Ltd. shareholders' equity	13,391	8,276
Total liabilities and equity	$ 14,470	$ 9,415

See accompanying notes to condensed financial information of registrant (parent company only)

ATHENE HOLDING LTD.
Schedule II — Condensed Financial Information of Registrant (Parent Company Only)
Statements of Income and Comprehensive Income (Loss)

(In millions)	Years ended December 31, 2019	2018	2017
Revenue			
Net investment income (related party: 2019 – $8, 2018 – $(3) and 2017 – $3)	$ 15	$ 17	$ 5
Investment related gains (losses) (related party: 2019 – $1, 2018 – $24 and 2017 – $0)	6	14	(7)
Other revenues	—	20	—
Total revenues	21	51	(2)
Benefits and Expenses			
Operating expenses (related party: 2019 – $11, 2018 – $7 and 2017 – $8)	142	124	142
Total benefits and expenses	142	124	142
Loss before income taxes and equity earnings in subsidiaries	(121)	(73)	(144)
Equity earnings in subsidiaries	2,293	1,126	1,502
Net income available to Athene Holding Ltd. shareholders	2,172	1,053	1,358
Less: Preferred stock dividends	36	—	—
Net income available to Athene Holding Ltd. common shareholders	$ 2,136	$ 1,053	$ 1,358
Net income available to Athene Holding Ltd. shareholders	$ 2,172	$ 1,053	$ 1,358
Other comprehensive income (loss)	2,787	(1,879)	896
Comprehensive income (loss)	$ 4,959	$ (826)	$ 2,254

See accompanying notes to condensed financial information of registrant (parent company only)

ATHENE HOLDING LTD.
Schedule II — Condensed Financial Information of Registrant (Parent Company Only) — Statements of Cash Flows

	Years ended December 31,		
(In millions)	2019	2018	2017
Net cash used in operating activities	$ (106)	$ (66)	$ (54)
Cash flows from investing activities			
Capital contributions to subsidiary	(70)	(95)	—
Receipts on loans to subsidiaries	—	64	—
Issuances of loans to subsidiaries	—	(20)	(44)
Sales, maturities, and repayments of:			
Available-for-sale securities	4	178	9
Investment funds – related party	1	—	—
Short-term investments	—	64	—
Purchases of:			
Fixed maturity securities, available-for-sale (related party: 2019 – $(2), 2018 – $0, and 2017 – $0)	(16)	(994)	(17)
Investment funds – related party	(20)	—	—
Short-term investments	—	(64)	—
Other investing activities, net	27	(90)	74
Net cash (used in) provided by investing activities	(74)	(957)	22
Cash flows from financing activities			
Proceeds from long-term debt	—	998	—
Proceeds from note payable with subsidiary	108	105	—
Repayment of note payable with subsidiary	(174)	—	—
Issuance of preferred stock, net of expenses	1,172	—	—
Preferred stock dividends	(36)	—	—
Repurchase of common stock	(832)	(105)	(10)
Other financing activities, net	1	(5)	(5)
Net cash provided by (used in) financing activities	239	993	(15)
Net increase (decrease) in cash and cash equivalents	59	(30)	(47)
Cash and cash equivalents at beginning of year	112	142	189
Cash and cash equivalents at end of year	$ 171	$ 112	$ 142
Supplementary information			
Cash paid for interest	$ 46	$ 23	$ —
Non-cash transactions			
Non-cash capital contributions to subsidiaries	—	803	—
Investment in Athora Holding Ltd. received upon deconsolidation	—	108	—

See accompanying notes to condensed financial information of registrant (parent company only)

1. Basis of Presentation

The accompanying condensed financial statements of Athene Holding Ltd. (AHL) should be read in conjunction with the consolidated financial statements and notes of AHL and its subsidiaries (consolidated financial statements).

For purposes of these condensed financial statements, AHL's wholly owned and majority owned subsidiaries are presented under the equity method of accounting. Under this method, the assets and liabilities of subsidiaries are not consolidated. The investments in subsidiaries are recorded on the condensed balance sheets. The income from subsidiaries is reported on a net basis as equity earnings of subsidiaries on the condensed statements of income.

2. Intercompany Transactions

Unsecured Revolving Notes Receivable—AHL has unsecured revolving notes receivable from subsidiaries Athene USA Corporation (Athene USA) and Athene Life Re Ltd. (ALRe).

The unsecured revolving notes receivable from Athene USA has a borrowing capacity of $250 million and had no outstanding balance as of December 31, 2019 and 2018. Interest accrues at the U.S. short-term applicable federal rate per year, and the balance is due on June 1, 2020, or earlier at AHL's request.

The unsecured revolving notes receivable from ALRe has a borrowing capacity of $1 billion and had no outstanding balance as of December 31, 2019 and 2018. Interest accrues at a fixed rate of 1.25% and has a maturity date of March 31, 2024, or earlier at AHL's request.

Unsecured Revolving Note Payable—In addition to the unsecured revolving notes receivable described above, 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 December 31, 2019 and 2018, the revolving note payable had an outstanding balance of $38 million and $105 million, respectively.

Funds in Trust (Restricted Assets)—AHL has agreed to maintain the authorized control level risk-based capital (RBC) of its subsidiary, Athene Life Insurance Company of New York (ALICNY), at an amount not less than 450%. As a result, AHL has established a separate backstop trust account with a fair value of $44 million and $37 million as of December 31, 2019 and 2018, respectively, consisting of available-for-sale investments and cash. If ALICNY's authorized control level RBC falls below 450%, the funds in the backstop trust account would be used to replenish ALICNY's authorized control level RBC to at least 450%.

3. Debt and Guarantees

AHL has guaranteed certain of the obligations of Athene USA, ALRe, and Athene Annuity Re Ltd. in connection with its revolving credit facility. Additionally, AHL issued senior notes in the first quarter of 2018. See *Note 9 – Debt* to the consolidated financial statements for further discussion on the credit facility and senior notes.

AHL has entered into capital maintenance agreements with each of its material U.S. insurance subsidiaries, pursuant to which AHL agrees to provide capital to the subsidiary to the extent that the capital of the subsidiary falls below a specified threshold as set with the applicable subsidiary's domestic regulator. In addition, on December 17, 2018, AHL entered into a capital maintenance agreement with its indirect subsidiary Athene London Assignment Corporation (Athene London) pursuant to which AHL agreed to contribute cash, cash equivalents, marketable securities, or other liquid assets so as to maintain capital in Athene London to ensure that it has the necessary funds to timely satisfy any obligations it has under any assumed settlement agreement. AHL does not anticipate making any capital infusions in Athene London pursuant to the capital maintenance agreement.

4. Dividends, Return of Capital and Capital Contributions

During the years ended December 31, 2019 and 2018, AHL received $3 million and $50 million, respectively, of dividends from subsidiaries. During the years ended December 31, 2019 and 2018, AHL contributed $70 million and $898 million, respectively, to subsidiaries. There were no dividends received or contributions made to subsidiaries during the year ended December 31, 2017. See *Note 13 – Statutory Requirements* to the consolidated financial statements for additional information on subsidiary dividend restrictions.

5. Income Taxes

AHL is a tax resident of the United Kingdom (UK). See *Note 12 – Income Taxes* to the consolidated financial statements for additional information on UK income taxes.

ATHENE HOLDING LTD.
Schedule III
Supplementary Insurance Information

(In millions)	DAC, DSI, and VOBA	Future policy benefits, losses, claims and loss expenses[1]	Other policy claims and benefits	Premiums	Net investment income	Benefits, claims, losses, and settlement expenses[2]	Amortization of DAC and VOBA	Policy and other operating expenses
2019								
Retirement Services	$ 5,008	$ 126,075	$ 138	$ 6,382	$ 4,405	$ 12,254	$ 958	$ 599
Corporate and other	—	—	—	—	117	—	—	145
Total	$ 5,008	$ 126,075	$ 138	$ 6,382	$ 4,522	$ 12,254	$ 958	$ 744
2018								
Retirement Services	$ 5,907	$ 113,314	$ 142	$ 3,462	$ 3,960	$ 4,662	$ 174	$ 496
Corporate and other	—	—	—	—	44	—	—	130
Total	$ 5,907	$ 113,314	$ 142	$ 3,462	$ 4,004	$ 4,662	$ 174	$ 626
2017								
Retirement Services	$ 2,972	$ 80,818	$ 137	$ 2,347	$ 3,087	$ 5,969	$ 344	$ 444
Corporate and other	—	4,838	74	179	182	339	—	228
Total	$ 2,972	$ 85,656	$ 211	$ 2,526	$ 3,269	$ 6,308	$ 344	$ 672

[1] *Represents interest sensitive contract liabilities and future policy benefits on the consolidated balance sheets.*

[2] *Represents interest sensitive contract benefits, amortization of deferred sales inducements, future policy and other policy benefits, and dividends to policyholders on the consolidated statements of income.*

ATHENE HOLDING LTD.
Schedule IV
Reinsurance

(In millions, except for percentages)	Gross amount	Ceded to other companies	Assumed from other companies	Net amount	Percentage of amount assumed to net
Year ended December 31, 2019					
Life insurance in force at end of year	$ 33,221	$ 39,145	$ 7,317	$ 1,393	525.3%
Premiums	5,449	159	1,092	6,382	17.1%
Year ended December 31, 2018					
Life insurance in force at end of year	39,941	45,957	7,857	1,841	426.8%
Premiums	2,813	417	1,066	3,462	30.8%
Year ended December 31, 2017					
Life insurance in force at end of year	43,267	49,860	8,551	1,958	436.7%
Premiums	2,700	195	21	2,526	0.8%

ATHENE HOLDING LTD.
Schedule V
Valuation and Qualifying Accounts

(In millions)		Additions			
Description	Balance at beginning of year	Charged to costs and expenses	Assumed through acquisitions	Deductions	Balance at end of year
Reserves deducted from assets to which they apply					
Year ended December 31, 2019					
Valuation allowance on deferred tax assets	$ 52	$ 31	$ —	$ (20)	$ 63
Valuation allowance on mortgage loans	2	10	—	(1)	11
Year ended December 31, 2018					
Valuation allowance on deferred tax assets	96	9	—	(53)	52
Valuation allowance on mortgage loans	2	1	—	(1)	2
Year ended December 31, 2017					
Valuation allowance on deferred tax assets	94	19	—	(17)	96
Valuation allowance on mortgage loans	2	—	—	—	2

EXHIBIT INDEX

Exhibit No.	Description
3.1	Certificate of Incorporation of Athene Holding Ltd. (incorporated by reference to Exhibit 3.1 to the Form S-1 filed on May 9, 2016).
3.2.1	Memorandum of Association of Athene Holding Ltd. (incorporated by reference to Exhibit 3.2 to the Form S-1 filed on May 9, 2016).
3.2.2	Form of Certificate of Deposit of Memorandum of Increase of Share Capital (incorporated by reference to Exhibit 3.2.1 to the Form S-1 filed on November 10, 2016).
3.3	Twelfth Amended and Restated Bye-laws of Athene Holding Ltd., effective June 4, 2019 (incorporated by reference to Exhibit 3.2 to the Form 8-K filed on June 10, 2019 dated June 4, 2019).
4.1	Form of Athene Holding Ltd. Class A common share certificate (incorporated by reference to Exhibit 4.1 to the Form S-1 filed on November 10, 2016).
4.2.1	Third Amended and Restated Registration Rights Agreement, dated as of April 4, 2014, among Athene Holding Ltd. and the shareholders party thereto (incorporated by reference to Exhibit 4.2 to the Form S-1 filed on October 25, 2016).
4.2.2	First Amendment to Third Amended and Restated Registration Rights Agreement, dated as of October 6, 2015, among Athene Holding Ltd. and the shareholders party thereto (incorporated by reference to Exhibit 4.3 to the Form S-1 filed on October 25, 2016).
4.2.3	Second Amendment to Third Amended and Restated Registration Rights Agreement, dated as of November 22, 2016, among Athene Holding Ltd. and the shareholders party thereto (incorporated by reference to Exhibit 4.4 to the Form 10-K filed on March 16, 2017).
4.3.1	Indenture for Debt Securities, dated as of January 12, 2018, by and between Athene Holding Ltd. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to the Form 8-K filed on January 12, 2018).
4.3.2	First Supplemental Indenture, dated January 12, 2018, by and 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 January 12, 2018).
4.4.1	Certificate of Designations of 6.35% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, Series A (incorporated by reference to Exhibit 4.1 to the Form 8-K filed on June 10, 2019 dated June 5, 2019).
4.4.2	Form of Share Certificate evidencing 6.35% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, Series A (incorporated by reference to Exhibit 4.2 to the Form 8-K filed on June 10, 2019 dated June 5, 2019).
4.4.3	Deposit Agreement, dated June 10, 2019, between Athene Holding Ltd. and Computershare Inc. and Computershare Trust Company, N.A., collectively, and the holders from time to time of the Depositary Receipts (incorporated by reference to Exhibit 4.3 to the Form 8-K filed on June 10, 2019 dated June 5, 2019).
4.4.4	Form of Depositary Receipt (included in Exhibit 4.4.3).
4.5.1	Certificate of Designations of 5.625% Fixed Rate Perpetual Non-Cumulative Preference Shares, Series B (incorporated by reference to Exhibit 4.1 to the Form 8-K filed on September 19, 2019).
4.5.2	Form of Share Certificate evidencing 5.625% Fixed Rate Perpetual Non-Cumulative Preference Shares, Series B (incorporated by reference to Exhibit 4.2 to the Form 8-K filed on September 19, 2019).
4.5.3	Deposit Agreement, dated September 19, 2019, between Athene Holding Ltd. and Computershare Inc. and Computershare Trust Company, N.A., collectively, and the holders from time to time of the Depositary Receipts (incorporated by reference to Exhibit 4.3 to the Form 8-K filed on September 19, 2019).
4.5.4	Form of Depositary Receipt (included in Exhibit 4.5.3).
4.6	Description of Securities.
10.1	Credit Agreement, dated as of December 3, 2019, among Athene Holding Ltd., Athene Life Re Ltd., Athene USA Corporation and Athene Annuity Re Ltd., as Borrowers, the lenders from time to time party thereto, and Citibank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to the Form 8-K filed on December 3, 2019).
10.2	Guaranty, dated as of December 3, 2019, among Athene Holding Ltd., Athene Life Re Ltd., Athene USA Corporation and Athene Annuity Re Ltd., as Guarantors, and Citibank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.2 to the Form 8-K filed on December 3, 2019).
10.3.1	Seventh Amended and Restated Fee Agreement, dated as of June 10, 2019, between Athene Asset Management, LLC and Athene Holding Ltd. (incorporated by reference to Exhibit 10.1 to the Form 8-K filed on June 10, 2019 dated June 4, 2019).
10.3.2	Applicable 2016 Liability Fee Discount, effective as of September 30, 2016, between Athene Asset Management, L.P. and Athene Holding Ltd. (incorporated by reference to Exhibit 10.7.2 to the Form S-1 filed on October 25, 2016).
10.4	Amended and Restated Coinsurance Agreement, dated as of July 31, 2015, between Athene Life Insurance Company of New York and First Allmerica Financial Life Insurance Company (regarding certain term and universal life policies) (incorporated by reference to Exhibit 10.9 to the Form S-1 filed on October 25, 2016).
10.5	Coinsurance and Assumption Agreement, dated as of October 1, 2013, between Aviva Life and Annuity Company (now known as Athene Annuity and Life Company) and Presidential Life Insurance Company - USA (now known as Accordia Life and Annuity Insurance Company) (incorporated by reference to Exhibit 10.10 to the Form S-1 filed on October 25, 2016).

Exhibit No.	Description
10.6	Amended and Restated Coinsurance and Assumption Agreement, dated as of July 31, 2015, between Athene Life Insurance Company of New York and First Allmerica Financial Life Insurance Company (regarding certain policies described therein) (incorporated by reference to Exhibit 10.11 to the Form S-1 filed on October 25, 2016).
10.7	Amended and Restated Coinsurance Agreement, dated as of December 28, 2015, between Athene Annuity and Life Company and Accordia Life and Annuity Company (formerly known as Presidential Life Insurance Company-USA) (regarding the ILICO closed block) (incorporated by reference to Exhibit 10.12 to the Form S-1 filed on October 25, 2016).
10.8	Funds Withheld Coinsurance Agreement, dated as of October 1, 2013, between Aviva Life and Annuity Company of New York (now known as Athene Life Insurance Company of New York) and First Allmerica Financial Life Insurance Company (regarding certain term and universal life policies) (incorporated by reference to Exhibit 10.13 to the Form S-1 filed on October 25, 2016).
10.9	Coinsurance Agreement, dated as of April 29, 2011, between Liberty Life Insurance Company (now known as Athene Annuity & Life Assurance Company) and Protective Life Insurance Company (incorporated by reference to Exhibit 10.14 to the Form S-1 filed on October 25, 2016).
10.10.1	Employment Agreement, dated as of February 27, 2013, between Athene Holding Ltd. and James R. Belardi (incorporated by reference to Exhibit 10.15.1 to the Form S-1 filed on October 25, 2016).
10.10.2	Employment Agreement, dated as of September 7, 2015, between Athene Holding Ltd. and William J. Wheeler (incorporated by reference to Exhibit 10.15.2 to the Form S-1 filed on October 25, 2016).
10.10.3	Employment Agreement, dated as of October 12, 2015, between Athene Holding Ltd. and Martin P. Klein (incorporated by reference to Exhibit 10.15.3 to the Form S-1 filed on October 25, 2016).
10.11.1	Amended and Restated Athene Holding Ltd. 2009 Share Incentive Plan (incorporated by reference to Exhibit 10.16.1 to the Form S-1 filed on October 25, 2016).
10.11.2	Amended and Restated Athene Holding Ltd. 2012 Share Incentive Plan (incorporated by reference to Exhibit 10.16.2 to the Form S-1 filed on October 25, 2016).
10.11.3	Athene Holding Ltd. 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.16.3 to the Form S-1 filed on October 25, 2016).
10.11.4	Amendment No. 1 to 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.16.4 to the Form S-1 filed on October 25, 2016).
10.11.5	Athene Holding Ltd. 2016 Share Incentive Plan (incorporated by reference to Exhibit 10.16.5 to the Form S-1 filed on October 25, 2016).
10.11.6	Athene Holding Ltd. 2019 Share Incentive Plan (incorporated by reference to Exhibit 10.2 to the Form 8-K filed on June 10, 2019 dated June 4, 2019).
10.12	Form of Amended and Restated Restricted Share Award Agreement (Class M-1 common shares) (incorporated by reference to Exhibit 10.17 to the Form S-1 filed on October 25, 2016).
10.13	Form of Amended and Restated Restricted Share Award Agreement (Class M-2 common shares) (incorporated by reference to Exhibit 10.18 to the Form S-1 filed on October 25, 2016).
10.14	Form of Amended and Restated Restricted Share Award Agreement (Class M-3 common shares) (incorporated by reference to Exhibit 10.19 to the Form S-1 filed on October 25, 2016).
10.15	Form of Amended and Restated Restricted Share Award Agreement (Class M-4 common shares) (incorporated by reference to Exhibit 10.20 to the Form S-1 filed on November 10, 2016).
10.16	Form of Amended and Restated Restricted Share Unit Award Agreement (similar to Class M-4 common shares) (incorporated by reference to Exhibit 10.21 to the Form S-1 filed on November 10, 2016).
10.17	Form of Amended and Restated Restricted Share Award Agreement (Class M-4 Prime common shares) (incorporated by reference to Exhibit 10.22 to the Form S-1 filed on November 10, 2016).
10.18	Form of Amended and Restated Restricted Share Unit Award Agreement (similar to Class M-4 Prime common shares) (incorporated by reference to Exhibit 10.23 to the Form S-1 filed on November 10, 2016).
10.19.1	Form of Amended and Restated Class A Share Award Agreement (Class A common shares issued at $13.46 per share) (incorporated by reference to Exhibit 10.24.1 to the Form S-1 filed on November 10, 2016).
10.19.2	Form of Amendment Letter to the Amended and Restated Class A Share Award Agreement (Class A common shares issued at $13.46 per share) (incorporated by reference to Exhibit 10.24.2 to the Form S-1 filed on November 10, 2016).
10.20.1	Form of Restricted Share Award Agreement (Class A common shares) (incorporated by reference to Exhibit 10.25.1 to the Form S-1 filed on November 10, 2016).
10.20.2	Form of Amendment Letter to the Restricted Share Award Agreement (Class A common shares) (incorporated by reference to Exhibit 10.25.2 to the Form S-1 filed on November 10, 2016).
10.21.1	Form of Class A Share Award Agreement (Class A common shares issued at fair market value) (incorporated by reference to Exhibit 10.26.1 to the Form S-1 filed on November 10, 2016).
10.21.2	Form of Amendment Letter to Class A Share Award Agreement (Class A common shares issued at fair market value) (incorporated by reference to Exhibit 10.26.2 to the Form S-1 filed on November 10, 2016).
10.22.1	Form of 2014 Share Incentive Plan Nonqualified Stock Option Award Notice and Nonqualified Stock Option Agreement (incorporated by reference to Exhibit 10.27 to the Form S-1 filed on October 25, 2016).

Exhibit No.	Description
10.22.2	Form of 2016 Share Incentive Plan Nonqualified Stock Option Award Notice and Nonqualified Stock Option Agreement (incorporated by reference to Exhibit 10.26.2 to the Form 10-K filed on February 26, 2018).
10.22.3	Form of 2019 Share Incentive Plan Nonqualified Stock Option Award Notice and Nonqualified Stock Option Agreement.
10.23.1	Form of 2014 Share Incentive Plan Restricted Share Unit Award Notice (Performance-Based Vesting) and Restricted Share Unit Award Agreement (incorporated by reference to Exhibit 10.28 to the Form S-1 filed on October 25, 2016).
10.23.2	Form of 2016 Share Incentive Plan Restricted Share Unit Award Notice (Performance-Based Vesting) and Restricted Share Unit Award Agreement (incorporated by reference to Exhibit 10.27.2 to the Form 10-K filed on February 26, 2018).
10.23.3	Form of 2019 Share Incentive Plan Restricted Share Unit Award Notice (Performance-Based Vesting) and Restricted Share Unit Award Agreement.
10.24.1	Form of 2014 Share Incentive Plan Restricted Share Unit Award Notice (Time-Based Vesting) and Restricted Share Unit Award Agreement (incorporated by reference to Exhibit 10.29 to the Form S-1 filed on October 25, 2016).
10.24.2	Form of 2016 Share Incentive Plan Restricted Share Unit Award Notice (Time-Based Vesting) and Restricted Share Unit Award Agreement (incorporated by reference to Exhibit 10.28.2 to the Form 10-K filed on February 26, 2018).
10.24.3	Form of 2019 Share Incentive Plan Restricted Share Unit Award Notice (Time-Based Vesting) and Restricted Share Unit Award Agreement.
10.25.1	Form of Amended and Restated Restricted Share Award Agreement (2014 awards to certain non-employee directors) (incorporated by reference to Exhibit 10.30 to the Form S-1 filed on November 10, 2016).
10.25.2	Form of Restricted Share Award Agreement (2015 awards to certain non-employee directors) (incorporated by reference to Exhibit 10.31 to the Form S-1 filed on November 10, 2016).
10.25.3	Form of Restricted Share Award Notice and Restricted Share Award Agreement (2019 awards to certain non-employee directors).
10.26.1	Form of 2016 Share Incentive Plan Restricted Share Award Notice and Restricted Share Award Agreement (incorporated by reference to Exhibit 10.31 to the Form 10-K filed on February 26, 2018).
10.26.2	Form of 2019 Share Incentive Plan Restricted Share Award Notice and Restricted Share Award Agreement.
10.27.1	Form of 2016 Share Incentive Plan Restricted Share Award Notice (Performance-Based Vesting) and Restricted Share Award Agreement (incorporated by reference to Exhibit 10.32 to the Form 10-K filed on February 26, 2018).
10.27.2	Form of 2019 Share Incentive Plan Restricted Share Award Notice (Performance-Based Vesting) and Restricted Share Award Agreement.
10.28	Form of Director Retention Letter (incorporated by reference to Exhibit 10.3 to the Form 10-Q filed on August 5, 2019).
10.29	Supplemental Executive Retirement Plan (incorporated by reference to Exhibit 10.33 to the Form S-1 filed on October 25, 2016).
10.30.1	Second Amended and Restated Master Sub-Advisory Agreement, effective as of October 1, 2019, among Athene Asset Management LLC, Apollo Capital Management, L.P., Apollo Global Real Estate Management, L.P., ARM Manager LLC, Apollo Longevity, LLC and Apollo Emerging Markets, LLC.
10.30.2	Third Amended and Restated Master Sub-Advisory Agreement, effective as of October 1, 2019, among Athene Asset Management LLC, Apollo Capital Management, L.P., Apollo Global Real Estate Management, L.P., ARM Manager LLC, Apollo Longevity, LLC, Apollo Royalties Management, LLC and Apollo Emerging Markets, LLC.
10.30.3	Third Amended and Restated Master Sub-Advisory Agreement, effective as of October 1, 2019, among Athene Asset Management LLC, Apollo Capital Management, L.P., Apollo Global Real Estate Management, L.P., ARM Manager LLC, Apollo Longevity, LLC and Apollo Emerging Markets, LLC.
10.31.1	Cooperation Agreement, dated as of January 1, 2018, between AGER Bermuda Holding Ltd. and Athene Holding Ltd. (incorporated by reference to Exhibit 10.1 to the Form 8-K filed on January 2, 2018).
10.31.2	Amendment No. 1 to the Cooperation Agreement, dated as of January 7, 2020, between Athora Holding Ltd. and Athene Holding Ltd.
10.32.1	Reinsurance agreement (FA Business), effective as of June 1, 2018, between Athene Annuity & Life Assurance Company and Voya Insurance and Annuity Company (incorporated by reference to Exhibit 10.1 to the Form 10-Q filed on August 3, 2018).
10.32.2	First Amendment to Reinsurance Agreement (FA Business), effective as of July 1, 2018, between Athene Annuity & Life Assurance Company and Voya Insurance and Annuity Company.
10.33.1	Modified coinsurance agreement (Separate Account FA Business), effective as of June 1, 2018, between Athene Annuity & Life Assurance Company and Voya Insurance and Annuity Company (incorporated by reference to Exhibit 10.2 to the Form 10-Q filed on August 3, 2018).
10.33.2	First Amendment to Modified Coinsurance Agreement (Separate Account FA Business), effective as of June 1, 2018, between Athene Annuity & Life Assurance Company and Voya Insurance and Annuity Company.
10.34	Modified coinsurance agreement (FA Business), effective as of December 31, 2019, between Athene Annuity Re Ltd. and Venerable Insurance and Annuity Company.
10.35	Master Framework Agreement, dated as of September 11, 2019, by and between Athene Co-Invest Reinsurance Affiliate 1A Ltd. and Athene Life Re Ltd. (incorporated by reference to Exhibit 10.1 to the Form 10-Q filed on November 5, 2019.

Exhibit No.	Description
10.36.1	Shareholders Agreement, dated as of October 1, 2019, 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.
10.36.2	First Amendment to Shareholders Agreement, effective as of October 25, 2019, 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.
10.36.3	Second Amendment to Shareholders Agreement, effective as of December 4, 2019, 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.
10.37	Transaction Agreement, dated as of October 27, 2019, by and among Athene Holding Ltd., Apollo Global Management, Inc. and each Person identified on the signature page thereto as a member of the Apollo Operating Group.
10.38	Voting Agreement, dated as of October 27, 2019, by and among Apollo Management Holdings, L.P. and each Person identified on the signature pages thereto as an Other Shareholder.
10.39	Class M Letter Agreement, dated as of October 27, 2019, by and between Athene Holding Ltd. and James R. Belardi (with respect to shares held by Belardi 2018 GRAT).
10.40	Class M Letter Agreement, dated as of October 27, 2019, by and between Athene Holding Ltd. and James R. Belardi (with respect to shares held by Belardi 2019 GRAT).
10.41	Class M Letter Agreement, dated as of October 27, 2019, by and between Athene Holding Ltd. and William J. Wheeler.
21.1	Subsidiaries of the Registrant.
23.1	Consent of PricewaterhouseCoopers LLP regarding Athene Holding Ltd. financial statements.
24.1	Power of Attorney (included on the signature page hereto)
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: February 20, 2020	/s/ Martin P. Klein
	Martin P. Klein
	Executive Vice President and Chief Financial Officer
	(Principal Financial Officer)

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints James R. Belardi, Martin P. Klein and John A. Sondej as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign this Annual Report on Form 10-K, and all amendments thereto, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant in the capacities indicated below:

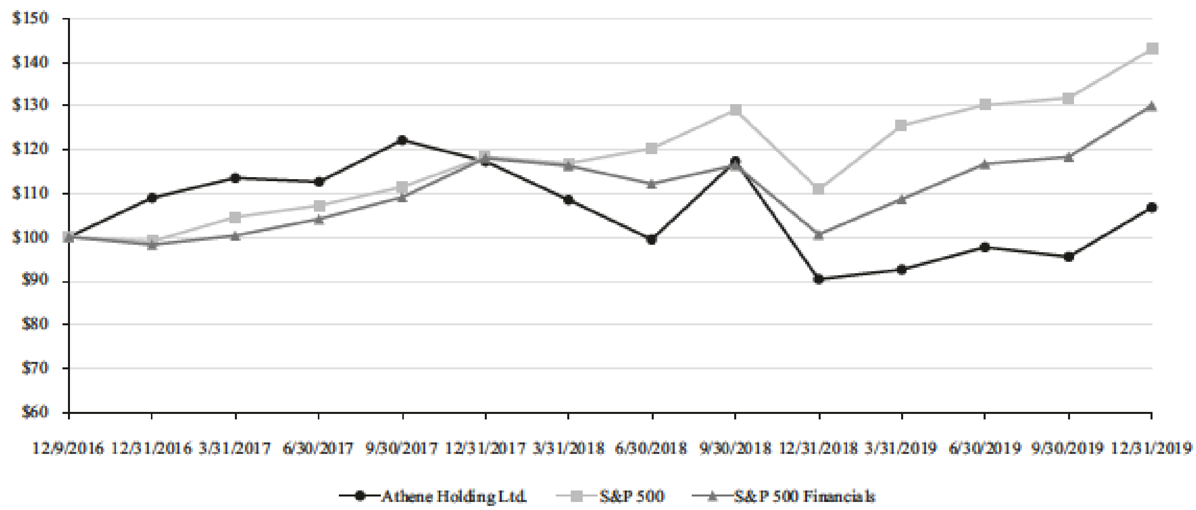
Signatures	Title	Date
/s/ James R. Belardi James R. Belardi	Chairman and Chief Executive Officer (Principal Executive Officer)	February 20, 2020
/s/ Martin P. Klein Martin P. Klein	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 20, 2020
/s/ John A. Sondej John A. Sondej	Senior Vice President and Controller (Principal Accounting Officer)	February 20, 2020
/s/ Marc Beilinson Marc Beilinson	Director	February 20, 2020
/s/ Robert Borden Robert Borden	Director	February 20, 2020
/s/ Mitra Hormozi Mitra Hormozi	Director	February 20, 2020
/s/ Scott Kleinman Scott Kleinman	Director	February 20, 2020
/s/ Brian Leach Brian Leach	Director	February 20, 2020
Gernot Lohr	Director	February 20, 2020
/s/ H. Carl McCall H. Carl McCall	Director	February 20, 2020

Signatures	Title	Date
/s/ Matthew R. Michelini Matthew R. Michelini	Director	February 20, 2020
/s/ Dr. Manfred Puffer Dr. Manfred Puffer	Director	February 20, 2020
/s/ Marc Rowan Marc Rowan	Director	February 20, 2020
/s/ Lawrence J. Ruisi Lawrence J. Ruisi	Director	February 20, 2020
/s/ Hope Schefler Taitz Hope Schefler Taitz	Director	February 20, 2020
/s/ Arthur Wrubel Arthur Wrubel	Director	February 20, 2020
/s/ Fehmi Zeko Fehmi Zeko	Director	February 20, 2020

Common Stock Performance Graph

The graph and table below compare the total return on our common shares with the total return on the S&P 500 and S&P 500 Financials indices, respectively, for the period from December 9, 2016, our initial public offering date, to December 31, 2019. The graph and table show the total return on a hypothetical $100 investment in our common shares and in each index, respectively, at the close of market on December 9, 2016, including the reinvestment of all dividends. The graph and table below shall not be deemed to be "soliciting material" or to be "filed," or to be incorporated by reference in future filings with the SEC, or to be subject to the liabilities of Section 18 of the Exchange Act, except to the extent that we specifically incorporate it by reference into a document filed under the Securities Act or the Exchange Act.

CUMULATIVE TOTAL RETURN
Based upon an initial investment of $100 on December 9, 2016
with dividends reinvested



	12/9/2016	12/31/2016	3/31/2017	6/30/2017	9/30/2017	12/31/2017	3/31/2018	6/30/2018	9/31/2018	12/31/2018	3/31/2019	6/30/2019	9/31/2019	12/31/2019
Athene Holding Ltd. common stock	$100.00	$108.94	$113.48	$112.62	$122.22	$117.39	$108.54	$ 99.52	$117.28	$ 90.42	$ 92.62	$ 97.75	$ 95.48	$106.77
S&P 500	100.00	99.08	104.57	107.25	111.50	118.33	116.88	120.31	128.96	110.95	125.44	130.19	131.74	142.98
S&P 500 Financials	100.00	98.29	100.34	104.16	109.11	117.98	116.35	112.18	116.51	100.68	108.63	116.70	118.38	130.04

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Executive Management and Board of Directors

As of March 31, 2020

Executive Management Team

James R. Belardi
Chief Executive Officer
and Chief Investment Officer

William J. Wheeler
President

Grant Kvalheim
Chief Executive Officer
and President – Athene USA

Martin P. Klein
Executive Vice President
and Chief Financial Officer

John M. Rhodes
Executive Vice President
and Chief Risk Officer

Sean C. Brennan
Executive Vice President,
Pension Risk Transfer and Flow Reinsurance

Kristi Kaye Burma
Executive Vice President,
Human Resources

Katherine A. Daly
Executive Vice President,
Corporate Development

Michael S. Downing
Executive Vice President
and Chief Actuary

Randall W. Epright
Executive Vice President
and Chief Information Officer

John L. Golden
Executive Vice President
and General Counsel

Christopher J. Grady
Executive Vice President,
Retail Sales – Athene USA

Christopher R. Welp
Executive Vice President,
Insurance Operations – Athene USA

Board of Directors

James R. Belardi
Chairman
Athene Holding Ltd.

Marc Beilinson*
Managing Director
Beilinson Advisory Group

Robert L. Borden
Founding Partner
Delegate Advisors, LLC

Mitra Hormozi
Former General Counsel
Revlon, Inc.

Scott Kleinman
Co-President and Lead Partner,
Private Equity
Apollo Global Management

Brian Leach
Former Head of Franchise
Risk & Strategy
Citigroup

Gernot Lohr
Senior Partner
Apollo Global Management

H. Carl McCall
Former Comptroller
State of New York

Matthew R. Michelini
Senior Partner
Apollo Global Management

Dr. Manfred Puffer
Senior Advisor
Apollo Global Management

Marc Rowan
Co-Founder and
Senior Managing Director
Apollo Global Management

Lawrence J. Ruisi
Former President and
Chief Executive Officer
Loews Cineplex Entertainment

Hope Schefler Taitz
Chief Executive Officer
ELY Capital

Arthur Wrubel
Founder
Wesley Capital Management, LLC

Fehmi Zeko
Former Vice Chairman
Bank of America Merrill Lynch

Shareholder Information

Annual Meeting

Shareholders are invited to Athene Holding Ltd.'s annual meeting which will be held on June 2, 2020, beginning at 9:00 a.m. Eastern Time via live webcast at www.meetingcenter.io/257990728.

Stock Listing

The common stock is listed on the New York Stock Exchange under the symbol "ATH."

Transfer Agent

Correspondence should be mailed to:
Computershare
P.O. Box 505000
Louisville, KY 40233

Overnight correspondence should be sent to:
Computershare
462 South 4th Street, Suite 1600
Louisville, KY 40202

Phone:
U.S.: 800.736.3001
Non-U.S.: 781.575.3100

Website:
Computershare.com

Investor Relations

You can contact our Investor Relations department via email at IR@athene.com or by visiting the Investor Relations section of our website at IR.Athene.com.

Communications

For media inquiries please contact CorporateCommunications@athene.com or visit our website for the most recent news at Athene.com.

*Lead Independent Director

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