

FOUNDATION FOR THE FUTURE

2019 Form 10-K



**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**

For the transition period from to
Commission file number 001-31721

AXIS CAPITAL HOLDINGS LIMITED

(Exact name of registrant as specified in its charter)

Bermuda

(State or other jurisdiction of incorporation or organization)

98-0395986

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

92 Pitts Bay Road, Pembroke, Bermuda HM 08

(Address of principal executive offices and zip code)

(441) 496-2600

(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common shares, par value \$0.0125 per share	AXS	New York Stock Exchange
Depository Shares, each representing a 1/100th interest in a 5.50% Series E preferred shares	AXS PRE	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the 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, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant, computed by reference to the closing price at the last business day of the registrant's most recently completed second fiscal quarter, June 28, 2019, was approximately \$4.9 billion.

At February 21, 2020, there were 84,002,300 common shares outstanding, \$0.0125 par value per share, of the registrant.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A relating to the annual meeting of shareholders to be held on May 7, 2020 are incorporated by reference in response to items 10, 11, 12, 13 and 14 in Part III of this Form 10-K. The definitive proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year ended December 31, 2019.

AXIS CAPITAL HOLDINGS LIMITED

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Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains 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. All statements, other than statements of historical facts included in this report, including statements regarding our estimates, beliefs, expectations, intentions, strategies or projections are forward-looking statements. We intend these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in the United States federal securities laws. In some cases, these statements can be identified by the use of forward-looking words such as "may", "should", "could", "anticipate", "estimate", "expect", "plan", "believe", "predict", "potential", "intend" or similar expressions. These forward-looking statements are not historical facts, and are based on current expectations, estimates and projections, and various assumptions, many of which, by their nature, are inherently uncertain and beyond management's control.

Forward-looking statements contained in this report may include, but are not limited to, information regarding our estimates of losses related to catastrophes and other large losses, measurements of potential losses in the fair market value of our investment portfolio and derivative contracts, our expectations regarding the performance of our business, our financial results, our liquidity and capital resources, the outcome of our strategic initiatives, our expectations regarding estimated synergies and the success of the integration of acquired entities, our expectations regarding the estimated benefits and synergies related to our transformation program, our expectations regarding pricing and other market conditions, our growth prospects, and valuations of the potential impact of movements in interest rates, equity securities' prices, credit spreads and foreign currency rates.

Forward-looking statements only reflect our expectations and are not guarantees of performance. These statements involve risks, uncertainties and assumptions. Accordingly, there are or will be important factors that could cause actual events or results to differ materially from those indicated in such statements. We believe that these factors include, but are not limited to, those described under Item 1A, *Risk Factors* in this report, as those factors may be updated from time to time in our periodic and other filings with the Securities and Exchange Commission (the "SEC"), which are accessible on the SEC's website at www.sec.gov.

We undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

Website and Social Media Disclosure

We use our website (www.axiscapital.com) and our corporate Twitter (@AXIS_Capital) and LinkedIn (AXIS Capital) accounts as channels of distribution of Company information. The information we post through these channels may be deemed material. Accordingly, investors should monitor these channels, in addition to following our press releases, SEC filings and public conference calls and webcasts. In addition, e-mail alerts and other information about AXIS Capital may be received when enrolled in our "E-mail Alerts" program, which can be found in the Investor Information section of our website (www.axiscapital.com). The contents of our website and social media channels are not, however, part of this Annual Report on Form 10-K.

PART I

ITEM 1. BUSINESS

In this Form 10-K, references to "AXIS Capital" refer to AXIS Capital Holdings Limited and references to "we", "us", "our", the "Group" or the "Company" refer to AXIS Capital Holdings Limited and its direct and indirect subsidiaries and branches, including: AXIS Specialty Holdings Bermuda Limited, AXIS Specialty Limited ("AXIS Specialty Bermuda"), AXIS Specialty Limited (Singapore Branch), AXIS Specialty Investments Limited, AXIS Specialty Investments II Limited, AXIS Specialty UK Holdings Limited, AXIS Managing Agency Ltd., AXIS Corporate Capital UK Limited (corporate member which provides 70% capital support to AXIS Syndicate 1686 ("Syndicate 1686")), Novae Group Limited, AXIS UK Services Limited, AXIS Underwriting Limited, AXIS Corporate Capital UK II Limited (sole corporate member of Novae Syndicate 2007 ("Syndicate 2007") and corporate member which provides 30% capital support to Syndicate 1686), AXIS Ventures Limited ("AXIS Ventures"), AXIS Reinsurance Managers Limited ("AXIS Reinsurance Managers"), AXIS Specialty Holdings Ireland Limited, AXIS Specialty Europe SE ("AXIS Specialty Europe"), AXIS Specialty Europe SE (U.K. Branch), AXIS Specialty Europe SE (Belgium Branch), AXIS Specialty Europe SE (Netherlands Branch), AXIS Reinsurance (DIFC) Limited, AXIS Re SE, AXIS Re SE, Dublin (Zurich Branch) ("AXIS Re Europe"), AXIS Re SE Escritório de Representação No Brasil Ltda., Contessa Limited, AXIS Specialty Global Holdings Limited, AXIS Specialty U.S. Holdings, Inc., AXIS Reinsurance Company ("AXIS Re U.S."), AXIS Reinsurance Company (Canadian Branch), AXIS Specialty U.S. Services, Inc., AXIS Specialty U.S. Services, Inc. (U.K. Branch), AXIS Specialty Canada Services, ULC, AXIS Group Services, Inc., AXIS Specialty Underwriters, Inc., AXIS Insurance Company ("AXIS Insurance Co."), AXIS Surplus Insurance Company ("AXIS Surplus"), AXIS Specialty Insurance Company ("AXIS Specialty U.S."), Ternian Insurance Group LLC, AXIS Specialty Finance LLC and AXIS Specialty Finance PLC, unless the context suggests otherwise.

Tabular dollars are in thousands. Amounts in tables may not reconcile due to rounding differences.

General

AXIS Capital, the Bermuda-based holding company, was incorporated on December 9, 2002. AXIS Specialty Bermuda commenced operations on November 20, 2001. AXIS Specialty Bermuda and its subsidiaries became wholly owned subsidiaries of AXIS Capital pursuant to an exchange offer consummated on December 31, 2002.

We provide a broad range of specialty lines insurance and treaty reinsurance solutions to our clients on a worldwide basis, through operating subsidiaries and branch networks based in Bermuda, the United States ("U.S."), Europe, Singapore, Canada and the Middle East. Our underwriting operations are organized around our global underwriting platforms, AXIS Insurance and AXIS Re.

The markets in which we operate have historically been cyclical. During periods of excess underwriting capacity, as defined by availability of capital, competition can result in lower pricing and less favorable policy terms and conditions for insurers and reinsurers. During periods of reduced underwriting capacity, pricing, and policy terms and conditions are generally more favorable for insurers and reinsurers. Historically, underwriting capacity has been impacted by several factors, including industry losses, catastrophes, changes in legal and regulatory guidelines, investment results and the ratings and financial strength of competitors.

At December 31, 2019, we had common shareholders' equity of \$4.8 billion, total capital of \$7.4 billion, and total assets of \$25.6 billion.

Our Business Strategy

We are a hybrid specialty insurance and global reinsurance company that is a leader in many of the markets where we choose to compete. We provide our clients and distribution partners with a broad range of risk transfer products and services, and meaningful capacity, backed by excellent financial strength. We manage our portfolio holistically, aiming to construct the optimum portfolio of risks, consistent with our risk appetite and the development of our franchise. We nurture an ethical, entrepreneurial and disciplined culture that promotes outstanding client service, intelligent risk taking and the achievement of superior risk-adjusted returns for our shareholders. We believe that the achievement of our objectives will position us as a global leader in specialty risks.

We aim to execute on our business strategy through the following multi-pronged approach:

We offer a diversified range of products and services across market segments and geographies: Our position as a well-balanced hybrid specialty lines insurance and treaty reinsurance company gives us insight into the opportunities and challenges in a variety of markets. Established in Bermuda in 2001, today we have locations across the U.S., Canada and in Europe where we have offices in Dublin, London, Zurich and Brussels. We are actively pursuing opportunities throughout Latin America, mainly through our Miami office, which enables us to deliver a full range of facultative and treaty reinsurance solutions in Latin America. Our Singapore office serves as our regional hub in Asia and provides specialty insurance and reinsurance solutions in the Asia Pacific region. Our Dubai office provides accident and health specialty reinsurance solutions to our clients in the Middle East and Africa. We have expanded our presence in the London market and at Lloyd's of London ("Lloyd's") through our acquisition of Novae Group plc ("Novae"), and our acquisition of specialty aviation insurer and reinsurer, Compagnie Belge d'Assurances Aviation NV/SA ("Aviabel"), has given us a strong foothold in continental Europe.

We underwrite a balanced portfolio of risks, including complex and volatile lines, moderating overall volatility with risk limits, diversification and risk management: Risk management is a strategic priority embedded in our organizational structure and we are continuously monitoring, reviewing and refining our enterprise risk management practices. We combine judgment and experience with data-driven analysis, enhancing our overall risk selection process.

We modulate our risk appetite and deployment of capital across the underwriting cycle, commensurate with available market opportunities and returns: In response to market dynamics, we recognize opportunities as they develop and react quickly as new trends emerge. Our risk analytics provide important and continuous feedback, further assisting with the ongoing assessment of our risk appetite and strategic capital deployment. We have been successful in extending our product lines, finding new distribution channels and entering new geographies. When we do not find sufficiently attractive uses for our capital, we return excess capital to our shareholders through share repurchases or dividends.

We develop and maintain deep, trustful and mutually beneficial relationships with clients and distribution partners, offering high-levels of service and effective solutions for risk management needs: Our management team has extensive industry experience, deep product knowledge and long-standing market relationships. We primarily transact in specialty markets, where risks are complex. Our intellectual capital and proven client-service capability attract clients and distribution partners looking for solutions.

We maintain excellent financial strength, characterized by financial discipline and transparency: Our total capital of \$7.4 billion at December 31, 2019, as well as our high-quality and liquid investment portfolio and our operating subsidiary ratings of "A+" ("Strong") by Standard & Poor's and "A+" ("Superior") by the A.M. Best Company, Inc. ("A.M. Best") are key indicators of our financial strength.

We attract, develop, retain and motivate teams of experts: We aim to attract and retain the top talent in the industry and to motivate our employees to make decisions that are in the best interest of both our clients and shareholders. We nurture an ethical, risk-aware, achievement-oriented culture that promotes professionalism, responsibility, integrity, discipline and entrepreneurship. As a result, we believe that our staff is well-positioned to make the best underwriting and strategic decisions for the Company.

In 2019, our key metrics for performance measurement included operating return on average common equity ("operating ROACE") which is reconciled to the most comparable GAAP financial measure, return on average common equity ("ROACE"), in Item 7 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations' on an annual basis and book value per diluted common share adjusted for dividends over the long-term. Our goal is to achieve top-quintile industry operating ROACE and growth in book value per diluted common share adjusted for dividends, with volatility consistent with the industry average across underwriting cycles.

Segment Information

Our underwriting operations are organized around our global underwriting platforms, AXIS Insurance and AXIS Re. We have determined that we have two reportable segments, insurance and reinsurance. We do not allocate assets by segment, with the exception of goodwill and intangible assets, as we evaluate the underwriting results of each segment separately from the results of our investment portfolio.

Refer to Item 7 'Management's Discussion and Analysis of Financial Condition and Results of Operations' for additional information relating to our reportable segments and Item 8, Note 3 to the Consolidated Financial Statements 'Segment Information' for additional information relating to our reportable segments and a description of the geographic distribution of gross premiums written based on the location of our subsidiaries.

The table below presents gross premiums written in each of our reportable segments for each of the most recent three years.

Year ended December 31,	2019	2018	2017
Insurance	\$ 3,675,931	\$ 3,797,592	\$ 2,814,918
Reinsurance	3,222,927	3,112,473	2,741,355
Total	\$ 6,898,858	\$ 6,910,065	\$ 5,556,273

Insurance Segment

Lines of Business and Distribution

Our insurance segment offers specialty insurance products to a variety of niche markets on a worldwide basis. The following are the lines of business in our insurance segment:

- *Property*: provides physical loss or damage, business interruption and machinery breakdown cover for virtually all types of property, including commercial buildings, residential premises, construction projects and onshore renewable energy installations. This line of business includes primary and excess risks, some of which are catastrophe-exposed.
- *Marine*: provides cover for traditional marine classes, including offshore energy, cargo, liability, recreational marine, fine art, specie, and hull and war. Offshore energy coverage includes physical damage, business interruption, operator's extra expense and liability coverage for all aspects of offshore upstream energy, from exploration and construction through the operation and distribution phases.
- *Terrorism*: provides cover for physical damage and business interruption of an insured following an act of terrorism and includes kidnap and ransom, and crisis management insurance.
- *Aviation*: provides hull and liability, and specific war cover primarily for passenger airlines but also for cargo operations, general aviation operations, airports, aviation authorities, security firms and product manufacturers.
- *Credit and Political Risk*: provides credit and political risk insurance products for banks, commodity traders, corporations and multilateral and export credit agencies. Cover is provided for a range of risks including sovereign default, credit default, political violence, currency inconvertibility and non-transfer, expropriation, aircraft non-repossession and contract frustration due to political events.
- *Professional Lines*: provides directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity, cyber and privacy insurance, medical malpractice and other financial insurance related covers for commercial enterprises, financial institutions, not-for-profit organizations and other professional service providers. This business is predominantly written on a claims-made basis.

- *Liability*: primarily targets primary and low to mid-level excess and umbrella commercial liability risks in the U.S. wholesale markets in addition to primary and excess of loss employers, public, and products liability predominately in the U.K. Target industry sectors include construction, manufacturing, transportation and trucking, and other services.
- *Accident and Health*: includes accidental death, travel insurance and specialty health products for employer and affinity groups.
- *Discontinued Lines - Novae*: includes those lines of business that Novae exited or placed into run-off in the fourth quarter of 2016 and in the first quarter of 2017. These discontinued insurance lines include financial institutions, professional indemnity, international liability, and international direct and facultative property.

We produce business primarily through wholesale and retail brokers worldwide. Some of our insurance products are also distributed through managing general agents ("MGAs") and managing general underwriters ("MGUs"). In the U.S., we have the ability to write business on an admitted basis using forms and rates filed with state insurance regulators and on a non-admitted or surplus lines basis which provides flexibility in forms and rates, as these are not filed with state regulators. Our ability to write business on a non-admitted basis in the U.S. provides us with the pricing flexibility needed to write non-standard coverages. Substantially all of our insurance business is subject to aggregate limits, in addition to event limits.

Gross premiums written by broker, shown individually where premiums by broker were 10% or more of the total in any of the last three years, were as follows:

Years ended December 31,	2019		2018		2017	
Marsh & McLennan Companies Inc.	\$ 434,108	12%	\$ 380,238	10%	\$ 330,057	12%
Aon plc	393,645	11%	405,281	11%	374,940	13%
Other brokers	2,015,822	54%	2,067,447	54%	1,633,444	58%
Managing general agencies and underwriters	832,356	23%	944,626	25%	476,477	17%
Total	\$ 3,675,931	100%	\$ 3,797,592	100%	\$ 2,814,918	100%

No insured accounted for more than 10% of the gross premiums written in the insurance segment.

Competitive Environment

In our insurance segment, where competition is focused on price, availability, service and other considerations, we compete with global carriers and U.S. companies in regional and local markets. We believe we can achieve positive differentiation through underwriting expertise in our chosen lines of business and market segments, providing customized solutions for our strategic partners, and industry leading claim service levels to our customers. In addition, our investment in building an agile business model is expected to further position us to capitalize on opportunities and more quickly bring innovative products and services to market; advancing our efforts to strengthen our portfolio and drive profitable growth.

Reinsurance Segment

Lines of Business and Distribution

Our reinsurance segment provides treaty reinsurance to insurance companies on a worldwide basis, written on an excess of loss and a proportional basis. For excess of loss business, we typically provide an indemnification to the reinsured entity for a portion of losses, both individually and in the aggregate, in excess of a specified individual or aggregate loss deductible. For proportional business, we receive an agreed percentage of the underlying premium and accept liability for the same percentage of incurred losses. Our business is primarily produced through reinsurance brokers worldwide. The following are the lines of business in our reinsurance segment:

- *Catastrophe*: provides protection for most catastrophic losses that are covered in the underlying insurance policies written by our cedants. The underlying policies principally cover property-related exposures but other exposures including workers compensation and personal accident are also covered. The principal perils covered by policies in this portfolio include hurricane and windstorm, earthquake, flood, tornado, hail and fire. In some instances, terrorism may be a covered peril or the only peril. This business is written on a proportional and excess of loss basis.
- *Property*: provides protection for property damage and related losses resulting from natural and man-made perils that are covered in the underlying personal and commercial lines insurance policies written by our cedants. The predominant

exposure is property damage but other risks, including business interruption and other non-property losses, may also be covered when arising from a covered peril. The most significant perils covered by policies in this portfolio include windstorm, tornado and earthquake, but other perils such as freezes, riots, flood, industrial explosions, fire, hail and a number of other loss events are also included. This business is written on a proportional and excess of loss basis.

- *Professional Lines*: provides protection for directors' and officers' liability, employment practices liability, medical malpractice, professional indemnity, environmental liability, cyber and miscellaneous errors and omissions insurance risks. The underlying business is predominantly written on a claims-made basis. This business is written on a proportional and excess of loss basis.
- *Credit and Surety*: provides reinsurance of trade credit insurance products and includes proportional and excess of loss structures. The underlying insurance indemnifies sellers of goods and services in the event of a payment default by the buyer of those goods and services. Surety reinsurance provides protection for losses arising from a broad array of surety bonds issued by insurers to satisfy regulatory demands or contract obligations in a variety of jurisdictions around the world. Mortgage reinsurance is also provided to mortgage guaranty insurers and U.S. government sponsored entities for losses related to credit risk transfer into the private sector.
- *Motor*: provides protection to insurers for motor liability and property damage losses arising out of any one occurrence. A loss occurrence can involve one or many claimants where the ceding insurer aggregates the claims from the occurrence. Traditional proportional and non-proportional reinsurance as well as structured solutions are offered.
- *Liability*: provides protection to insurers of admitted casualty business, excess and surplus lines casualty business and specialty casualty programs. The primary focus of the underlying business is general liability, workers' compensation, auto liability, and excess casualty.
- *Agriculture*: provides protection for risks associated with the production of food and fiber on a global basis for primary insurance companies writing multi-peril crop insurance, crop hail, and named peril covers, as well as custom risk transfer mechanisms for agricultural dependent industries with exposures to crop yield and/or price deviations. This business is written on a proportional and aggregate stop loss reinsurance basis.
- *Engineering*: provides protection for all types of construction risks and risks associated with erection, testing and commissioning of machinery and plants during the construction stage. This line of business also includes cover for losses arising from operational failures of machinery, plant and equipment, and electronic equipment as well as business interruption.
- *Marine and Other*: includes marine and aviation reinsurance.
- *Accident and Health*: includes personal accident, specialty health, accidental death, travel, life and disability reinsurance products which are offered on a proportional and catastrophic or per life excess of events loss basis.
- *Discontinued Lines - Novae*: includes those lines of business that Novae exited or placed into run-off in the fourth quarter of 2016 and in the first quarter of 2017. These discontinued reinsurance lines include motor reinsurance, general liability reinsurance, and international facultative property.

Gross premiums written by broker, shown individually where premiums by broker were 10% or more of the total in any of the last three years, were as follows:

Years ended December 31,	2019		2018		2017	
Marsh & McLennan Companies Inc.	\$ 838,617	26%	\$ 779,375	25%	\$ 783,286	29%
Aon plc	887,602	28%	765,779	25%	583,199	21%
Willis Tower Watson PLC	403,402	13%	361,983	12%	408,188	15%
Other brokers	795,352	24%	864,601	28%	690,337	25%
Direct	135,614	4%	178,568	6%	176,600	6%
Managing general agencies and underwriters	162,339	5%	162,167	5%	99,744	4%
Total	\$ 3,222,927	100%	\$ 3,112,473	100%	\$ 2,741,355	100%

No cedant accounted for more than 10% of the gross premiums written in the reinsurance segment.

Competitive Environment

In our reinsurance segment, competition tends to be focused on availability, service, financial strength and, increasingly, price. We compete with major U.S. and non-U.S. reinsurers and reinsurance departments of numerous multi-line insurance organizations. In addition to traditional market participants, we also compete with new market entrants supported by alternative capital sources offering risk transfer solutions on a collateralized or other non-traditional basis. Our clients may also acquire reinsurance protection through capital market products such as catastrophe bonds and insurance loss warranties. We believe that we achieve a competitive advantage through our diversified global product offering, responsiveness to customer needs and ability to provide sophisticated and innovative products. We offer excellent claims management, strong financial strength ratings and an ability to leverage our balance sheet and relationships with strategic capital partners to provide meaningful capacity.

Cash and Investments

We seek to balance the investment portfolios' objectives of increasing book value with the generation of relatively stable investment income, while providing sufficient liquidity to meet our claims and other obligations. Liquidity needs arising from potential claims are of primary importance and are considered in asset class participation and the asset allocation process. A significant portion of the investment portfolio is dedicated to investment grade fixed maturities that will generate cash flows that match expected claim payouts.

To diversify risk and optimize the growth in book value, we may invest in other asset classes such as equity securities, high yield securities and alternative investments (e.g. hedge funds) which provide higher potential total rates of return. These individual investment classes involve varying degrees of risk, including the potential for more volatile returns and reduced liquidity. However, as part of a balanced portfolio, they also provide diversification from interest rate and credit risk.

With regard to our investment portfolio, we utilize third-party investment managers for security selection and trade execution functions, subject to guidelines and objectives for each asset class. This enables us to actively manage our investment portfolio with access to top performers specializing in various products and markets. We select the managers based on various criteria including investment style, performance history and corporate governance. In addition, we monitor approved investment asset classes for each subsidiary through analysis of our operating environment, including expected volatility of cash flows, overall capital position, regulatory and rating agency considerations. The Finance Committee of our Board of Directors approves our overall group asset allocation targets and investment policy to ensure that they are consistent with our overall goals, strategies and objectives. We also have an Investment and Finance Committee, comprising senior management, which oversees the implementation of our investment strategy.

Refer to Item 7 '*Management's Discussion and Analysis of Financial Condition and Results of Operations – Cash and Investments*' and Item 8, Note 5 to the Consolidated Financial Statements '*Investments*' for additional information regarding our investment portfolio.

Refer to '*Risk and Capital Management*' for additional information regarding the management of investment risk.

RISK AND CAPITAL MANAGEMENT

Risk Management Framework – Overview

Mission and Objectives

The mission of Enterprise Risk Management ("ERM") at the Company is to promptly identify, measure, report and monitor risks that affect the achievement of our strategic, operational and financial objectives. The key objectives of our risk management framework are to:

- Protect our capital base and earnings by monitoring our risks against our stated risk appetite and limits;
- Promote a sound risk management culture through disciplined and informed risk taking;
- Enhance value creation and contribute to an optimal risk-return profile by providing the basis for efficient capital deployment;
- Support our group-wide decision-making process by providing reliable and timely risk information; and
- Safeguard our reputation.

Risk Governance

At the heart of our risk management framework is a governance process with responsibilities for taking, managing, monitoring and reporting risks. We articulate the roles and responsibilities for risk management throughout the organization, from the Board of Directors and the Chief Executive Officer to our business and functional areas, thus embedding risk management throughout the business (refer to '*Risk Governance and Risk Management Organization*' below).

To support our governance process, we rely on our documented policies and guidelines. Our risk policies are a formal set of documents we use to specify our approach and risk mitigation/control philosophy for managing individual and aggregate risks. We also have procedures to approve exceptions and procedures for referring risk issues to senior management and the Board of Directors. Our qualitative and quantitative risk reporting framework provides transparency and early warning indicators to senior management with regard to our overall risk profile, adherence to risk appetite and associated limits, and improvement actions both at an operating entity and Group level.

Various governance and control bodies coordinate to help ensure that objectives are being achieved, risks are identified, and appropriately managed, and internal controls are in place and operating effectively.

Internal Capital Model

An important aspect of our risk management framework is our internal capital model. Utilizing this modeling framework provides us with a holistic view of the capital we put at risk in any year by allowing us to understand the relative interaction among the known risks impacting us. This integrated approach recognizes that a single risk factor can affect different sub-portfolios and that different risk factors can have different mutual dependencies. We continuously review and update our model and its parameters as our risk landscape and external environment continue to evolve.

As well as being used to measure internal risk capital (refer to '*Capital Management*' below), our internal capital model is used as a tool in managing our business, planning capital allocations, portfolio monitoring, reinsurance and retrocession (collectively referred to as "reinsurance") purchasing, and investment asset allocations.

Our internal capital model is an integral part of the business planning process which provides an assessment as to whether our prospective business and investment strategies are in line with our defined risk appetite and objectives, at both the group and operating entity level. The model also provides a basis for optimizing our risk-return profile by providing consistent risk measurement across the Group. The model outputs are reviewed and supplemented with management's judgment and business experience and expertise.

Risk Diversification

As a global insurer and reinsurer with a wide product offering across different businesses, diversification is a key component of our business model and risk framework. Diversification enhances our ability to manage our risks by limiting the impact of

a single event and contributing to relatively stable long-term results and our general risk profile. The degree to which the diversification effect can be realized depends not only on the correlation between risks but also the level of relative concentration of those risks. Therefore, our aim is to maintain a balanced risk profile without any disproportionately large risks. Our internal capital model considers the level of correlation and diversification between individual risks and we measure concentration risk consistently across our business units in terms of pre and post diversified internal risk capital requirements.

Risk Appetite and Limit Framework

Our integrated risk management framework considers material risks that arise from operating our business. Large risks that might accumulate and have the potential to produce substantial losses are subject to our group-wide risk appetite and limit framework. Our risk appetite, as authorized by our Board of Directors, represents the amount of risk that we are willing to accept within the constraints imposed by our capital resources as well as the expectations of our stakeholders as to the type of risk we hold within our business. At an annual aggregated level, we also monitor and manage the potential financial loss from the accumulation of risk exposure in any one year.

Specific risk limits are defined and translated into a consistent framework across our identified risk categories and across our operating entities and are intended to limit the impact of individual risk types or accumulations of risk. Individual limits are established through an iterative process to ensure that the overall framework complies with our group-wide requirements on capital adequacy and risk accumulation.

We monitor risk through, for example, risk dashboards and limit consumption reports. These are intended to allow us to detect potential deviations from our internal risk limits at an early stage.

External Perspectives

Various external stakeholders, among them regulators, rating agencies, investors and accounting bodies, place emphasis on the importance of sound risk management in the insurance/reinsurance industry. We monitor developments in the external environment and evolve our risk management practices accordingly.

Risk Governance and Risk Management Organization

The key elements of our governance framework, as it relates specifically to risk management, are described below.

Board of Directors' Level

The Risk Committee of the Board ("Risk Committee") assists the Board of Directors in overseeing the integrity and effectiveness of our ERM framework and ensuring that our risk assumption and risk mitigation activities are consistent with that framework. The Risk Committee reviews, approves and monitors our overall risk strategy, risk appetite and key risk limits and receives regular reports from the Group Risk Management function ("Group Risk") to ensure any significant risk issues are being addressed by management. The Risk Committee further reviews, with management and Internal Audit, the Group's general policies and procedures and satisfies itself that effective systems of risk management and controls are established and maintained. Among its other responsibilities, the Risk Committee also reviews and approves our annual Own Risk and Solvency Assessment ("ORSA") report. The Risk Committee assesses the independence and objectivity of our Group Risk function, approves its terms of reference and reviews its ongoing activities.

Following a recommendation by the Chief Executive Officer, the Risk Committee also conducts a review and provides a recommendation to the Board of Directors regarding the appointment and/or removal of the Chief Risk Officer. The Risk Committee meets with the Chief Risk Officer in separate executive sessions on a regular basis.

The Finance Committee of our Board oversees the Group's investment of funds and adequacy of financing facilities. This includes approval of the Group's strategic asset allocation plan. The Audit Committee of our Board, which is supported by our internal audit function, is responsible for overseeing internal controls and compliance procedures, and also reviews with management and the Chairman of the Risk Committee, the Group's guidelines and policies regarding risk assessment and risk management.

Group Executive Level

Our management Executive Committee formulates our business objectives and risk strategy within the overall risk appetite set by our Board. It allocates capital resources and sets limits across the Group, with the objective of balancing return and risk. While the management Executive Committee is responsible overall for risk management, it has delegated some authority to the executive level Risk Management Committee ("RMC") consisting of the Chief Executive Officer, Chief Financial Officer, Chief Strategy Officer, Chief Underwriting Officer, Chief Executive Officers of each segment, Chief Risk Officer, Chief Actuary and General Counsel.

The RMC is responsible for overseeing the integrity and effectiveness of the Group's ERM framework and ensuring that the Group's risk assumption and risk mitigation activities are consistent with that framework, including a review of the annual business plan relative to our risk limits. In addition to the RMC, there is an established framework of separate yet complementary management committees and subcommittees, focusing on particular aspects of ERM including the following:

Management Committees

- The Business Council oversees underwriting strategy and performance, establishes return targets, and manages risk/exposure constraints across each line of business, in line with the Company's strategic goals.
- The Product Boards for each major line of business aim to develop a coherent strategy for portfolio management, set underwriting guidelines and risk appetite, and leverage expertise across the multiple geographies that we operate in. The boards also oversee exposure management frameworks and view of risk.
- The Investment & Finance Committee oversees the Group's investment activities by, among other things, monitoring market risks, the performance of our investment managers and the Group's asset-liability management, liquidity positions and investment policies and guidelines. The Investment & Finance Committee also prepares the Group's strategic asset allocation and presents it to the Finance Committee of the Board for approval.
- The Capital Management Committee oversees the integrity and effectiveness of the Company's Capital Management Policy, including the capital management policies of the Company's legal entities and branches, and oversees the availability of capital within the Group.
- The Group Reserve Committee ensures appropriate oversight and challenge of the Group and Segment Reserves, led by the Group Chief Reserving Actuary.

RMC Sub-Committees

- The Reinsurance Security Committee ("RSC") sets out the financial security requirements of our reinsurance counterparties and approves our counterparties, as needed.
- The Internal Model Committee oversees the Group's Internal Model framework, including the key model assumptions, methodology and validation framework.
- The Operational Risk Committee oversees the Group's Operational Risk framework for the identification, management, mitigation and measurement of operational risk and facilitates the embedding of effective operational risk management practices throughout the Group.
- The Emerging Risks Working Group oversees the processes for identifying, assessing and monitoring current and potential emerging risks.

Group Risk Management Organization

As a general principle, management in each of our business units is responsible in the first instance for both the risks and returns of its decisions. Management is the 'owner' of risk management processes and is responsible for managing our business within defined risk limits.

Our Chief Risk Officer reports to the Chief Financial Officer and the Chairman of the Board Risk Committee, leads our independent Group Risk function, and is responsible for oversight and implementation of the Group's ERM framework as well as providing guidance and support for risk management practices. Group Risk is responsible for developing methods and processes for identifying, measuring, managing and reporting risk. This forms the basis for informing the Risk Committee and RMC of the Group's risk profile. Group Risk develops our risk management framework and oversees the adherence to

this framework at the Group and operating entity level. Our Chief Risk Officer regularly reports risk matters to the Chief Financial Officer, management Executive Committee, RMC and the Risk Committee.

Internal Audit, an independent, objective function, reports to the Audit Committee of the Board on the effectiveness of our risk management framework. This includes assurance that key business risks have been adequately identified and managed appropriately and that our system of internal control is operating effectively. Internal Audit also provides independent assurance around the validation of our internal capital model and coordinates risk-based audits, compliance reviews, and other specific initiatives to evaluate and address risk within targeted areas of our business.

Our risk governance structure is further complemented by our legal department which seeks to mitigate legal and regulatory compliance risks with support from other departments. This includes ensuring that significant developments in law and regulation are observed and that we react appropriately to impending legislative and regulatory changes and applicable court rulings.

Risk Landscape

Our risk landscape comprises strategic, insurance, credit, market, operational, liquidity and other risks that arise as a result of doing business. We provide definitions of these risk categories in the following sections as well as our related risk management. Across these risk categories, we identify and evaluate emerging threats and opportunities through a framework that includes the assessment of potential surprise factors that could affect known loss potentials.

Our risk landscape is reviewed on a regular basis to ensure that it remains up-to date based on the evolving risk profile of the Company. In addition, we undertake ongoing risk assessments across all enterprise risks, the output of which is captured in our risk register which is reviewed and reported through our governance structure.

Strategic Risk

Strategic risks are risks that affect or are created by an organization's business strategy and strategic objectives. Our review of strategic risk is a broad one that evaluates not only internal and external challenges that might cause our chosen strategy to fail but also evaluates major risks that could affect our long-term position and performance. We believe it is imperative that, when we develop a strategy, we think about the business risks associated with that strategy and that we think about the business risks that are minimized by following a particular strategy. We also view strategic risk not only as the negative impact of risk but also the sub-optimization of gain. Fundamentally, we believe that if we figure out both the value protection and the value creation part of risk we are set up for success.

A strategy function was formed as part of our enterprise-wide transformation to ensure that the prioritization and coordination of enterprise-wide resources is done efficiently and effectively to drive targeted strategic outcomes. On no less than a quarterly basis, the Executive Committee of the Company meets and receives holistic information about execution against strategy and makes decisions to adjust and/or advance strategy. In addition, strategies employed throughout our business units, in support of the broader enterprise strategy, are reviewed in the context of a broader governance structure, by the Business Council and business unit leadership and are ultimately approved by the Board of Directors.

Insurance Risk

Insurance risk is the inherent uncertainty as to the occurrence, amount and timing of insurance and reinsurance liabilities transferred to us through the underwriting process.

Since our inception in 2001, we have expanded our international presence, with underwriting offices in Bermuda, the U.S., Europe, Singapore, Canada and the Middle East. Our disciplined underwriting approach coupled with a group-wide peer review process has enabled us to manage this growth in a controlled and consistent manner.

A key component of the Group's underwriting risk governance is our peer review processes which allow for a collaborative review of risk and pricing and ensures that underwriting is within established protocols and guidelines. Underwriting guidelines are in place to provide a framework for consistent pricing and risk analysis and ensuring alignment to the Group's risk appetite. Limits are set on underwriting capacity, and cascade authority to individuals based on their specific roles and expertise.

We also have significant audit coverage across our business units, including Management Initiated Audits ("MIAs"). MIAs are audits of underwriting and claims files performed by teams independent of those who originated the transactions, the

purpose of which is to test the robustness of our underwriting, claims and operating processes and to recognize any early indicators of future trends in our operational risk environment.

Reinsurance Purchasing

Another key component of our mitigation of insurance risk is the purchase of reinsurance on both a treaty (covering a portfolio of risks) and facultative (single risk) basis, on both our short and long tail lines of business.

For treaty reinsurance, we purchase both proportional and non-proportional cover. Under proportional reinsurance, we cede an agreed proportion of premiums and losses and loss expenses on the policies we underwrite. We primarily use proportional reinsurance on our liability, professional lines, and cyber portfolios, as well as on select property portfolios, whereby we protect against higher loss frequency rather than specific events. We also purchase proportional reinsurance on our assumed property catastrophe reinsurance portfolio, casualty, and credit and bond portfolios, which includes cessions to our Strategic Capital Partners. We also use non-proportional reinsurance, whereby losses up to a certain amount (i.e. our retention) are borne by us. By using non-proportional reinsurance, we can limit our liability with a retention, which reflects our willingness and ability to bear risk, and therefore in line with our risk appetite. We primarily purchase the following forms of non-proportional reinsurance:

- Excess of loss per risk – the reinsurer indemnifies us for loss amounts of all individual policies effected, defined in the treaty terms and conditions. Per risk treaties are an effective means of risk mitigation against large single losses (e.g. a large fire claim). This includes the Northshore Re catastrophe bond program, which provides a combined \$715 million of limit across the Group. Refer to Item 7 '*Management's Discussion and Analysis of Financial Condition and Results of Operations*' – *Underwriting Results – Consolidated – Underwriting Expenses*' for further details.
- Catastrophe excess of loss – provides aggregate loss cover for our insurance portfolio against the accumulation of losses incurred from a single event (e.g. windstorm).

We have a centralized risk funding department, which coordinates external treaty reinsurance purchasing across the Group and is overseen by our Reinsurance Purchasing Group ("RPG"). The RPG, which includes among others, our Chief Executive Officer, Chief Financial Officer, Chief Risk Officer and business unit leadership, approves each treaty placement, and aims to ensure that appropriate diversification exists within our RSC approved counterparty panels.

Facultative reinsurance is case by case risk transfer, which we may also use to complement treaty reinsurance by covering additional risks above and beyond what is already covered in treaties. Facultative reinsurance is monitored by the risk funding department.

Natural Peril Catastrophe Risk

Natural catastrophes such as hurricanes and windstorms, earthquakes, storms, tornados and floods represent a challenge for risk management due to their accumulation potential and occurrence volatility. In managing natural catastrophe risk, our internal risk limit framework aims to limit both the loss of capital due to a single event and the loss of capital that would occur from multiple (but perhaps smaller events) in any year. Within this framework, we have an established risk limit for single event, single zone probable maximum loss ("PML") within defined zones and at various return periods. For example, at the 1-in-250-year return period, we are not willing to expose more than 20% of our prior quarter-end common-equity from a single event within a single zone.

The table below shows our mean PML estimates for certain defined single zones which correspond to peak industry catastrophe exposures at January 1, 2020 and 2019:

At January 1, (in millions of U.S. dollars)		2020			2019		
		50 Year Return Period	100 Year Return Period	250 Year Return Period	50 Year Return Period	100 Year Return Period	250 Year Return Period
Single zone/single event	Perils						
Southeast	U.S. Hurricane	\$ 262	\$ 310	\$ 428	\$ 383	\$ 441	\$ 620
Northeast	U.S. Hurricane	53	145	236	52	156	290
Mid-Atlantic	U.S. Hurricane	120	214	349	133	315	449
Gulf of Mexico	U.S. Hurricane	202	249	283	258	316	394
California	Earthquake	176	249	292	253	369	468
Europe	Windstorm	195	238	316	231	301	376
Japan	Earthquake	138	247	414	147	227	359
Japan	Windstorm	114	195	256	60	109	158

The return period refers to the frequency with which losses of a given amount or greater are expected to occur. A zone is a geographic area in which the insurance risks are considered to be correlated to a single catastrophic event. Estimated losses from a modeled event are grouped into a single zone, as shown above, based on where the majority of the total estimated industry loss is expected to occur. In managing zonal concentrations, we aim to ensure that the geography of single events is suitably captured, but distinct enough that they track specific types of events. For example, our definition of Southeast wind encompasses five states, including Florida, while our definition of Gulf Wind encompasses four states, including Texas.

Our PMLs take into account the fact that an event may trigger claims in a number of lines of business. For instance, our U.S. hurricane modeling includes the estimated pre-tax impact to our financial results arising from our catastrophe, property, engineering, energy, marine and aviation lines of business. Our PMLs include assumptions regarding the location, size and magnitude of an event, the frequency of events, the construction type and a property's susceptibility to damage, and the cost of rebuilding the property. Loss estimates for non-U.S. zones will be subject to foreign exchange rates, although we may mitigate this currency variability from a book value perspective.

As indicated in the table above, our modeled single occurrence 1-in-100-year return period PML for a Southeast U.S. hurricane, net of reinsurance, is approximately \$0.3 billion. According to our modeling, there is a one percent chance that on an annual basis, losses incurred from a Southeast hurricane event could be in excess of \$0.3 billion. Conversely, there is a 99% chance that on an annual basis, the loss from a Southeast hurricane will fall below \$0.3 billion.

We have developed our PML estimates using multiple commercially available vendor models, including AIR Worldwide ("AIR") and Risk Management Solutions ("RMS"), which we also use for pricing catastrophe risk. These models cover the major peril regions where we face potential exposure. We combine the outputs of catastrophe models with our estimate of non-modeled perils and other factors which we believe, from our experience, provides us with a more complete view of natural peril catastrophe risk.

Our PML estimates are based on assumptions that are inherently subject to significant uncertainties and contingencies. These uncertainties and contingencies can affect actual losses and could cause actual losses to differ materially from those expressed above. We aim to reduce the potential for model error in a number of ways, the most important of which is by ensuring that management's judgment supplements the model outputs. We also perform ongoing model validation both within our business units and at a group level including through our catastrophe model validation unit. These validation procedures include sensitivity testing of models to understand their key variables and, where possible, back testing the model outputs to actual results.

Estimated net losses from peak zone catastrophes may change from period to period as a result of several factors, which include but are not limited to, updates to vendor catastrophe models, changes in our own modeling, changes in our underwriting portfolios, changes to our reinsurance purchasing strategy and changes in foreign exchange rates. Several of the aforementioned factors, including our ongoing actions to reduce underwriting volatility, drove the changes to our natural catastrophe PMLs during 2019.

Man-made Catastrophe Risk

In line with our management of natural peril catastrophe exposures, we also take a similarly focused and analytical approach to our management of man-made catastrophes. Man-made catastrophes, which include such risks as train collisions, airplane crashes or terrorism, are harder to model in terms of assumptions regarding intensity and frequency. For these risks we couple the vendor models (where available) with our bespoke modeling and underwriting judgment and expertise. This allows us to take advantage of business opportunities relating to man-made catastrophe exposures particularly where we can measure and limit the risk sufficiently as well as obtain risk-adequate pricing.

As an example of our approach, our assessment of terrorism risk is based on a mixture of qualitative and quantitative data (e.g. for estimating property damage, business interruption, mortality and morbidity subsequent to an attack of a predefined magnitude), which we use to control, limit and manage our aggregate terrorism exposure. We use commercially available vendor modeling and bespoke modeling tools to measure accumulations around potential terrorism accumulation zones on a deterministic and probabilistic basis. We supplement the results of our modeling with underwriting judgment.

Reserving Risk

The estimation of reserves is subject to uncertainty due to the fact that the settlement of claims that have arisen before the balance sheet date is dependent on future events and developments. Unforeseen loss trends resulting from court rulings, changes in the law, medical and long-term care costs, and economic factors such as inflation can have an impact on the ultimate cost to settle our claim liabilities.

We calculate the reserves for losses and loss expenses ("loss reserves") in accordance with actuarial practice based on substantiated assumptions, methods and assessments. The assumptions are regularly reviewed and updated, and the application of our Group reserving policy and standards of practice ensures a reliable and consistent procedure. Our loss reserving process demands data quality and reliability and requires a quantitative and qualitative review of both our overall reserves and individual large claims. Within a structured control framework, claims information is communicated on a regular basis throughout our organization, including to senior management, to provide an increased awareness regarding the losses that have taken place throughout the insurance markets. The detailed and analytical reserving approach that follows is designed to absorb and understand the latest information on our reported and unreported claims, to recognize the resultant exposure as quickly as possible, and to make appropriate and realistic provisions in our financial statements. We have well established processes for determining carried reserves, which we ensure are applied consistently over time.

Reserving for long-tail lines of business represents a significant component of reserving risk. When loss trends prove to be higher than those underlying our reserving assumptions, the risk is greater because of a stacking-up effect: we carry reserves to cover claims arising from several years of underwriting activity and these reserves are likely to be adversely affected by unfavorable loss trends. We manage and mitigate reserving risk on long-tail business in a variety of ways. First, the long-tail business we write is part of a well-balanced and diversified global portfolio of business. In 2019, long-tail net premiums written (namely liability and motor business) represented 22% of total net premiums written and long-tail net loss reserves represented 35% of total net loss reserves. We also purchase reinsurance on liability business to manage our net positions. Secondly, we follow a disciplined underwriting process that utilizes available information, including industry trends.

Another significant component of reserving risk relates to the estimation of losses in the aftermath of a major catastrophe event. Refer to Item 7 *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Estimates – Reserves for Losses and Loss Expenses'* for further details.

Claims Handling Risk

In accepting risk, we are committing to the payment of claims and therefore these risks must be understood and controlled. We have claims teams located throughout our main business units. Our claim teams include a diverse group of experienced professionals, including claims adjusters and attorneys. We also use approved external service providers, such as independent adjusters and appraisers, surveyors, accountants, investigators and specialist attorneys, as appropriate.

We maintain claims handling guidelines and claims reporting control and escalation procedures in all our claims units. Large claims matters are reviewed during weekly claims meetings. The minutes from each meeting are circulated to our underwriters, senior management and others involved in the reserving process. To maintain communication between underwriting and claims teams, claims personnel regularly report at underwriting meetings and frequently attend client meetings.

We foster a strong culture of review among our claims teams. This includes MIAs, whereby senior claims handlers audit a sample of claim files. The process is designed to ensure consistency between the claims units and to develop Group-wide best practices.

When we receive notice of a claim, regardless of size, it is recorded within our underwriting and claims systems. To assist with the reporting of significant claims, we have also developed a standard format and procedure to produce "flash reports" for significant events and potential losses, regardless of whether we have exposure. Our process for flash reporting allows a direct notification to be communicated to underwriters and senior management worldwide. Similarly, for natural peril catastrophes, we have developed a catastrophe database, along with catastrophe coding in certain systems, that allows for the gathering, blending and reporting of loss information as it develops from early modeled results to fully adjusted and paid losses.

Credit Risk

Credit risk represents the risk of incurring financial loss due to the diminished creditworthiness (eroding credit rating and, ultimately, default) of our third-party counterparties. We distinguish between various forms of credit exposure; the risk of issuer default from instruments in which we invest or trade, such as corporate bonds; counterparty exposure in a direct contractual relationship, such as reinsurance; the credit risk related to our receivables, including those from brokers and other intermediaries; and the risk we assume through our insurance contracts, such as our credit and political risk and trade credit and bond lines of business.

Credit Risk Aggregation

We monitor and manage the aggregation of credit risk on a Group-wide basis allowing us to consider exposure management strategies for individual companies, countries, regions, sectors and any other relevant inter-dependencies. Our credit exposures are aggregated based on the origin of risk. Credit risk aggregation is managed through minimizing overlaps in underwriting, financing and investing activities. As part of our credit aggregation framework, we assign aggregate credit limits by country and for any individual counterparty. These limits are based and adjusted on a variety of factors including the prevailing economic environment and the nature of the underlying credit exposures.

Our credit aggregation measurement and reporting process is facilitated by our credit risk exposure database, which contains relevant information on counterparty details and credit risk exposures. The database is accessible by management throughout the Group, thus providing transparency to allow for the implementation of active exposure management strategies. We also license third-party tools to provide credit risk assessments. We monitor all our credit aggregations and, where appropriate, adjust our internal risk limits and/or have taken specific actions to reduce our risk exposures.

Credit Risk Relating to Investing Activities

Within our fixed maturity investment portfolio, which represents approximately \$12 billion or 49% of our total assets, we are exposed to potential losses arising from the diminished creditworthiness of issuers of bonds as well as third-party counterparties such as custodians. We limit such credit risk through diversification, issuer exposure limits graded by ratings and, with respect to custodians, through contractual and other legal remedies. Excluding U.S. Treasury and Agency securities, we limit our concentration of credit risk to any single corporate issuer to 2% or less of our investment grade fixed maturities portfolio for securities rated A- or above and 1% or less of our investment grade fixed maturities portfolio for securities rated below A-.

We also have credit risk relating to our cash and cash equivalents. In order to mitigate concentration and operational risks related to cash and cash equivalents, we limit the maximum amount of cash that can be deposited with a single counterparty and additionally limit acceptable counterparties based on current rating, outlook and other relevant factors.

Credit Risk Relating to Reinsurance Recoverable Assets

Within our reinsurance purchasing activities, we are exposed to the credit risk of a reinsurer failing to meet its obligations under our reinsurance contracts. To help mitigate this, all of our reinsurance purchasing is subject to financial security requirements specified by our RSC. The RSC maintains a list of approved reinsurers, reviews credit risk assessments for potential new reinsurers, regularly monitors approved reinsurers with consideration for events which may have a material impact on their creditworthiness, recommends counterparty limits for different types of ceded business and monitors concentrations of credit risk. This assessment considers a wide range of individual attributes, including a review of the counterparty's financial strength, industry position and other qualitative factors. Generally, the RSC requires reinsurers who do not meet specified requirements to provide collateral.

We monitor counterparty credit quality and exposures, with special monitoring of those cases that merit close attention.

Credit Risk Relating to Receivables

Our largest credit risk exposure to receivables is from brokers and other intermediaries; the risk arises where they collect premiums from customers to be paid to us or we pay claims to them for onward settlement to customers on our behalf. We have policies and standards in place to manage and monitor credit risk from intermediaries with a focus on day-to-day monitoring of the largest positions.

Credit Risk Relating to our Underwriting Portfolio

In the insurance segment, we provide credit insurance primarily for lenders (financial institutions) seeking to mitigate the risk of non-payment from their borrowers. This product has complemented our more traditional political risk insurance business. For the credit insurance contracts, it is necessary for the buyer of the insurance, most often a bank, to hold an insured asset, most often an underlying loan, in order to claim compensation under the insurance contract. The vast majority of the credit insurance provided is for single-name illiquid risks, primarily in the form of senior secured bank loans that can be individually analyzed and underwritten. As part of this underwriting process, an evaluation of creditworthiness and reputation of the obligor is critical and forms the cornerstone of the underwriting process. We generally require that our clients retain a share of each transaction that we insure. A key element to our underwriting analysis is the assessment of recovery in the event of default and, accordingly, the strength of the collateral and the enforceability of rights to the collateral are paramount. We avoid insurance for structured finance products defined by pools of risks and insurance for synthetic products that would expose us to mark-to-market losses. We also seek to avoid terms in our credit insurance contracts which introduce liquidity risk, most notably, in the form of a collateralization requirement upon a ratings downgrade. We also provide protection against sovereign default or sovereign actions that result in impairment of cross-border investments for banks and corporations. Our contracts generally include conditions precedent to our liability relating to the enforceability of the insured transaction and restricting amendments to the transaction documentation, obligations on the insured to prevent and minimize losses, subrogation rights (including rights to have the insured asset transferred to us) and waiting periods. Under most of our policies, a loss payment is made in the event the debtor failed to pay our client when payment is due subject to a waiting period of up to 180 days.

In the reinsurance segment, we provide reinsurance of credit and bond insurers exposed to the risks of financial loss arising from non-payment of trade receivables covered by a policy (credit insurance) or non-performance (bonding). Our credit insurance exposures are concentrated primarily within developed economies, while our surety bond exposures are concentrated primarily within Latin American and developed economies. We also provide coverage to the mortgage industry through insurance and reinsurance of mortgage insurance companies and U.S. government sponsored entity credit risk sharing transactions. We focus on credit risk transfer from Federal Home Loan Mortgage Corporation and Federal National Mortgage Association, in the single-family, fixed rate, conforming mortgage space. We provide this cover on a proportional and non-proportional basis globally through AXIS Re U.S., AXIS Specialty Bermuda and AXIS Managing Agency Ltd. Our exposure to mortgage risk is monitored and managed through robust underwriting within defined parameters for mortgage credit quality and concentration, continuous monitoring of the housing market, as well as limits on our PML resulting from a severe economic downturn in the housing market.

Market Risk

Market risk is the risk that our financial instruments may be negatively impacted by movements in financial market prices or rates such as equity prices, interest rates, credit spreads and foreign exchange rates. Fluctuations in market rates primarily affect our investment portfolio.

Through asset and liability management, we aim to ensure that market risks influence the economic value of our investments and that of our loss reserves and other liabilities in the same way, thus mitigating the effect of market fluctuations. For example, we reflect important features of our liabilities, such as maturity patterns and currency structures, on the assets side of the balance sheet by acquiring investments with similar characteristics.

We supplement our asset-liability management with various internal policies and limits. As part of our strategic asset allocation process, different asset strategies are simulated and stressed in order to evaluate the 'optimal' portfolio (given return objectives and risk constraints). In our investment department, we centralize the management of asset classes to control aggregation of risk and provide a consistent approach to constructing portfolios as well as the selection process of external asset managers. We have limits on the concentration of investments by single issuers and certain asset classes, and we limit the level of illiquid investments (refer to '*Liquidity Risk*' below). Further, our investment guidelines do not permit the use of leverage in any of our fixed maturity portfolios.

We stress test our investment portfolios using historical and hypothetical scenarios to analyze the impact of unusual market conditions and to ensure potential investment losses remain within our risk appetite. At an annual aggregated level, we manage the total risk exposure to our investment portfolio so that the 'total return' investment loss in any one year is unlikely to exceed a defined percentage of our common equity at a defined return period.

We mitigate foreign currency risk by seeking to match our estimated insurance and reinsurance liabilities payable in foreign currencies with assets, including cash and investments that are also denominated in such currencies. Where necessary, we use derivative financial instruments for economic hedging purposes. For example, in certain circumstances, we use forward contracts and currency options, to economically hedge portions of our un-matched foreign currency exposures.

Operational Risk

Operational risk represents the risk of financial loss as a result of inadequate processes, system failures, human error or external events.

Group Risk is responsible for coordinating and overseeing a Group-wide framework for operational risk management. As part of this, we maintain an operational loss-event database which helps us better monitor and analyze potential operational risk, identify any trends, and, where necessary, put in place improvement actions to avoid occurrence or recurrence of operational loss events.

We manage transaction type operational risks through the application of process controls throughout our business. In testing these controls, we supplement the work of our internal audit team, with regular underwriting and claim MIAs (as discussed above).

We have specific processes and systems in place to focus on high priority operational matters, such as information security, managing business continuity, and third-party vendor risk:

- Major failures and disasters which could cause a severe disruption to working environments, facilities and personnel, represent a significant operational risk to us. Our Business Continuity Management framework strives to protect critical business functions from these effects to enable us to carry out our core tasks in time and at the quality required. During 2019, we continued to review our Business Continuity Planning procedures through cyclical planned tests.
- We have developed a number of Information Technology ("IT") platforms, applications and security controls to support our business activities worldwide. Dedicated security standards are in place for our IT systems to ensure the proper use, availability and protection of our information assets.
- Our use of third-party vendors exposes us to a number of increased operational risks, including the risk of security breaches, fraud, non-compliance with laws and regulations or internal guidelines and inadequate service. We manage material third-party vendor risk, by, among other things, performing a thorough risk assessment on potential large vendors, reviewing a vendor's financial stability, ability to provide ongoing service and business continuity planning.

Liquidity Risk

Liquidity risk is the risk that we may not have sufficient financial resources to meet our obligations when they fall due or would have to incur excessive costs to do so. As an insurer and reinsurer, our core business generates liquidity primarily through premiums, investment income and the maturity/sale of investments. Our exposure to liquidity risk stems mainly from the need to cover potential extreme loss events and regulatory constraints that limit the flow of funds within the Group. To manage these risks, we have a range of liquidity policies and measures in place:

- We maintain cash and cash equivalents and high quality, liquid investment portfolios to meet expected outflows, as well as those that could result from a range of potential stress events. We place internal limits on the maximum percentage of cash and investments which may be in an illiquid form as well as on the minimum percentage of our asset portfolio which may be invested in unrestricted cash and liquid investment grade fixed income securities.
- We maintain committed borrowing facilities, as well as access to diverse funding sources to cover contingencies. Funding sources include asset sales, external debt issuances and lines of credit.

Capital Management

Our capital management strategy is to maximize long-term shareholder value by, among other things, optimizing capital allocation and minimizing our cost of capital. We manage our capital in accordance with our Target Capital Range ("TCR") concept. The TCR defines the preferred level of capital needed to absorb shock losses and still satisfy our minimum solvency targets in relation to key capital benchmarks including our "own view" of risk from our internal capital model and regulatory and rating agency capital requirements:

- Internal risk capital - We use our internal capital model to assess the capital consumption of our business, measuring and monitoring the potential aggregation of risk at extreme return periods.
- Regulatory capital requirements - In each country in which we operate, the local regulator specifies the minimum amount and type of capital that each of the regulated entities must hold in support of their liabilities and business plans. We target to hold, in addition to the minimum capital required to comply with the solvency requirements, an adequate buffer to ensure that each of our operating entities meets its local capital requirements. Refer to Item 8, Note 21 to the Consolidated Financial Statements, *'Statutory Financial Information'* for further details.
- Rating agency capital requirements - Rating agencies apply their own models to evaluate the relationship between the required risk capital of a company and its available capital resources. The assessment of capital adequacy is usually an integral part of the rating agency process. Meeting rating agency capital requirements and maintaining strong credit ratings are strategic business objectives of the Company. Refer to Item 7 *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources'* for further details.

The TCR identifies the point at which management needs to consider raising capital, amending our business plan or executing capital management activities well before capital approaches the minimum requirements ("early warning indicator"). This allows us to take appropriate measures to ensure the continued strength and appropriateness of our capital and solvency positions, and also enables us to take advantage of opportunities as they arise. Such measures are performed as and when required and include traditional capital management tools (e.g. dividends, share buy-backs, issuance of shares or debt) or through changes to our risk exposure (e.g. recalibration of our investment portfolio or changes to our reinsurance purchasing strategy).

The TCR also considers an amount of capital beyond which capital could be considered "excess". Where we do not find sufficiently attractive opportunities and returns for our excess capital, we may return capital back to our shareholders through share repurchases and/or dividends. In doing so, we seek to maintain an appropriate balance between higher returns for our shareholders and the security provided by a sound capital position.

REGULATION

General

The business of insurance and reinsurance is regulated in most countries, although the degree and type of regulation varies significantly from one jurisdiction to another. In addition, some jurisdictions are currently evaluating changes to their regulation and we are monitoring these potential developments. To the extent we are aware of impending changes in regulation, designated project teams prepare us to comply on a timely basis with such anticipated changes. The following describes the current material regulations under which the Company operates.

Bermuda

Our Bermuda insurance operating subsidiary, AXIS Specialty Bermuda, is a Class 4 general business insurer subject to the Insurance Act 1978 of Bermuda and related regulations, as amended (the "Insurance Act"). The Insurance Act provides that no person may carry on any insurance or reinsurance business in or from within Bermuda unless registered as an insurer by the Bermuda Monetary Authority (the "BMA") under the Insurance Act. The Insurance Act imposes upon Bermuda insurance companies solvency and liquidity standards and auditing and reporting requirements, and grants the BMA powers to supervise, investigate, require information and demand the production of documents and intervene in the affairs of insurance companies. Significant requirements pertaining to Class 4 insurers include the appointment of an independent auditor, the appointment of a loss reserve specialist, the appointment of a principal representative in Bermuda, the filing of annual Statutory Financial Returns, the filing of annual GAAP financial statements, the filing of an annual capital and solvency return, compliance with minimum and enhanced capital requirements, compliance with certain restrictions on reductions of capital and the payment of dividends and distributions, compliance with group solvency and supervision rules, if applicable, and compliance with the Insurance Code of Conduct. On July 30, 2018, the Insurance Amendment (No. 2) Act 2018 amended the Insurance Act to provide for the prior payment of policyholders' liabilities ahead of general unsecured creditors in the event of the liquidation or winding up of an insurer. Effective January 1, 2019, this amendment applies to general business insurers and provides among other things that, subject to certain statutorily preferred debts, the insurance debts of an insurer must be paid in priority to all other unsecured debts of the insurer. Insurance debt is defined as a debt to which an insurer is or may become liable pursuant to an insurance contract excluding debts owed to an insurer under an insurance contract where the insurer is the person insured.

Effective January 1, 2016, the BMA was granted full "equivalence" under Solvency II (as more fully described below under "Ireland") for Bermuda's commercial insurance sector, including Class 4 insurers.

The BMA acts as group supervisor of AXIS Capital and has designated AXIS Specialty Bermuda as the 'designated insurer' of the Group. In accordance with the group supervision and insurance group solvency rules, AXIS Capital is required to prepare and submit annual audited group GAAP financial statements, an annual group Statutory Financial Return, an annual group Capital and Solvency Return and quarterly group unaudited GAAP financial statements, and to appoint both a group actuary and a group auditor. AXIS Capital also files an annual capital and solvency return and must ensure compliance with minimum and enhanced capital requirements.

AXIS Ventures Reinsurance Limited is registered as a Class 3A insurer subject to the Insurance Act and is a registered segregated accounts company under the Bermuda Segregated Accounts Companies Act 2000, as amended. As with AXIS Specialty Bermuda, AXIS Ventures Reinsurance Limited is regulated by the BMA and is subject to solvency and liquidity standards and auditing and reporting requirements, including compliance with the Insurance Code of Conduct.

AXIS Ventures and AXIS Reinsurance Managers are regulated by the BMA as insurance managers. Insurance managers are subject to the Insurance Act which provides that no person may carry on business as an insurance manager unless registered for the purpose by the BMA under the Insurance Act. Insurance managers are required to comply with the Insurance Manager Code of Conduct.

AXIS Capital, AXIS Specialty Bermuda, AXIS Specialty Holdings Bermuda Limited, AXIS Specialty Investments Limited, AXIS Ventures, AXIS Ventures Reinsurance Limited, AXIS Specialty Investments II Limited and AXIS Reinsurance Managers must also comply with provisions of the Bermuda Companies Act 1981, as amended (the "Companies Act"), regulating the payment of dividends and distributions. A Bermuda company may not declare or pay a dividend or make a distribution out of contributed surplus if there are reasonable grounds for believing that: (a) the company is, or would after the payment be, unable to pay its liabilities as they become due; or (b) the realizable value of the company's assets would

thereby be less than its liabilities. During 2019, Novae Bermuda Underwriting Limited merged with and into Novae Bermuda Holdings Limited, the surviving company. Each of Novae Bermuda Holdings Limited, AXIS Specialty Markets Limited and Glen Rock Holdings Ltd. were dissolved during 2019 and were subject to the foregoing provisions prior to dissolution.

The Singapore branch of AXIS Specialty Bermuda, AXIS Specialty Limited (Singapore Branch), established in 2008, is regulated by the Monetary Authority of Singapore (the "MAS") pursuant to The Insurance Act of Singapore which imposes significant regulations relating to capital adequacy, risk management, governance, audit and actuarial requirements. AXIS Specialty Limited (Singapore Branch) is registered by the Accounting and Corporate Regulatory Authority ("ACRA") as a foreign company in Singapore and is also regulated by ACRA pursuant to the Singapore Companies Act. Prior to establishing its Singapore branch, AXIS Specialty Bermuda had maintained a representative office in Singapore since 2004.

AXIS Specialty Bermuda has reinsurance permissions in China and the Netherlands. AXIS Specialty Limited (Singapore Branch) has separate reinsurance permission in China.

AXIS Re SE may write reinsurance in Bermuda under Solvency II equivalence between Bermuda and the E.U.

AXIS Managing Agency Ltd. may write general insurance and reinsurance in Bermuda using Lloyd's licenses (refer to "U.K. and Lloyd's of London" below).

United States

U.S. Insurance Holding Company Regulation of AXIS Capital's Insurance Subsidiaries

As members of an insurance holding company system, each of AXIS Insurance Co., AXIS Re U.S., AXIS Specialty U.S. and AXIS Surplus, collectively AXIS Capital's U.S. insurance subsidiaries ("U.S. Insurance Subsidiaries") are subject to the insurance holding company system laws and regulations of the states in which they do business. These laws generally require each of the U.S. Insurance Subsidiaries to register with its respective domestic state insurance department and to furnish financial and other information which may materially affect the operations, management or financial condition within the holding company system. All transactions within a holding company system that involve an insurance company must be fair and equitable. Notice to the insurance departments is required prior to the consummation of transactions affecting the ownership or control of an insurer and of certain material transactions between an insurer and an entity in its holding company system, and certain transactions may not be consummated without the department's prior approval.

State Insurance Regulation

AXIS Re U.S. is licensed to transact insurance and reinsurance throughout the U.S. and in Puerto Rico. AXIS Re U.S. is also authorized to transact insurance and reinsurance throughout Canada through its Canadian branch and has reinsurance permissions in Argentina, Brazil, China, Columbia, Ecuador, Guam, Guatemala, Honduras, Panama, India and Mexico. AXIS Insurance Co. is licensed to transact insurance and reinsurance throughout the U.S. AXIS Specialty U.S. is licensed to transact insurance and reinsurance throughout the U.S., except California, Iowa, Maine, New Mexico, New York and Wyoming. AXIS Surplus is eligible to write insurance on a surplus lines basis throughout the U.S., Puerto Rico and the U.S. Virgin Islands.

Our U.S. Insurance Subsidiaries also are subject to regulation and supervision by their respective states of domicile and by other jurisdictions in which they do business. The regulations generally are derived from statutes that delegate regulatory and supervisory powers to an insurance official. The regulatory framework varies from state to state, but generally relates to approval of policy forms and rates, the standards of solvency that must be met and maintained, including risk-based capital standards, material transactions between an insurer and its affiliates, the licensing of insurers, agents and brokers, restrictions on insurance policy terminations, the nature of and limitations on the amount of certain investments, limitations on the net amount of insurance of a single risk compared to the insurer's surplus, deposits of securities for the benefit of policyholders, methods of accounting, periodic examinations of the financial condition and market conduct of insurance companies, the form and content of reports of financial condition required to be filed, reserves for unearned premiums, losses, expenses and other obligations.

Our U.S. Insurance Subsidiaries are required to file detailed quarterly statutory financial statements with state insurance regulators in each of the states in which they conduct business. In addition, the U.S. Insurance Subsidiaries' operations and accounts are subject to financial condition and market conduct examination at regular intervals by state regulators.

Regulators and rating agencies use statutory surplus as a measure to assess our U.S. Insurance Subsidiaries' ability to support business operations and pay dividends. Our U.S. Insurance Subsidiaries are subject to various state statutory and regulatory

restrictions that limit the amount of dividends that may be paid from earned surplus without prior approval from regulatory authorities. These restrictions differ by state, but generally are based on calculations using statutory surplus, statutory net income and investment income. In addition, many state regulators use the National Association of Insurance Commissioners promulgated risk-based capital requirements as a means of identifying insurance companies which may be under-capitalized.

Although the insurance industry generally is not directly regulated by the federal government, federal legislation and initiatives can affect the industry and our business. Certain sections of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank") pertain to the regulation and business of insurance. Specifically, the Federal Insurance Office ("FIO") has limited authority and serves to collect information and report on the business of insurance to Congress. In addition, Dodd-Frank contains the Non-admitted and Reinsurance Reform Act of 2010 ("NRRRA"). NRRRA attempts to coordinate the payment of surplus lines taxes, simplify the granting of alien insurers to become surplus lines authorized and coordinates the credit for certain reinsurance. Various sections of Dodd-Frank become effective over time and regulations have yet to be drafted for certain provisions. The Company does not anticipate that Dodd-Frank will have any material effect on its operations or financial condition this year, but will continue to monitor its implementation.

Ternian Insurance Group LLC, a leading provider of voluntary, limited benefit, affordable health plans and other employee benefits coverage for hourly and part-time workers and their families, is an authorized insurance producer in all 50 of the U.S. except Hawaii. As a resident insurance producer in Arizona, Ternian Insurance Group LLC is subject to regulation and supervision by the Arizona Department of Insurance and is also subject to the regulation and supervision of the other states in which Ternian transacts business.

AXIS Specialty Underwriters, Inc., a Florida licensed reinsurance intermediary, is subject to regulation and supervision by the Florida Department of Financial Services. AXIS Specialty Underwriters, Inc. operates as the Latin American and Caribbean regional coverholder for Syndicate 1686 providing facultative reinsurance coverage to the Latin American and Caribbean market with a focus on energy and property business.

U.S. Authorizations of our Non-U.S. Insurance Subsidiaries

The insurance laws of each state of the U.S. regulate or prohibit the sale of insurance and reinsurance within their jurisdictions by insurers and reinsurers that are not admitted to do business within such jurisdictions, or conduct business pursuant to exemptions. AXIS Specialty Europe is eligible to write surplus lines business throughout the U.S. and in Puerto Rico. AXIS Managing Agency Ltd. is eligible to use Lloyd's of London licenses to (i) write surplus lines business throughout the U.S. and in all U.S. territories, (ii) to write insurance business, except life insurance business, in the states of Illinois, Kentucky and in the U.S. Virgin Islands and (iii) to write non-life reinsurance business throughout the U.S. and in all U.S. territories, except for accident and health reinsurance in New York.

In addition to the regulatory requirements imposed by the jurisdictions in which they are licensed, reinsurers' business operations are affected by regulatory requirements in various states of the U.S. governing "credit for reinsurance" that are imposed on their ceding companies. In general, a ceding company obtaining reinsurance from a reinsurer that is licensed, accredited or approved by the jurisdiction or state in which the ceding company files statutory financial statements is permitted to reflect in its statutory financial statements a credit in an aggregate amount equal to the ceding company's liability for unearned premiums (which are that portion of premiums written which applies to the unexpired portion of the policy period), loss reserves and loss expense reserves ceded to the reinsurer. The great majority of states, however, permit a credit to statutory surplus resulting from reinsurance obtained from a non-licensed or non-accredited reinsurer to be recognized to the extent that the reinsurer provides a letter of credit, trust fund or other acceptable security arrangement. A few states do not allow credit for reinsurance ceded to non-licensed reinsurers except in certain limited circumstances and others impose additional requirements that make it difficult to become accredited. In connection with the establishment of a Multi-Beneficiary Reinsurance Trust, AXIS Specialty Bermuda obtained accredited or trustee reinsurer status in all U.S. jurisdictions except for New York.

Ireland

Our Ireland domiciled insurer and reinsurer are subject to the Solvency II Directive (Directive 2009/138/EC) as amended. Solvency II represents a consolidation and modernization of existing European Commission Solvency I insurance and reinsurance regulation and supervision and includes a new harmonized risk based solvency and reporting regime for the insurance/reinsurance sector. Solvency II covers three main areas: (i) the valuation of assets and liabilities and related solvency capital requirements; (ii) governance requirements including key functions of compliance, internal audit, actuarial and risk management; and (iii) new legal entity and European Union ("E.U.") group reporting and disclosure requirements including public disclosures. The new capital requirement must be computed using the Solvency II standard formula unless the Central Bank of Ireland ("CBI") has previously authorized a company to use its own internal model. Certain of our European legal entities are subject to Solvency II.

AXIS Specialty Europe

AXIS Specialty Europe is a European public limited liability company incorporated as a non-life insurer under the laws of Ireland. It is a Societas Europaea (SE), or European society company, and has been registered in accordance with company law of the E.U. As a SE company, AXIS Specialty Europe can more easily merge with companies in European member states and also transfer its domicile to other member states of the E.U. AXIS Specialty Europe is authorized and regulated by the CBI pursuant to the Insurance Acts 1909 to 2000, as amended, repealed or replaced, the Central Bank Acts 1942 – 2014, as amended, repealed or replaced and E.U. regulation relating to general insurance and statutory instruments made thereunder. AXIS Specialty Europe is authorized to conduct business in 16 non-life insurance classes throughout the E.U. and the European Economic Area ("EEA") which includes each of the member countries of the E.U. with the addition of Iceland, Liechtenstein and Norway. AXIS Specialty Europe may also write reinsurance business within the classes of insurance business for which it is authorized.

AXIS Specialty Europe is subject to Solvency II. In accordance with Solvency II, AXIS Specialty Europe is permitted to provide insurance services to clients located in any EEA Member State ("Freedom of Services"), subject to compliance with any "general good requirements" as may be established by the applicable EEA Member State regulator. AXIS Specialty Europe has notified the CBI of its intention to provide insurance services on a Freedom of Services basis in all EEA countries.

Solvency II also permits AXIS Specialty Europe to carry on insurance business in any EEA Member State under the principle of "Freedom of Establishment" subject to the prior approval of the CBI. AXIS Specialty Europe operates under Freedom of Establishment in the U.K., Belgium and the Netherlands through its branches established in each of these jurisdictions.

AXIS Specialty Europe's U.K. branch transacts general insurance business in the U.K. trading as AXIS Specialty London. The CBI remains responsible for the prudential supervision of the branch; however, the branch is subject to limited regulation by the U.K. Financial Conduct Authority ("FCA") and the Prudential Regulation Authority ("PRA"). Due to the U.K.'s withdrawal from the E.U. on January 31, 2020, AXIS Specialty Europe expects to lose its Freedom of Establishment rights in the U.K. once any transitional arrangements have expired. In order to maintain business continuity upon the exit of the U.K. from the E.U., AXIS Specialty Europe has submitted an application to the PRA for authorization of a third country branch in the U.K., which, if approved, would be regulated by the PRA and the FCA.

Effective January 1, 2019, the shares of Compagnie Belge d'Assurances Aviation NV/SA ("Aviabel") were transferred to AXIS Specialty Europe from AXIS Specialty Holdings Ireland Limited and Aviabel was merged into AXIS Specialty Europe by way of merger by absorption and dissolved without going into liquidation (the "Aviabel Merger").

In connection with the Aviabel Merger, AXIS Specialty Europe established two new branches in Belgium and the Netherlands (see "*Belgium*" and the "*Netherlands*" below).

AXIS Specialty Europe has local regulatory permission to carry on insurance business in Jersey and has reinsurance permissions in India, China, Argentina, Mexico, Panama, Paraguay, Chile, Honduras, Ecuador, Colombia and Guatemala.

AXIS Re SE

AXIS Re SE is a European public limited liability company incorporated as a reinsurer under the laws of Ireland. AXIS Re SE is also a Societas Europaea (SE), or European society company, registered in accordance with the corporate law of the E.U. AXIS Re SE is authorized by the CBI as a composite reinsurer (non-life and life) in accordance with the Insurance Acts 1909 to 2000, as amended, repealed or replaced, the Central Bank Acts 1942 - 2014 as amended, repealed or replaced and E.U. regulation applicable to reinsurance and statutory instruments made thereunder. AXIS Re SE is authorized to transact reinsurance throughout the E.U. and the EEA and is subject to Solvency II.

AXIS Re SE conducts business through its branch in Zurich, Switzerland trading as AXIS Re Europe (see "*Switzerland*" below).

AXIS Re SE Escritório de Representação No Brasil Ltda. was established in Brazil as a subsidiary of AXIS Re SE to facilitate the Brazilian Superintendence of Private Insurance ("SUSEP") regulatory requirements for approval of a representative office of AXIS Re SE and for the registration of AXIS Re SE with SUSEP as an Admitted Reinsurer.

AXIS Re SE's representative offices in France and Spain were closed during 2019.

AXIS Re SE has reinsurance permissions in Argentina, Bolivia, Brazil, China, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, India, Mexico, Nicaragua, Panama, Paraguay, Peru and Venezuela.

AXIS Specialty Holdings Ireland Limited

AXIS Specialty Holdings Ireland Limited is the limited liability holding company for AXIS Specialty Europe and AXIS Re SE, each incorporated under the laws of Ireland, Contessa Limited, a U.K. licensed insurance intermediary, AXIS Reinsurance (DIFC) Limited, a Dubai licensed insurance intermediary, and Aviabel Re S.A., a captive reinsurance company which was registered and licensed in Luxembourg until December 2019 (refer to "*Luxembourg*" below).

Effective January 1, 2019, AXIS Specialty Holdings Ireland Limited transferred the shares of Aviabel to AXIS Specialty Europe, described above under "*AXIS Specialty Europe*" as the Aviabel Merger.

AXIS Specialty Bermuda may write reinsurance under Solvency II equivalence between Bermuda and the E.U.

AXIS Managing Agency Ltd. is eligible to use Lloyd's of London licenses to write insurance, except permanent health, and reinsurance business on a Freedom of Services basis in Ireland.

U.K. and Lloyd's of London

In the U.K., under the Financial Services and Markets Act 2000 ("FSMA"), no person may carry on a regulated activity unless authorized or exempt. Effecting or intermediating contracts of insurance or reinsurance are regulated activities requiring authorization. Effecting contracts of insurance requires authorization by the PRA and is regulated by the FCA. Intermediating contracts of insurance requires authorization by the FCA.

Under the Financial Services Act 2012, the FCA is a conduct regulator for all U.K. firms carrying on a regulated activity in the U.K. while the PRA is the prudential regulator of U.K. banks, building societies, credit unions, insurers and major investment firms. As a prudential regulator, the PRA has a general objective to promote the safety and soundness of the firms it regulates. The PRA rules require financial firms to hold sufficient capital and have adequate risk controls in place.

The FCA has a statutory strategic objective to ensure that relevant markets function well and have operational objectives to: protect consumers; protect financial markets; and promote competition. It makes rules covering how the firm must be managed and requirements relating to the firm's systems and controls; how business must be conducted; and the firm's arrangements to manage financial crime risk. The PRA and the FCA require regular and ad hoc reporting and monitor compliance with their respective rulebooks through a variety of means including the collection of data, industry reviews, and site visits. The directors and senior managers of AXIS Managing Agency Ltd. must be "approved persons" under FSMA making them directly and personally accountable for ensuring compliance with the requirements of the PRA and the FCA.

AXIS Managing Agency Ltd.

AXIS Managing Agency Ltd. is authorized and regulated by the PRA and regulated by the FCA to conduct insurance and reinsurance business and is a Lloyd's managing agent authorized by Lloyd's to manage our syndicates, Syndicate 1686 and Syndicate 2007. AXIS Managing Agency Ltd. is also managing agent for SPA 6129, a third party Lloyd's special purpose arrangement.

To consolidate our Lloyd's business under Syndicate 1686, Syndicate 2007 ceased accepting new business and was placed into run-off on January 1, 2019.

Lloyd's is a society of members both corporate and individual, which underwrite insurance and reinsurance (each for its own account) as members of syndicates. A syndicate is made up of one or more members that join together as a group to accept insurance and reinsurance risks. Each syndicate is managed by a managing agent. Managing agents write insurance business on behalf of the member(s) of the syndicate, which member(s) receive profits or bear losses in proportion to their share in the syndicate for each underwriting year of account.

The Society of Lloyd's is subject to U.K. law and is authorized under the FSMA. The Lloyd's Act 1982 defines the governance structure and rules under which the society operates. Under the Lloyd's Act 1982, the Council of Lloyd's is responsible for the management and supervision of the Lloyd's market. The Council of Lloyd's oversees and supports the Lloyd's market. Lloyd's manages and protects the Lloyd's network of international licenses. Lloyd's agrees to syndicates' business plans and evaluates performance against those plans. Syndicates are required to underwrite only in accordance with their agreed business plans. If they fail to do so, Lloyd's can take a range of actions including, as a last resort, stopping a syndicate from underwriting. Lloyd's monitors syndicates' compliance with Lloyd's minimum standards. In addition, Lloyd's is responsible for setting both member and central capital levels.

Lloyd's has a global network of licenses and authorizations and underwriters at Lloyd's may write business in and from countries where Lloyd's has authorized status or exemptions available to non-admitted insurers or reinsurers. Lloyd's licenses can only be used if the Syndicate Business Forecast, agreed annually with Lloyd's, names those countries.

AXIS Managing Agency Ltd. operates an underwriting division at Lloyd's Insurance Company (China) Limited, a wholly owned subsidiary of the Corporation of Lloyd's which allows it to underwrite reinsurance in China.

AXIS Corporate Capital UK Limited

Until December 31, 2018, AXIS Corporate Capital UK Limited was the sole corporate member of Syndicate 1686. Effective January 1, 2019, AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited are the corporate members of Syndicate 1686, providing 70% and 30% capital support, respectively. Syndicate 1686 is managed by AXIS Managing Agency Ltd.

AXIS Corporate Capital UK II Limited

(formerly Novae Corporate Underwriting Limited)

Following the acquisition of Novae Group Limited, management of Syndicate 2007 was transferred to AXIS Managing Agency Ltd. AXIS Corporate Capital UK II Limited is the sole corporate member of Syndicate 2007.

AXIS Underwriting Limited

AXIS Underwriting Limited, formerly known as Novae Underwriting Limited, is authorized and regulated by the FCA as an insurance intermediary and underwrites insurance on behalf of Syndicate 1686 at Lloyd's.

Contessa Limited

Contessa Limited is authorized and regulated by the FCA as an insurance intermediary with offices in London and Belfast and underwrites insurance on behalf of AXIS Specialty Europe in the U.K and in Ireland.

Effective in December 2019, Contessa Limited ceased writing new business on behalf of AXIS Specialty Europe. Contessa Limited will continue to manage the AXIS Specialty Europe book of business on a run-off basis.

AXIS Specialty UK Holdings Limited

AXIS Specialty UK Holdings Limited is a limited liability holding company for AXIS Managing Agency Ltd., AXIS Corporate Capital UK Limited and Novae Group Limited, incorporated under the laws of England and Wales.

Regulatory Impact due to Brexit

On June 23, 2016, the U.K. voted to exit the E.U. ("Brexit") and on January 31, 2020, the U.K. completed its withdrawal from the E.U. The following addresses the anticipated impact to our insurers and reinsurers as a result of the the U.K.'s withdrawal from the E.U.

Insurance

AXIS Specialty Europe established its branch in the U.K. pursuant to the right to Freedom of Establishment under EU law. It is expected that AXIS Specialty Europe will lose its authorization to conduct business in the U.K. under these rights. In order to ensure continuity of services, AXIS Specialty Europe has applied for authorization from the PRA to license its existing U.K. branch as a third-country branch in the U.K.

AXIS Specialty Europe will remain authorized to service customers within and outside of the EEA to the extent permitted by local law. AXIS Specialty Europe's customers based in the EEA will be serviced from AXIS Specialty Europe's head office in Dublin, Ireland or through either of AXIS Specialty Europe's EEA branches in Belgium or the Netherlands.

AXIS Managing Agency Ltd. transacts direct insurance business in the EEA on a Freedom of Services basis from the U.K. It is expected that AXIS Managing Agency Ltd. will lose its authorization to conduct direct insurance business in the EEA on a Freedom of Services basis. However, AXIS Managing Agency Ltd. will remain able to access the EEA markets via Lloyd's Insurance Company S.A in Brussels ("Lloyd's Brussels") to ensure continuity of services in the EEA. Lloyd's Brussels has been approved by the National Bank of Belgium and the Financial Services and Markets Authority with authorization to write non-life insurance risks throughout the EEA via Lloyd's existing distribution channels.

Reinsurance

AXIS Managing Agency Ltd. currently transacts worldwide reinsurance at Lloyd's including in the EEA. It is expected that full equivalence under Solvency II will be granted by the European Commission to the U.K. as a result of the European Union (Withdrawal) Bill and the transposition of Solvency II into U.K. law. In the unlikely event that full equivalence under Solvency II is not granted, AXIS Managing Agency Ltd. will remain able to conduct non-life facultative and proportional excess of loss reinsurance throughout the EEA via Lloyd's Brussels.

AXIS Re SE currently transacts reinsurance business in the EEA and the U.K. Pursuant to the European Union (Withdrawal) Bill and the transposition of Solvency II into U.K. law, we anticipate that the PRA will grant full equivalence under Solvency II to EEA supervised reinsurers, including AXIS Re SE, allowing AXIS Re SE to continue its operations without disruption. In the unlikely event that full equivalence under Solvency II is not granted to the U.K., AXIS Capital will continue its reinsurance operations through its entities authorized to conduct reinsurance in the EEA and in the U.K.

Switzerland

AXIS Re SE's branch in Zurich, Switzerland, trades as AXIS Re Europe and is registered in Zurich as AXIS Re SE, Dublin (Zurich branch). The CBI remains responsible for the prudential supervision of the branch. The Swiss Financial Market Supervisory Authority does not impose additional regulation upon a Swiss branch of an EEA reinsurer.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write all classes of insurance business, except life, sickness and legal expenses and is authorized to write all classes of reinsurance business in Switzerland.

Singapore

AXIS Specialty Bermuda conducts insurance and reinsurance business from its branch in Singapore, AXIS Specialty Limited (Singapore Branch), subject to the supervision of the BMA and the MAS which imposes significant regulations relating to capital adequacy, risk management, governance and audit and actuarial requirements. AXIS Specialty Limited (Singapore Branch) is registered by ACRA as a foreign company in Singapore and regulated by ACRA pursuant to the Singapore Companies Act.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write insurance from Singapore with the exception of certain compulsory classes and life business. Singaporean business may also be written from outside of Singapore in certain circumstances where it is placed with a Singapore intermediary licensed by the MAS to place business at Lloyd's or by dealing directly with the insured.

Canada

AXIS Re U.S. conducts insurance and reinsurance business from AXIS Reinsurance Company (Canadian Branch), its branch in Canada, subject to the supervision of the New York State Department of Financial Services and the Office of the Superintendent of Financial Institutions Canada ("OSFI"), the federal regulatory authority that supervises federal Canadian and non-Canadian insurance companies operating in Canada pursuant to the Insurance Companies Act (Canada). The branch is authorized by OSFI to transact insurance and reinsurance. In addition, the branch is subject to the laws and regulations of each of the provinces and territories in which it is licensed.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses subject to the laws and regulations of each of the provinces and territories in which it is licensed, to write insurance in or from Canada, with the following exceptions: hail insurance in respect of crop in the province of Quebec; home warranty insurance in the province of British Columbia; life insurance; credit protection insurance; title insurance; surety; and mortgage default insurance. Syndicate 1686, through Lloyd's, is authorized to write reinsurance in or from Canada subject to certain restrictions relating to life reinsurance.

Belgium

Through December 31, 2018, Aviabel was authorized to conduct general property and casualty insurance and maintained its registered office in Brussels, Belgium. Aviabel was regulated by the National Bank of Belgium pursuant to the Belgian Act of 2016 and was subject to Solvency II. Aviabel also exercised certain insurance activities through its branch registered in the Netherlands and had a captive subsidiary in Luxembourg, Aviabel RE S.A.

Through 2018, Aviabel was permitted to provide insurance across the EEA on a cross-border basis and had reinsurance permissions in Argentina, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Venezuela, India, China and South Korea.

As a result of the Aviabel Merger on January 1, 2019, described above under "*AXIS Specialty Europe*", the insurance and reinsurance portfolio of Aviabel was transferred to AXIS Specialty Europe, a process overseen and coordinated by the National Bank of Belgium in cooperation with other European regulators.

Effective January 1, 2019, AXIS Specialty Europe conducts insurance from its Belgium branch, AXIS Specialty Europe SE (Belgium Branch) which is subject to CBI prudential supervision and limited regulation by the National Bank of Belgium.

AXIS Specialty Europe also has permission to write insurance and reinsurance on a Freedom of Services basis in Belgium.

AXIS Re SE has permission to write reinsurance on a Freedom of Services basis in Belgium.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write insurance (except permanent health) and reinsurance business on a Freedom of Establishment basis in Belgium.

Luxembourg

Aviabel Re S.A., a captive reinsurance company in Luxembourg, was liquidated and as a result surrendered its reinsurance license to the Commissariat aux Assurances in December 2019.

AXIS Specialty Europe has permission to write insurance and reinsurance on a Freedom of Services basis in Luxembourg.

AXIS Re SE has permission to write reinsurance on a Freedom of Services basis in Luxembourg.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write insurance (except permanent health) and reinsurance business on a Freedom of Establishment basis in Luxembourg.

Netherlands

Effective January 1, 2019, AXIS Specialty Europe conducts insurance from its Netherlands branch, AXIS Specialty Europe SE (Netherlands Branch) which is subject to CBI prudential supervision and limited regulation by the Dutch National Bank.

AXIS Specialty Europe has permission to write insurance and reinsurance on a Freedom of Services basis in the Netherlands.

AXIS Re SE has permission to write reinsurance on a Freedom of Services basis in the Netherlands.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write insurance (except permanent health) and reinsurance business on a Freedom of Establishment basis in the Netherlands.

Dubai

AXIS Specialty Holdings Ireland Limited recently established AXIS Reinsurance (DIFC) Limited which was granted a prudential Category 4 license from the Dubai Financial Services Authority on December 25, 2017 to provide insurance intermediation and insurance management services. AXIS Reinsurance (DIFC) Limited has been established within the Dubai International Financial Centre and is required to comply with Regulatory Law DIFC Law No. 1 2004 and any amendments.

AXIS Reinsurance (DIFC) Limited will operate as an intermediary under binding authority granted by the Board of Directors of AXIS Re SE to underwrite accident and health reinsurance.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write reinsurance in or from Dubai with certain exceptions.

Non-Admitted Insurance and Reinsurance

The Company also insures and reinsures risks in many countries, including the above countries, pursuant to regulatory permissions and exemptions available to non-admitted insurers and reinsurers.

AXIS Managing Agency Ltd. is eligible to use Lloyd's licenses to write insurance and reinsurance business where Lloyd's has authorized status or pursuant to regulatory exemptions available to non-admitted insurers and reinsurers.

Employees

At February 21, 2020, we had approximately 1,667 employees. We aim to attract and retain the top talent in the industry and to motivate our employees to make decisions that are in the best interest of both our clients and shareholders. We nurture an ethical, risk-aware, achievement-oriented culture that promotes professionalism, responsibility, integrity, discipline and entrepreneurship.

Trademarks

We use our trademarks, including among others, our "AXIS" trademarks for the global marketing of our products and services, and we believe that we sufficiently safeguard our trademark portfolio to protect our rights.

Available Information

Our Internet website address is <http://www.axiscapital.com>. Information contained in our website is not part of this report.

We make available free of charge, through our internet website, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Current copies of the charter for each of our Audit Committee, Corporate Governance and Nominating Committee, Compensation Committee, Finance Committee, Executive Committee and Risk Committee, as well as our Corporate Governance Guidelines and Code of Business Conduct, are available on our internet website at <http://www.axiscapital.com>.

ITEM 1A. RISK FACTORS

Insurance Risk

Insurance risk is the inherent uncertainty as to the occurrence, amount and timing of insurance and reinsurance liabilities transferred to us through the underwriting process.

The insurance/reinsurance business is historically cyclical, and we expect to experience periods with excess underwriting capacity and unfavorable premium rates.

The insurance/reinsurance business historically has been a cyclical industry characterized by periods of intense price competition due to excess underwriting capacity as well as periods when shortages of capacity permitted favorable premium levels. An increase in premium rates is often offset by an increasing supply of insurance and reinsurance capacity, via capital provided by new entrants, new capital market instruments and structures and/or the commitment of additional capital by existing insurers and reinsurers, which may cause prices to decrease. Any of these factors could lead to a significant reduction in premium rates, less favorable policy terms and fewer submissions for our underwriting services. In addition to these considerations, changes in the frequency and severity of losses suffered by insureds and insurers may affect the cycles of the insurance/reinsurance business significantly.

Our results of operations, financial condition, or liquidity could be materially adversely affected by the occurrence of natural and man-made disasters, as well as outbreaks of pandemic or contagious diseases.

We have substantial exposure to unexpected losses resulting from natural disasters, man-made catastrophes and other catastrophe events. Catastrophes can be caused by various events, including hurricanes, typhoons, earthquakes, tsunamis, hailstorms, floods, severe winter weather, fires, drought, and other natural disasters and outbreaks of pandemic or contagious diseases. Catastrophes can also be man-made, such as terrorist attacks and other intentionally destructive acts, including those involving nuclear, biological, chemical or radiological events, cyber-attacks, explosions and infrastructure failures. The incidence and severity of catastrophes are inherently unpredictable and losses from catastrophes could be substantial.

Increases in the values and concentrations of insured property, particularly along coastal regions, as well as increases in the cost of construction materials required to rebuild affected properties, may increase the impact of catastrophe events in the future. Changes in global climate conditions may further increase the frequency and severity of catastrophe activity and losses in the future. Similarly, changes in global political and economic conditions may increase both the frequency and severity of man-made catastrophe events in the future. Examples of the impact of catastrophe events include the recognition of the net losses and loss expenses of:

- \$336 million, in the aggregate, primarily related to Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, and the Australia Wildfires in 2019;
- \$430 million, in the aggregate, primarily related to Hurricanes Michael and Florence, California Wildfires, and Typhoon Jebi in 2018; and
- \$835 million, in the aggregate, primarily related to U.S. weather-related events, Hurricanes Harvey, Irma and Maria, Mexico earthquakes and the California wildfires in 2017.

These events materially reduced our net income in the years noted above. Although we manage our exposure to such events through the use of underwriting controls and the purchase of third-party reinsurance, catastrophe events are inherently unpredictable and the actual nature of such events when they occur could be more frequent or severe than contemplated in our pricing and risk management expectations. As a result, the occurrence of one or more catastrophe events could have a material adverse effect on our results of operations, financial condition, or liquidity.

Cyber events are man-made perils and as such the threat landscape is dynamic and evolving. There is a risk that increases in the frequency and severity of losses to our clients from cyber events could adversely affect our results of operations or financial condition. The losses incurred from this risk are also dependent on our clients' cybersecurity practices and defenses and the interaction of our policy wordings with the evolving threat landscape. In addition, our exposure to cyber events potentially includes exposure through 'non-affirmative' coverages, meaning risks and potential losses associated with policies where cyber risk is not explicitly included or excluded in the policy wording. As this is a relatively new peril, even in cases

where losses from cyber events are explicitly excluded, there can be no assurance that a court or arbitration panel will interpret policy language in line with the intention of the exclusion.

Global climate change may have a material adverse effect on our results of operations, financial condition, or liquidity.

We are potentially exposed to different aspects of climate risk, specifically, physical, liability and transition risks, as a result of climate change.

Physical risks describe weather-related events and longer-term shifts in climate, and emanate primarily from underwriting of property insurance and reinsurance. Climate change may expose us to an increased frequency and/or severity of these weather-related losses, and there is a risk that our pricing of these perils or our management of the associated aggregations does not or will not appropriately allow for changes in climate. Over the longer term, climate change may have an impact on the economic viability of certain lines of business, if suitable adjustments in price and coverage cannot be achieved.

We may also be exposed to liability risks. Liability risks relate to losses or damages suffered by our insureds from physical or transition risks, such as losses stemming from climate-related litigation in liability lines. These risks could arise from management and boards not fully considering or responding to the impacts of climate change, or not appropriately disclosing current and future risks.

There is additionally a risk that certain elements of our business cease to be viable as a result of climate change 'transition' risks, which relate to losses driven by changes in technology, governments and regulators putting into place measures to encourage and support this transition, and society as a whole adapting to a lower-carbon economy. Recognizing the importance of this transition, effective 2020 AXIS Capital will cease underwriting risks for (and investing in the securities of) companies whose primary activity relates to thermal coal mining or power generation, or tar sands extraction. There remains a risk that our financial condition or operating performance may be impacted by changes in our business model arising from climate change transition, and by the performance of strategies we put in place to manage this transition.

Furthermore, we may be exposed to losses in the value of our investments arising from the physical and transition impacts of climate change, including 'stranded assets', on the companies and securities in which we invest.

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

We have substantial exposure to unexpected losses resulting from war, acts of terrorism, political unrest and geopolitical instability in many regions of the world. In certain instances, we specifically insure and reinsure risks resulting from acts of terrorism. Even in cases where we attempt to exclude losses from terrorism and certain other similar risks from some coverages written by us, there can be no assurance that a court or arbitration panel will interpret policy language or otherwise issue a ruling favorable to us. Accordingly, we can offer no assurance that our reserves for losses and loss expenses ("loss reserves") will be adequate to cover losses should they materialize.

We have limited terrorism coverage in our own reinsurance program for our exposure to catastrophe losses related to acts of terrorism. On December 20, 2019, the President of the United States signed the Terrorism Risk Insurance Program Reauthorization Act of 2019 ("TRIP"), extending the program through December 31, 2027. Although TRIP provides benefits in the event of certain acts of terrorism, those benefits are subject to a deductible and to other limitations. Under TRIP, once losses attributable to certain acts of terrorism exceed 20% of direct commercial property and liability insurance premiums for the preceding calendar year, the federal government will reimburse insurers for 80 % of losses in excess of this deductible. Notably, TRIP does not provide coverage for reinsurance losses. Given the unpredictable frequency and severity of terrorism losses, as well as the limited terrorism coverage in our own reinsurance program, future losses from acts of terrorism could materially and adversely affect our results of operations, financial condition, or liquidity in future periods.

Our credit and political risk insurance line of business protects insureds with interests in foreign jurisdictions in the event that governmental action prevents them from exercising their contractual rights, and may also protect their assets against physical damage perils. The insurance provided may include cover for losses arising from expropriation, forced abandonment, license cancellation, trade embargo, contract frustration, non-payment, war on land or political violence (including terrorism, revolution, insurrection and civil unrest).

Our credit and political risk line of business also provides non-payment coverage on specific loan obligations. We insure sovereign non-payment and corporate non-payment as a result of commercial as well as political risk events. The vast majority of the corporate non-payment credit insurance provided is for single-named illiquid risks, primarily in the form of senior bank loans that can be individually analyzed and underwritten. We avoid insurance for structured finance products

defined by pools of risks and insurance for synthetic products that would expose us to mark-to-market losses. We also avoid terms in our credit insurance contracts which introduce liquidity risk, most notably, in the form of a collateralization requirement upon a ratings downgrade. We also manage our exposure, by among other things, setting credit limits by country, region, industry and individual counterparty, and regularly reviewing our aggregate exposures. However, due to globalization, political instability in one region can spread to other regions. Geopolitical uncertainty regarding a variety of domestic and international matters, such as the U.S. political and regulatory environment, the potential for default by one or more European sovereign debt issuers and Brexit (as defined below) could have a material adverse effect on our results of operations, financial condition, or liquidity.

The effects of emerging claim and coverage issues on our business are uncertain.

As industry practices and legal, judicial, social, political, technological and other environmental conditions change, unexpected issues related to claims and coverage may emerge. These issues may adversely affect our business by either extending coverage beyond our underwriting intent or by increasing the frequency and/or severity of claims. For example, the last global financial crisis resulted in a higher level of claim activity on professional lines insurance and reinsurance business. In some instances, the effects of these changes may not become apparent until sometime after we have issued the impacted insurance or reinsurance contracts. In addition, actual losses may vary materially from the current estimate of losses based on a number of factors (refer to "*If actual claims exceed our loss reserves, our financial results could be adversely affected*" below). As a result, the full extent of liability under an insurance or reinsurance contract may not be known for many years after the contract is issued and a loss occurs.

If actual claims exceed loss reserves, our financial results could be adversely affected.

While we believe that loss reserves at December 31, 2019 are adequate, new information, events or circumstances, unknown at the original valuation date, may lead to future developments in ultimate losses being significantly greater or less than the loss reserves currently provided. The actual final cost of settling claims outstanding at December 31, 2019, as well as claims expected to arise from the unexpired period of risk is uncertain. There are many other factors that would cause loss reserves to increase or decrease, which include, but are not limited to changes in claim severity, changes in the expected level of reported claims, judicial action changing the scope and/or liability of coverage, changes in the legislative, regulatory, social and economic environment, and unexpected changes in loss inflation.

Our operating history, which includes periods of rapid growth, means that loss reserve estimates, particularly on the longer tailed classes of business, may place more reliance on industry benchmarks than might be the case for companies with longer operating histories; as a result, the potential for volatility in estimated loss reserves may be more pronounced than for more established companies. When establishing our single point best estimate of loss reserves at December 31, 2019, management considered actuarial estimates and applied informed judgment regarding qualitative factors that may not be fully captured in actuarial estimates. Such factors included, but were not limited to, the timing of the emergence of claims, volume and complexity of claims, social and judicial trends, potential severity of individual claims, and the extent of internal historical loss data versus industry information.

Changes to previous estimates of prior year loss reserves can adversely impact the reported calendar year underwriting results if loss reserves prove to be insufficient or can favorably impact reported results if loss reserves prove to be higher than actual claim payments. If net income is insufficient to absorb a required increase in loss reserves, we would incur an operating loss and could incur a reduction in capital.

We may be adversely impacted by inflation.

Our operations, like those of other insurers and reinsurers, are susceptible to the effects of inflation because premiums are established before the ultimate amounts of losses and loss expenses are known. Although we consider the potential effects of inflation when setting premium rates, premiums may not fully offset the effects of inflation and thereby essentially result in underpricing the risks we insure and reinsure. Loss reserves include assumptions about future payments for settlement of claims and claims-handling expenses, such as the value of replacing property, associated labor costs for the property business we write and litigation costs. To the extent inflation causes costs to increase above loss reserves established for claims, we will be required to increase loss reserves with a corresponding reduction in net income in the period in which the deficiency is identified, which may have a material adverse effect on our results of operations or financial condition. Unanticipated higher inflation could also lead to higher interest rates, which would negatively impact the value of our fixed income securities and potentially other investments.

The failure of our loss limitation strategy could have a material adverse effect on our results of operations, financial condition, or liquidity.

We seek to mitigate loss exposure through multiple methods. For example, we write a number of reinsurance contracts on an excess of loss basis. Excess of loss reinsurance indemnifies the insured against losses in excess of a specified amount. We generally limit the line size for each client and line of business on our insurance business and purchase reinsurance for many of our lines of business. In the case of proportional reinsurance treaties, we seek per occurrence limitations or losses and loss expenses ratio caps to limit the impact of losses from any one event. In proportional reinsurance, the reinsurer shares a proportional part of the premiums and losses of the reinsured. We also seek to limit our loss exposure through geographic diversification. Geographic zone limitations involve significant underwriting judgments, including the determination of the area of the zones and the inclusion of a particular policy within a particular zone's limits. In addition, various provisions of our insurance policies and reinsurance contracts, such as limitations or exclusions from coverage or choice of forum negotiated to limit our risks may not be enforceable in the manner we intend. We cannot be sure that these loss limitation methods will effectively prevent a material loss exposure which could have a material adverse effect on our results of operations, financial condition, or liquidity.

If we choose to purchase reinsurance, we may be unable to do so.

We purchase reinsurance for our insurance and reinsurance operations in order to mitigate the volatility of losses on our financial results. From time to time, market conditions have limited, and in some cases have prevented, insurers and reinsurers from obtaining the types and amounts of reinsurance that they consider adequate for their business needs. There is no guarantee that our desired amounts of reinsurance or retrocessional reinsurance will be available in the marketplace in the future. In addition to capacity risk, the remaining capacity may not be on terms we deem appropriate or acceptable or with companies with whom we want to do business.

We utilize models to assist our decision making in key areas such as underwriting, reserving, reinsurance purchasing and the evaluation of our catastrophe risk but actual results could differ materially from model output.

We employ various modeling techniques (for example, scenarios, predictive, stochastic and/or forecasting) to analyze and estimate exposures, loss trends and other risks associated with our assets and liabilities. We utilize modeled outputs and related analyses to assist us in decision-making, for example, related to underwriting and pricing, reserving, reinsurance purchasing and the evaluation of our catastrophe risk through estimates of probable maximum losses, or "PMLs". The modeled outputs and related analyses, both from proprietary and third-party models, are subject to various assumptions, professional judgment, uncertainties and the inherent limitations of any statistical analysis, including the use and quality of historical internal and industry data. Consequently, actual losses from loss events, whether from individual components (for example, wind, flood, earthquake, etc.) or in the aggregate, may differ materially from modeled results. If, based upon these models or other factors, we misprice our products or underestimate the frequency and/or severity of loss events, our results of operations, financial condition, or liquidity may be adversely affected.

With respect to the evaluation of our catastrophe risk, our modeling utilizes a mix of historical data, scientific theory and mathematical methods. Output from multiple commercially available vendor models serves as a key input in our PML estimation process. We believe that there is considerable uncertainty in the data and parameter inputs for these vendor models. In that regard, there is no universal standard in the preparation of insured data for use in the models and the running of modeling software. In our view, the accuracy of the models depends heavily on the availability of detailed insured loss data from actual recent large catastrophes. Due to the limited number of events, there is significant potential for substantial differences between the modeled loss estimate and actual company experience for a single large catastrophe event. This potential difference could be even greater for perils with limited or no modeled annual frequency. We perform our own vendor model validation (including sensitivity analysis and backtesting, where possible) and supplement model output with historical loss information and analysis and management judgment. In addition, we derive our own estimates for non-modeled perils. Despite this, our PML estimates are subject to a high degree of uncertainty and actual losses from catastrophe events may differ materially.

We could be materially adversely affected if managing general agents, general agents, coverholders, other producers and third-party administrators in our program business exceed their underwriting and/or claims settlement authorities or otherwise breach obligations owed to us.

In program business conducted by the insurance segment, following our underwriting, financial, claims and information technology due diligence reviews, we authorize managing general agents, general agents, coverholders and other producers to write business on our behalf within underwriting authorities prescribed by us. Once a program/coverholder commences, we

must rely on the underwriting controls of these entities to write business within the underwriting authorities provided by us. Although we monitor our programs/coverholders on an ongoing basis, our monitoring efforts may not be adequate or these entities may exceed their underwriting or claims settlement authorities or otherwise breach obligations owed to us. To the extent that these entities exceed their authorities or otherwise breach obligations owed to us in the future, our results of operations or financial condition could be materially adversely affected.

Strategic Risk

Strategic risks are risks that affect or are created by an organization's business strategy and strategic objectives. Our review of strategic risk is a broad one that evaluates not only internal and external challenges that might cause our chosen strategy to fail but also evaluates major risks that could affect our long-term position and performance.

Competition and consolidation in the insurance/reinsurance industry could reduce our growth and profitability.

The insurance/reinsurance industry is highly competitive. We compete on an international and regional basis with major U.S., Bermuda, European and other international insurers and reinsurers and underwriting syndicates, including Lloyd's, some of which have greater financial, marketing and management resources than we do. We also compete with new companies that continue to be formed to enter the insurance/reinsurance markets. In addition, capital market participants have created alternative products that are intended to compete with insurance and reinsurance products. New and alternative capital inflows in the insurance/reinsurance industry and the retention by insured and cedants of more business have caused an excess supply of insurance and reinsurance capital. There has been a large amount of merger and acquisition activity in the insurance/reinsurance sector in recent years, which may continue; we may experience increased competition as a result of that consolidation with consolidated entities having enhanced market power. Increased competition could result in fewer submissions, lower premium rates, less favorable policy terms and conditions and greater costs of customer acquisition and retention. In addition, if industry pricing does not meet our hurdle rate, we may reduce our future underwriting activities. These factors could have a material adverse effect on our growth and profitability.

Global economic conditions could materially and adversely affect our business, results of operations or financial condition.

Worldwide financial markets can be volatile. In 2008 and 2009, for example, there was volatility and disruption including, among other things, dislocation in the mortgage and asset-backed securities markets, deleveraging and decreased liquidity generally, widening of credit spreads, bankruptcies and government intervention in a number of large financial institutions. These events resulted in extraordinary responses by governments worldwide, including the enactment of the Emergency Economic Stabilization Act of 2008 and the U.S. Recovery and Reinvestment Act in 2009 and Dodd Frank. Uncertainty and market turmoil has affected and may in the future affect, among other aspects of our business, the demand for and claims made under our products, the ability of customers, counterparties and others to establish or maintain their relationships with us, our ability to access and efficiently use internal and external capital resources and our investment performance and portfolio. We also provide coverage to the mortgage industry through insurance and reinsurance of mortgage insurance companies and U.S. government sponsored entity credit risk sharing transactions, and deteriorating economic conditions could cause mortgage insurance losses to increase and adversely affect our results of operations or financial condition.

In addition, steps taken by governments to stabilize financial markets and improve economic conditions may be ineffective and actual or anticipated efforts to continue to unwind some of such steps could disrupt financial markets and/or could adversely impact the value of our investment portfolio. While inflation has recently been moderate and that trend may continue, it is possible that expansionary monetary policies, recent changes to the U.S. tax law, improving economic conditions, higher commodity prices and tighter labor markets could lead to an inflationary environment.

Given the ongoing global economic uncertainties, evolving market conditions may continue to affect our results of operations, financial condition, and capital resources. In the event that there is additional deterioration or volatility in financial markets or general economic conditions, our results of operations, financial condition, capital resources, and competitive landscape could be materially and adversely affected.

Acquisitions that we made or may make could turn out to be unsuccessful.

As part of our strategy, we have pursued and may continue to pursue growth through acquisitions. For example, as part of our strategy to develop a market leading international specialty insurance business, we acquired Novae Group plc, a specialty insurer and reinsurer that operated through Lloyd's of London in 2017. The negotiation of potential acquisitions as well as the integration of an acquired business or new personnel could result in a substantial diversion of management resources. Successful integration will depend on, among other things, our ability to effectively integrate acquired businesses or new personnel into our existing risk management and financial and operational reporting systems, our ability to effectively manage any regulatory issues created by our entry into new markets and geographic locations, our ability to retain key personnel and other operational and economic factors. There can be no assurance that the integration of acquired businesses or new personnel will be successful, that we will realize anticipated synergies, cost savings and operational efficiencies, or that the business acquired will prove to be profitable or sustainable. The failure to integrate acquired businesses successfully or to manage the challenges presented by the integration process may adversely impact our financial results. Acquisitions could involve numerous additional risks such as potential losses from unanticipated litigation or levels of claims and inability to generate sufficient revenue to offset acquisition costs.

Our ability to grow through acquisitions will depend, in part, on our success in addressing these risks. Any failure by us to effectively implement our acquisitions strategy could have a material adverse effect on our business, results of operations, or financial condition.

We could be adversely affected by the loss of one or more key executives or by an inability to attract and retain qualified personnel or by the inability of an executive to obtain a Bermuda work permit.

Our success depends on our ability to retain the services of our existing key executives and to attract and retain additional qualified personnel in the future. The loss of the services of any of our key executives or the inability to hire and retain other highly qualified personnel in the future could adversely affect our ability to conduct our business. Changes in local employment legislation, taxation and the approach of regulatory bodies to compensation practice within our operating jurisdictions may impact our ability to recruit and retain qualified personnel or the cost to us of doing so. There can be no assurance that we will be successful in identifying, hiring or retaining successors on terms acceptable to us.

With a few exceptions generally under Bermuda law only Bermudians, spouses of Bermudians or Permanent Resident Certificate holders (collectively "Residents") may engage in any gainful occupation in Bermuda without an appropriate governmental work permit. Work permits may be granted or extended by the Bermuda government only upon showing that, after proper public advertisement (in most cases), no Residents who meet the minimum standard requirements for the advertised position have applied for the position. Work permits are generally granted for one, three or five year durations. In January 2013, the Bermuda government abolished term limits, meaning expatriate workers can (subject to the above) continue to be employed in Bermuda indefinitely by reapplying for work permits. This removed the immigration policy put in place in 2001, which limited the total duration expatriate workers could remain in Bermuda. All executive officers who work in our Bermuda office who require work permits have obtained them.

The exit of the U.K. from the E.U. could adversely affect us.

On June 23, 2016, the U.K. voted in favor of Brexit. In March 2017, the U.K. government gave official notice of its intention to leave the E.U., commencing the period of up to two years during which the U.K. and the E.U. would negotiate the terms of the U.K.'s withdrawal from the E.U. On October 17, 2019, the U.K. and the E.U. approved a revised withdrawal agreement pertaining to Brexit, which was ratified by the U.K. Parliament and the Council of the European Union on January 31, 2020. This agreement provides for a transition period that will last until at least December 31, 2020, which period may be extended through December 31, 2022; however, the U.K. and the E.U. must make a decision as to whether to so extend by July 1, 2020. During this transition period, the U.K. will remain within the European Single Market, and the services provided to clients and brokers should remain unaffected by these circumstances. Nevertheless, we have significant operations in the U.K. and other E.U. member states. Depending on the final terms of Brexit, we may be required to reorganize our operations and/or to capitalize U.K. branch activities in a manner that could be less efficient and more expensive.

Any of these effects of Brexit, and others we cannot anticipate, could adversely affect our business, results of operations, or financial condition.

Since we depend on a few brokers for a large portion of our revenues, loss of business provided by any one of them could adversely affect us.

We market our insurance and reinsurance products worldwide primarily through insurance and reinsurance brokers and derive a significant portion of our business from a limited number of brokers. Marsh & McLennan Companies, Inc., including its subsidiary Guy Carpenter & Company, Inc., Aon plc and Willis Towers Watson PLC, provided 47% of gross premiums written in 2019. Our relationships with these brokers are based on the quality of our underwriting and claims services, as well as our financial strength ratings. Any deterioration in these factors could result in the brokers advising our clients to place their business with other insurers and reinsurers. In addition, these brokers also have, or may in the future acquire, ownership interests in insurance and reinsurance companies that may compete with us; these brokers may then favor their own insurers and reinsurers over other companies. Loss of all or a substantial portion of the business provided by one or more of these brokers could have a material adverse effect on our business.

A downgrade in our financial strength or credit ratings by one or more rating agencies could materially and negatively impact our business, results of operations, financial condition, or liquidity.

Our ability to underwrite business is dependent upon the quality of our claims paying and financial strength ratings as evaluated by independent rating agencies. A downgrade, withdrawal or negative watch/outlook by any of these institutions could cause our competitive position in the insurance/reinsurance industry to suffer and make it more difficult for us to market our products. If we experience a credit rating downgrade, withdrawal or negative watch/outlook in the future, we could incur higher borrowing costs and may have more limited means to access capital. A downgrade, withdrawal or negative watch/outlook could also result in a substantial loss of business for us, as ceding companies and brokers that place such business may move to other insurers and reinsurers with higher ratings. We would also be required to post collateral under the terms of certain of our policies of reinsurance.

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

Our future capital requirements depend on many factors, including rating agency and regulatory requirements, the performance of our investment portfolio, our ability to write new business successfully, the frequency and severity of catastrophe events and our ability to establish premium rates and loss reserves at levels sufficient to cover losses. We may need to raise additional funds through financings. If we are unable to do so, it may curtail our ability to conduct our business. Any equity or debt financing, if available at all, may be on terms that are not favorable to us. Equity financings could be dilutive to our existing shareholders and could result in the issuance of securities that have rights, preferences and privileges that are senior to those of our other securities. If we cannot obtain adequate capital on favorable terms or at all, our business, operating results and financial condition could be adversely affected.

Our inability to obtain the necessary credit could affect our ability to offer reinsurance in certain markets.

Neither AXIS Specialty Bermuda nor AXIS Re SE is licensed or admitted as an insurer or reinsurer in any jurisdiction other than Bermuda, Ireland, Singapore and Brazil. Because the U.S. and some other jurisdictions do not permit insurance companies to take credit on their statutory financial statements for reinsurance obtained from unlicensed or non-admitted insurers unless appropriate security mechanisms are in place, our reinsurance clients in these jurisdictions typically require AXIS Specialty Bermuda and AXIS Re SE to provide letters of credit or other collateral. Our credit facilities are used to post letters of credit. However, if our credit facilities are not sufficient or if we are unable to renew our credit facilities or arrange for other types of security on commercially affordable terms, AXIS Specialty Bermuda and AXIS Re SE could be limited in their ability to write business for some of our clients.

Market Risk, and Liquidity Risk

Market risk is the risk that our financial instruments may be negatively impacted by movements in financial market prices or rates such as equity prices, interest rates, credit spreads and foreign exchange rates. Liquidity risk is the risk that we may not have sufficient financial resources to meet our obligations when they fall due, or would have to incur excessive costs to do so.

Our investment and derivative instrument portfolios are exposed to significant capital markets risk related to changes in interest rates, credit spreads and equity prices, as well as other risks, which may adversely affect our results of operations or financial condition.

The performance of our cash and investments portfolio has a significant impact on our financial results. A failure to successfully execute our investment strategy could have a significant impact on our results of operations or financial condition.

Our investment portfolio is subject to a variety of market risks, including risks relating to general economic conditions, interest rate fluctuations, equity price risk, foreign currency movements, pre-payment or reinvestment risk, liquidity risk and credit risk. Although we manage market risks through, among other things, stressing diversification and conservation of principal and liquidity in our investment guidelines, it is possible that, in periods of economic weakness or periods of turmoil in capital markets, we may experience significant losses in our portfolio.

Our fixed maturities, which represent 87% of our total investments and 78% of total cash and investments at December 31, 2019, may be adversely impacted by changes in interest rates. Increases in interest rates could cause the fair value of our investment portfolio to decrease, resulting in a lower book value (refer to Item 7A 'Quantitative and Qualitative Disclosure About Market Risk' for further details) and capital resources. In addition, a lower interest rate environment can result in reductions in our investment yield as new funds and proceeds from sales and maturities of fixed income securities are reinvested at lower rates. This reduces our overall future profitability. Interest rates are highly sensitive to many factors, including governmental and central bank monetary policies, inflation, domestic and international economic and political conditions and other factors beyond our control.

Our portfolios of "other investments" and equity securities expose us to market price variability, driven by a number of factors outside our control including, but not limited to global equity market performance. Given our reliance on external investment managers, we are also exposed to operational risks, which may include, but are not limited to a failure to follow our investment guidelines, technological and staffing deficiencies and inadequate disaster recovery plans.

Our derivative instrument counterparties may default on amounts owed to us due to bankruptcy, insolvency, lack of liquidity, adverse economic conditions, operational failure, fraud or other reasons. Even if we are entitled to collateral in circumstances of default, such collateral may be illiquid or proceeds from such collateral when liquidated may not be sufficient to recover the full amount of the obligation.

Changes in the method for determining LIBOR and the potential replacement of LIBOR may affect our cost of capital and net investment income.

On July 27, 2017, the FCA announced its intention to cease sustaining LIBOR after 2021. The FCA has statutory powers to require panel banks to contribute to LIBOR where necessary. The FCA has decided not to ask, or to require, that panel banks continue to submit contributions to LIBOR beyond the end of 2021. The FCA has indicated that it expects that the current panel banks will voluntarily sustain LIBOR until the end of 2021. The FCA's intention is that after 2021, it will no longer ask, or require, banks to submit contributions to LIBOR. It is possible that the IBA and the panel banks could continue to produce LIBOR on the current basis after 2021, if they are willing and able to do so, but we believe it is unlikely that LIBOR will survive in its current form, or at all.

Uncertainty as to the nature of such potential changes, alternative reference rates or other reforms may adversely affect the trading market for LIBOR-based securities, including those held in our investment portfolio. Changes or reforms to the determination or supervision of LIBOR or successor reference rate may result in a sudden or prolonged increase or decrease in reported LIBOR or to a successor, which could have an adverse impact on the market for floating rate securities and the value of our investment portfolio and insurance products which directly or indirectly reference LIBOR or its successor.

At December 31, 2019, our investment portfolio included \$1.8 billion of floating rate investments for which the interest rate was tied to LIBOR. The instruments and agreements governing our investments generally provide for appropriate fall-back language if the current index is no longer available, however there is no assurance that the alternative index will provide comparable returns. There is currently no definitive information regarding the future utilization of LIBOR or of any particular replacement rate. As such, the potential effect of any such event on net investment income cannot yet be determined and any changes to benchmark interest rates could decrease net investment income, which could impact our results of operations, liquidity, or the market value of our investments.

Our operating results may be adversely affected by currency fluctuations.

Our reporting currency is the U.S. dollar. However, a portion of gross premiums are written and ceded in currencies other than the U.S. dollar and a portion of gross and ceded loss reserves are in non-U.S. currencies. In addition, a portion of our investment portfolio is denominated in currencies other than the U.S. dollar. From time to time, we may experience losses resulting from fluctuations in the values of these non-U.S. currencies, which could adversely affect our operating results. Although we manage our foreign currency exposure through matching of our major foreign-denominated assets and liabilities, as well as through use of currency derivatives, there is no guarantee that we will successfully mitigate our exposure to foreign exchange losses. Sovereign debt concerns in Europe and related financial restructuring efforts, which may cause the value of the euro to deteriorate, and Brexit, which caused significant volatility in currency exchange rates, especially between the U.S. dollar and the British pound, may magnify these risks.

Our underwriting activities may expose us to liquidity risks.

Our exposure to liquidity risk stems mainly from the need to cover potential extreme loss events and regulatory constraints that limit the flow of funds within the Group. We maintain cash and cash equivalents and high quality, liquid investment portfolios to meet expected outflows, as well as those that could result from a range of potential stress events. We place internal limits on the maximum percentage of cash and investments which may be in an illiquid form as well as on the minimum percentage of our asset portfolio which may be invested in unrestricted cash and liquid investment grade fixed income securities.

Additionally, we maintain committed borrowing facilities, as well as access to diverse funding sources to cover contingencies. Funding sources include asset sales, external debt issuances and lines of credit. We conduct stress tests to ensure the sufficiency of these funding sources in extreme scenarios; however, there remains a risk that in certain circumstances, our results of operations or financial condition may be adversely impacted by our inability to access appropriate liquidity, or the cost of doing so.

Credit Risk

Credit risk represents the risk of incurring financial loss due to the diminished creditworthiness (eroding credit rating and, ultimately, default) of our third-party counterparties.

If we successfully purchase reinsurance, we may be unable to collect amounts due to us.

A reinsurer's insolvency, or inability or refusal to make payments under the terms of its reinsurance agreement with us, could have a material adverse effect on our business because we remain liable to the insured. We face counterparty risk whenever we purchase reinsurance or retrocessional reinsurance. Consequently, the insolvency, inability or unwillingness of any of our present or future reinsurers to make timely payments to us under the terms of our reinsurance or retrocessional agreements could have an adverse effect on our results of operations, financial condition, or liquidity.

Our reliance on brokers subjects us to credit risk.

In accordance with industry practice, we pay amounts owed on claims under our insurance and reinsurance contracts to brokers, and these brokers pay these amounts over to the clients that have purchased insurance and reinsurance from us. Although the law is unsettled and depends upon the facts and circumstances of the particular case, in some jurisdictions, if a broker fails to make such a payment, we might remain liable to the insured or ceding insurer for the deficiency.

Conversely, in certain jurisdictions, when the insured or ceding insurer pays premiums for these policies to brokers for payment over to us, these premiums might be considered to have been paid to us and the insured or ceding insurer will no longer be liable to us for those amounts, whether or not we have actually received the premiums from the broker. Consequently, we assume a degree of credit risk associated with brokers with whom we transact business. These risks are heightened during periods characterized by financial market instability and/or an economic downturn or recession.

Certain of our policyholders and intermediaries may not pay premiums owed to us due to insolvency or other reasons.

Insolvency, liquidity problems, distressed financial condition or the general effects of economic recession may increase the risk that policyholders or intermediaries, such as insurance brokers, may not pay a part of or the full amount of premiums owed to us, despite an obligation to do so. The terms of our contracts may not permit us to cancel our insurance even though we have not received payment. If non-payment becomes widespread, whether as a result of insolvency, lack of liquidity, adverse economic conditions, operational failure or otherwise, it could have a material adverse impact on our revenues and results of operations.

Operational Risk

Operational risk represents the risk of financial loss as a result of inadequate processes, system failures, human error or external events.

If we experience difficulties with technology and/or data security, our ability to conduct our business might be negatively impacted.

While technology can streamline many business processes and ultimately reduce the cost of operations, technology initiatives present certain risks. Our business is dependent upon our employees' and outsourcers' ability to perform, in an efficient and uninterrupted fashion, necessary business functions such as processing policies and paying claims. A shutdown or inability to access one or more of our facilities, a power outage, or a failure of one or more of our information technology, telecommunications or other systems could significantly impair our ability to perform such functions on a timely basis. If sustained or repeated, such a business interruption, system failure or service denial could result in a deterioration of our ability to write and process business, provide customer service, pay claims in a timely manner or perform other necessary business functions. Unauthorized access, computer viruses, deceptive communications (phishing), malware, hackers and other external hazards including catastrophe events could expose our data systems to security breaches. These risks could expose us to data loss and damages.

Like other global companies, we may be regularly the target of attempted cyber and other security threats and must continuously monitor and develop our information technology networks and infrastructure to prevent, detect, address and mitigate the risk of threats to our data and systems. Over time, and particularly recently, the sophistication of these threats continues to increase. While administrative and technical controls, along with other preventive actions, reduce the risk of cyber incidents and protect our information technology, they may be insufficient to thwart cyber attacks and/or prevent other security breaches to our systems.

To the extent any disruption or security breach results in a loss or damage to our data, or inappropriate disclosure of our confidential information or that of others, it could impact our operations, cause significant damage to our reputation, affect our relationships with our customers and clients, lead to claims against us under various data privacy laws, result in regulatory action and ultimately have a material adverse effect on our business or operations. In addition, although we purchase limited cyber insurance, we may be required to incur significant costs to mitigate the damage caused by any security breach, to address any interruptions in our business, or to protect against future damage, which costs may not be covered by our cyber insurance.

We also operate in a number of jurisdictions with strict data privacy and other related laws, which could be violated in the event of a significant cybersecurity incident, or by personnel. Failure to comply with these obligations can give rise to monetary fines and other penalties that could be significant.

Our business may be adversely affected if third-party outsourced service providers fail to satisfactorily perform certain technology and business process functions.

We outsource certain technology and business process functions to third parties. If we do not effectively develop and implement our outsourcing strategy, third-party providers do not perform as anticipated or we experience technological or other problems with a transition, we may not realize productivity improvements or cost efficiencies and may experience operational difficulties, increased costs and a loss of business. Our outsourcing of certain technology and business process functions to third parties may expose us to enhanced risk related to data security, which could result in monetary and reputational damages. In addition, our ability to receive services from third-party providers might be impacted by political instability or unanticipated regulatory requirements. As a result, our ability to conduct our business might be adversely affected.

We rely on internal processes to maintain our operations and manage the operational risks inherent to our business; employee misconduct, errors or omissions in the execution of these processes may result in financial losses.

We rely on the execution of internal processes to maintain and execute our operations. We seek to monitor and control our exposure to risks arising from these processes through an enterprise risk management framework, internal controls, management review and other processes. We cannot provide total assurance that these processes will effectively identify or control all risks, or that our employees and third-party agents will effectively execute them. Loss may result from, among other things, fraud; errors; or failure to document transactions properly, obtain proper internal authorization, comply with underwriting or other internal guidelines, or comply with regulatory requirements. These risks could result in losses that adversely affect our business, results of operations, or financial condition. Furthermore, insurance policies provided by third parties may not cover us if we experience a significant loss from these risks.

Regulatory Risks

Regulatory risk means the risk arising from our failure to comply with legal, statutory or regulatory obligations

Compliance with laws and regulations governing the processing of personal data and information may impede our services or result in increased costs. Failure to comply with these data privacy laws and regulations could result in material fines or penalties imposed by data protection or financial services conduct regulators and/or awards of civil damages and any data breach may have a material adverse effect on our reputation, results of operations, or financial condition, or have other adverse consequences.

Our business relies on the processing of data in many jurisdictions and the movement of data across national borders. The collection, storage, handling, disclosure, use, transfer and security of personal information that occurs in connection with our business is subject to federal, state and foreign data privacy laws. These legal requirements are not uniform and continue to evolve, and regulatory scrutiny in this area is increasing around the world. In many cases, these laws apply not only to third-party transactions, but also to transfers of information among the Company and its subsidiaries. Privacy and data protection laws may be interpreted and applied differently from country to country and may create inconsistent or conflicting requirements.

The General Data Privacy Regulation ("GDPR") has extra-territorial effect. It requires all companies processing data of E.U. citizens to comply with the GDPR, regardless of the company's location; it also imposes obligations on E.U. companies processing data of non-E.U. citizens. The GDPR imposes requirements regarding the processing of personal data and confers new rights on data subjects, including rights of access to their personal data, deletion of their personal data, the "right to be forgotten" and the right to "portability" of personal data.

The California Consumer Privacy Act ("CCPA") came into force on January 1, 2020 and confers rights on Californian residents including rights to know what personal information is collected about them, whether their personal information is sold and if so, to whom, to access their personal information that has been collected and to require a business to delete their personal information.

Compliance with the enhanced obligations imposed by the GDPR, the CCPA and other legislation (including Bermuda's Personal Information Protection Act) requires investment in appropriate technical or organizational measures to safeguard the rights and freedoms of data subjects, may result in significant costs to our business and may require us to modify certain of our business practices. Enforcement actions, investigations and the imposition of substantial fines and penalties by regulatory authorities as a result of data security incidents and privacy violations have increased dramatically over the past several years. The enactment of more restrictive laws, rules, regulations, or future enforcement actions or investigations could impact us through increased costs or restrictions on our business, and noncompliance could result in regulatory penalties and significant legal liability.

In addition, unauthorized disclosure or transfer of sensitive or confidential client or Company data, whether through systems failure, employee negligence, fraud or misappropriation, by the Company or other parties with whom we do business, could subject us to significant litigation, monetary damages, regulatory enforcement actions, fines and criminal prosecution in one or more jurisdictions. Such events could also result in negative publicity and damage to our reputation and cause us to lose business, which could therefore have a material adverse effect on our results of operations or financial condition.

The regulatory system under which we operate, and potential changes thereto, could have a material adverse effect on our business.

Our insurance and reinsurance subsidiaries conduct business globally and are subject to varying degrees of regulation and supervision in multiple jurisdictions. In the U.K., Lloyd's has supervisory powers that pose unique regulatory risks. The laws and regulations of the jurisdictions and markets, including Lloyd's in which our insurance and reinsurance subsidiaries are domiciled or operate require, among other things, that our subsidiaries maintain minimum levels of statutory capital and liquidity, meet solvency standards, participate in guaranty funds and submit to periodic examinations of their financial condition and compliance with underwriting and other regulations. These laws and regulations also limit or restrict payments of dividends and reductions in capital. Statutes, regulations and policies may also restrict the ability of these subsidiaries to write insurance and reinsurance contracts, make certain investments and distribute funds. The purpose of insurance laws and regulations generally is to protect insureds and ceding insurance companies, not our shareholders. We may not be able to comply fully with, or obtain appropriate exemptions from, these statutes and regulations, which could result in restrictions on our ability to do business or undertake activities that are regulated in one or more of the jurisdictions in which we conduct business and could subject us to fines and other sanctions. In addition, changes in the laws or regulations to which our insurance and reinsurance subsidiaries are subject or in the interpretation thereof by enforcement or regulatory agencies could have an adverse effect on our business.

Potential government intervention in our industry as a result of recent events and instability in the marketplace for insurance products could hinder our flexibility and negatively affect the business opportunities that may be available to us in the market.

Government intervention and the possibility of future government intervention have created uncertainty in insurance/reinsurance markets. Government and regulators are generally concerned with having insurers and reinsurers with high solvency ratios and localized capital to ensure the protection of policyholders to the possible detriment of other constituents, including shareholders of insurers and reinsurers.

In recent years certain U.S. and non-U.S. judicial and regulatory authorities, including U.S. Attorney's Offices and certain state attorneys general, have commenced investigations into business practices in the insurance industry. In addition, although the U.S. federal government has not historically regulated insurance, there have been proposals from time to time, and especially after the most recent global financial crisis, to impose federal regulation on the U.S. insurance industry. For example, in 2010, Dodd-Frank established a Federal Insurance Office ("FIO") within the U.S. Treasury. The FIO has limited regulatory authority and is empowered to gather data and information regarding the insurance industry, and has conducted and submitted a study to the U.S. Congress on how to modernize and improve insurance regulation in the U.S. This study's findings are not expected to have a significant impact on the Company. Further, Dodd-Frank gives the Federal Reserve supervisory authority over a number of U.S. financial services companies, including insurance companies, if they are designated by a two-thirds vote of a Financial Stability Oversight Council as 'systemically important'. While we do not believe that we are systemically important, as defined in Dodd-Frank, Dodd-Frank or additional federal or state regulation that is adopted in the future could impose significant burdens on us, impact the ways in which we conduct our business and govern our subsidiaries, increase compliance costs, increase the levels of capital required to operate our subsidiaries, duplicate state regulation and/or result in a competitive disadvantage.

Certain of our European legal entities are subject to local laws that implement the Solvency II Directive. Solvency II covers three main areas: (i) the valuation of assets and liabilities on a Solvency II economic basis and risk-based solvency and capital requirements; (ii) governance requirements including requirements relating to the key functions of compliance, internal audit, actuarial and risk management; and (iii) new supervisory legal entity and group reporting and disclosure requirements including public disclosures. The BMA is fully "equivalent" under the Solvency II Directive for Bermuda's commercial insurance sector, including Class 4 insurers.

While we cannot predict the exact nature, timing or scope of possible governmental initiatives, such proposals could adversely affect our business by, among other things:

- Providing reinsurance capacity in markets and to consumers that we target;
- Requiring our further participation in industry pools and guaranty associations;
- Expanding the scope of coverage under existing policies; e.g., following large disasters;
- Further regulating the terms of insurance and reinsurance contracts; or
- Disproportionately benefiting the companies of one country over those of another.

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

We must comply with all applicable economic and financial sanctions, other trade controls and anti-bribery laws and regulations of the U.S. and other foreign jurisdictions where we operate, including Bermuda, the U.K. and the European Community. U.S. laws and regulations applicable to us include the economic trade sanctions laws and regulations administered by the U.S. Department of Treasury's Office of Foreign Assets Control as well as certain laws administered by the U.S. Department of State. In addition, we are subject to the Foreign Corrupt Practices Act and other anti-bribery laws, such as the Bermuda Bribery Act and the U.K. Bribery Act, which generally bar corrupt payments or unreasonable gifts. Although we have policies and controls in place that are designed to ensure compliance with these laws and regulations, it is possible that an employee or an agent acting on our behalf, could fail to comply with applicable laws and regulations and due to the complex nature of the risks, it may not always be possible for us to ascertain compliance with such laws and regulations. In such event, we could be exposed to civil penalties, criminal penalties and other sanctions, including fines or other unintended punitive actions. In addition, such violations could damage our business and/or our reputation. All of the foregoing could have a material adverse effect on our financial condition and operating results.

Future changes in current accounting practices may materially impact our reported financial results.

Future changes in accounting practices may result in significant additional expenses and may affect the calculation of financial statement line items. For example, this could occur if we are required to prepare information relating to prior periods or if we are required to apply new requirements retroactively.

Risks Related to Ownership of our Securities

In addition to the risks to our business listed above, there are certain other risks related to the ownership of our securities.

The price of our common shares may be volatile.

There has been significant volatility in the market for equity securities in recent years. During 2019, 2018, and 2017 the price of our common shares fluctuated from a low of \$50.95 to a high of \$67.25, a low of \$47.43 to a high of \$60.69 and a low of \$49.42 to a high of \$71.06, respectively. The price of our common shares may not remain at or exceed current levels. The following factors, in addition to those described in other risk factors above, may have an impact on the market price of our common stock:

- actual or anticipated variations in our quarterly results, including as a result of catastrophes or our investment performance;
- any share repurchase program;
- changes in market valuation of companies in the insurance/reinsurance industry;
- changes in expectations of future financial performance or changes in estimates of securities analysts;
- fluctuations in stock market processes and volumes;
- issuances or sales of common shares or other securities in the future;
- the addition or departure of key personnel;
- changes in tax law; and
- announcements by us or our competitors of acquisitions, investments or strategic alliances.

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

Our ability to pay dividends and to make payments on indebtedness may be constrained by our holding company structure.

AXIS Capital is a holding company and has no direct operations of its own. AXIS Capital has no significant operations or assets other than its ownership of the shares of its operating insurance and reinsurance subsidiaries, AXIS Specialty Bermuda, AXIS Ventures Reinsurance Limited, AXIS Re SE, AXIS Specialty Europe, the Members of Lloyd's (AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited), AXIS Re U.S., AXIS Specialty U.S., AXIS Surplus and AXIS Insurance Co. (collectively, our "Insurance Subsidiaries"). Dividends and other permitted distributions from our Insurance Subsidiaries (in some cases through our subsidiary holding companies), are our primary source of funds to meet ongoing cash requirements, including debt service payments and other expenses, and to pay dividends to our shareholders. Our Insurance Subsidiaries are subject to significant regulatory restrictions limiting their ability to declare and pay dividends and make distributions. The inability of our Insurance Subsidiaries to pay dividends in an amount sufficient to enable us to meet our cash requirements at the holding company level could have a material adverse effect on our business and our ability to pay dividends and make payments on our indebtedness.

AXIS Capital is a Bermuda company and it may be difficult for you to enforce judgments against it or its directors and executive officers.

AXIS Capital is incorporated pursuant to the laws of Bermuda and our business is based in Bermuda. In addition, some of our directors and officers reside outside the U.S., and all or a substantial portion of our assets and the assets of such persons are located in jurisdictions outside the U.S. As a result, it may be difficult or impossible to effect service of process within the U.S. upon those persons or to recover against us or them on judgments of U.S. courts, including judgments predicated upon civil liability provisions of the U.S. federal securities laws. Further, it may not be possible to bring a claim in Bermuda against us or our directors and officers for violation of U.S. federal securities laws because these laws may have no extraterritorial application under Bermuda law and do not have force of law in Bermuda. A Bermuda court may, however, impose civil liability, including the possibility of monetary damages, on us or our directors and officers if the facts alleged in a complaint constitute or give rise to a cause of action under Bermuda law.

There are provisions in our organizational documents that may reduce or increase the voting rights of our shares.

Our bye-laws generally provide that shareholders have one vote for each common share held by them and are entitled to vote, on a non-cumulative basis, at all meetings of shareholders. However, the voting rights exercisable by a shareholder may be limited so that certain persons or groups are not deemed to hold 9.5% or more of the voting power conferred by our shares. Under these provisions, some shareholders may have the right to exercise their voting rights limited to less than one vote per share. Moreover, these provisions could have the effect of reducing the voting power of some shareholders who would not otherwise be subject to the limitation by virtue of their direct share ownership. In addition, our board of directors may limit a shareholder's exercise of voting rights where it deems it necessary to do so to avoid adverse tax, legal or regulatory consequences.

We also have the authority under our bye-laws to request information from any shareholder for the purpose of determining whether a shareholder's voting rights are to be limited pursuant to the bye-laws. If a shareholder fails to respond to our request for information or submits incomplete or inaccurate information in response to a request by us, we may, in our sole discretion, eliminate the shareholder's voting rights.

There are provisions in our bye-laws that may restrict the ability to transfer common shares and which may require shareholders to sell their common shares.

Our board of directors may decline to register a transfer of any common shares under some circumstances, including if they have reason to believe that any non-de minimis adverse tax, regulatory or legal consequences to us, any of our subsidiaries or any of our shareholders may occur as a result of such transfer. Our bye-laws also provide that if our board of directors determines that share ownership by a person may result in non-de minimis adverse tax, legal or regulatory consequences to us, any of our subsidiaries or any of our shareholders, then we have the option, but not the obligation, to require that shareholder to sell to us or to third parties to whom we assign the repurchase right for fair value the minimum number of common shares held by such person which is necessary to eliminate the non-de minimis adverse tax, legal or regulatory consequences.

Applicable insurance laws may make it difficult to effect a change of control of our company.

Before a person can acquire control of a U.S. insurance company, prior written approval must be obtained from the insurance commissioner of the state where the domestic insurer is domiciled. Prior to granting approval of an application to acquire control of a domestic insurer, the state insurance commissioner will consider such factors as the financial strength of the acquirer, the integrity and management of the acquirer's board of directors and executive officers, the acquirer's plans for the future operations of the domestic insurer and any anti-competitive results that may arise from the consummation of the acquisition of control. Generally, state statutes provide that control over a domestic insurer is presumed to exist if any person, directly or indirectly, owns, controls, holds with the power to vote, or holds proxies representing, 10% or more of the voting securities of the domestic insurer. Because a person acquiring 10% or more of our common shares would indirectly control the same percentage of the stock of the AXIS U.S. Subsidiaries, the insurance change of control laws of Connecticut, Illinois and New York would likely apply to such a transaction.

The Insurance Act in Bermuda requires that where the shares of a registered insurer or reinsurer, or the shares of its parent, are traded on a recognized stock exchange, and a person becomes a 10%, 20%, 33% and 50% shareholder controller of that insurer or reinsurer, that person shall, within 45 days, notify the Bermuda Monetary Authority in writing that he has become a controller. In addition, a person who is a shareholder controller of a class 4 insurer or reinsurer (such as AXIS Specialty Bermuda) whose shares or shares of its parent company are traded on a recognized stock exchange must serve the Bermuda Monetary Authority with a notice in writing that he has reduced or disposed of his holding in the insurer or reinsurer where the proportion of voting rights in the insurer or reinsurer held by him will have reached or has fallen below 10%, 20%, 33% or 50% not later than 45 days after such disposal. A shareholder controller refers to a person who (i) holds 10% or more of the shares carrying rights to vote at a shareholders' meeting of the registered insurer or reinsurer or its parent; (ii) is entitled to exercise 10% or more of the voting power at any shareholders meeting of the registered insurer or reinsurer or its parent; or (iii) is able to exercise significant influence over the management of the registered insurer or reinsurer or its parent by virtue of its entitlement to exercise, or control the exercise of, the voting at the shareholders' meeting. The Bermuda Monetary Authority may object to any person who has become a shareholder at a specified level where it appears that such person is not, or is no longer, a fit and proper person to be a shareholder of the Bermuda registered insurance or reinsurance company.

In addition, the Insurance Acts and Regulations in Ireland require that anyone acquiring or disposing of a direct or indirect holding in an Irish authorized insurance or reinsurance company (such as AXIS Specialty Europe or AXIS Re SE) that represents 10% or more of the capital or of the voting rights of such company or that makes it possible to exercise a significant influence over the management of such company, or anyone who proposes to decrease or increase that holding to specified levels, must first notify the Central Bank of Ireland ("CBI") of their intention to do so. They also require any Irish authorized insurance or reinsurance company that becomes aware of any acquisitions or disposals of its capital involving the specified levels to notify the CBI. The specified levels are 20%, 33% and 50% or such other level of ownership that results in the company becoming the acquirer's subsidiary within the meaning of article 20 of the European Communities (non-Life Insurance) Framework Regulations 1994.

The CBI has three months from the date of submission of a notification within which to oppose the proposed transaction if the CBI is not satisfied as to the suitability of the acquirer in view of the necessity "to ensure prudent and sound management of the insurance or reinsurance undertaking concerned." Any person owning 10% or more of the capital or voting rights or an amount that makes it possible to exercise a significant influence over the management of AXIS Capital would be considered to have a "qualifying holding" in AXIS Specialty Europe and AXIS Re SE.

In the U.K., the Prudential Regulation Authority ("PRA") and the Financial Conduct Authority ("FCA") regulate the acquisition of "control" of any U.K. Insurance companies and Lloyd's managing agents which are authorized under the Financial Services and Markets Act 2000 ("FSMA"). Any legal entity or individual that (together with any person with whom it or he is "acting in concert") directly or indirectly acquires 10% or more of the shares in a U.K. authorized insurance company or Lloyd's managing agent, or their parent company, or is entitled to exercise or control the exercise of 10% or more of the voting power in such authorized insurance company or Lloyd's managing agent or their parent company, would be considered to have acquired "control" for the purposes of the relevant legislation, as would a person who had significant influence over the management of such authorized insurance company or their parent company by virtue of his shareholding or voting power in either. A purchase of 10% or more of the ordinary shares of the Company would therefore be considered to have acquired "control" of AXIS Managing Agency Ltd. Under FSMA, any person proposing to acquire "control" over a U.K. authorized insurance company must give prior notification to the PRA of his intention to do so. The PRA, which will consult with the FCA, would then have 60 working days to consider that person's application to acquire "control" (although this 60 working day period can be extended by up to 30 additional working days in certain circumstances where the

regulators have questions relating to the application). Failure to make the relevant prior application could result in action being taken against AXIS Managing Agency Ltd. by the PRA.

A person who is already deemed to have "control" will require prior approval of the PRA if such person increases their level of "control" beyond certain percentages. These percentages are 20%, 30% and 50%. Similar requirements apply in relation to the acquisition of control of a U.K. authorized person which is an insurance intermediary (such as AXIS Underwriting Limited or Contessa Limited) except that the approval must be obtained from the FCA rather than the PRA and the threshold triggering the requirement for prior approval is 20% of the shares or voting power in the insurance intermediary or its parent company. The approval of the Council of Lloyd's is also required in relation to the change of control of a Lloyd's managing agent or member. Broadly, Lloyd's applies the same tests in relation to control as are set out in the FSMA (see above) and in practice coordinates its approval process with that of the PRA.

While our bye-laws limit the voting power of any shareholder to less than 9.5%, there can be no assurance that the applicable regulatory body would agree that a shareholder who owned 10% or more of our shares did not, because of the limitation on the voting power of such shares, control the applicable Insurance Subsidiary. These laws may discourage potential acquisition proposals and may delay, deter or prevent a change of control of the Company, including transactions that some or all of our shareholders might consider to be desirable.

Anti-takeover provisions in our bye-laws could impede an attempt to replace our directors or to effect a change in control, which could diminish the value of our common shares.

Our bye-laws contain provisions that may make it more difficult for shareholders to replace directors and could delay or prevent a change of control that a shareholder might consider favorable. These provisions include a staggered board of directors, limitations on the ability of shareholders to remove directors other than for cause, limitations on voting rights and restrictions on transfer of our common shares. These provisions may prevent a shareholder from receiving the benefit from any premium over the market price of our shares offered by a bidder in a potential takeover. Even in the absence of an attempt to effect a change in management or a takeover attempt, these provisions may adversely affect the prevailing market price of our shares if they are viewed as discouraging takeover attempts in the future.

Risks Related to Taxation

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

The Bermuda Minister of Finance, under the Exempted Undertakings Tax Protection Act 1966 of Bermuda, as amended, has given each of our Bermuda resident companies 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 our Bermuda resident companies or any of their respective operations, shares, debentures or other obligations until March 31, 2035. Given the limited duration of the Minister of Finance's assurance, we cannot be certain that we will not be subject to any Bermuda tax after March 31, 2035.

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

We intend to manage our business so that each of our non-U.S. companies, apart from our Lloyd's operations with U.S. effectively connected income, will operate in such a manner that none of these companies should be subject to U.S. tax (other than U.S. excise tax on insurance or reinsurance premiums attributable to insuring or reinsuring U.S. risks and U.S. withholding tax on some types of U.S. source investment income), because none of these companies should be treated as engaged in a trade or business within the U.S. However, because there is considerable uncertainty as to the activities that constitute being engaged in a trade or business within the U.S., we cannot be certain that the U.S. Internal Revenue Service will not contend successfully that any of our non-U.S. companies is/are engaged in a trade or business in the U.S. If any of our non-U.S. companies were considered to be engaged in a trade or business in the U.S., it could be subject to U.S. corporate income and additional branch profits taxes on the portion of its earnings effectively connected to such U.S. business. If this were to be the case, our results of operations could be materially adversely affected.

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

We intend to operate in such a manner so that none of our non-U.K. companies are resident in the U.K. for tax purposes and that none of our non-U.K. resident companies, other than AXIS Specialty Europe and AXIS Specialty U.S. Services, Inc., should have a permanent establishment in the U.K. Accordingly, we expect that none of our non-U.K. resident companies, other than AXIS Specialty Europe and AXIS Specialty U.S. Services, Inc., should be subject to U.K. tax. Nevertheless, because neither case law nor U.K. statutes conclusively define the activities that constitute trading in the U.K. through a permanent establishment, the U.K. tax authority might contend successfully that any of our non-U.K. companies, in addition to AXIS Specialty Europe and AXIS Specialty U.S. Services, Inc., is/are trading in the U.K. through a permanent establishment in the U.K. and therefore subject to U.K. tax.

In addition, there are circumstances in which companies that are neither resident in the U.K., nor entitled to the protection afforded by a double tax treaty between the U.K. and the jurisdiction in which they are resident, may be exposed to income tax in the U.K. (other than by deduction or withholding) on the profits of a trade carried on there even if that trade is not carried on through a permanent establishment. We intend to operate in such a manner that none of our companies will be subject to U.K. income tax in this respect.

If any of our non-U.K. resident companies were treated as being resident in the U.K. for U.K. corporation tax purposes, or if any of our non-U.K. companies, other than AXIS Specialty Europe or AXIS Specialty U.S. Services, Inc., were to be treated as carrying on a trade in the U.K., whether or not through a permanent establishment, our results of operations could be materially adversely affected.

The U.K. diverted profits tax ("DPT") is separate from U.K. corporation tax and is charged at a higher rate. It is an anti-avoidance measure aimed at protecting the U.K. tax base against the artificial diversion of profits that are being earned by activities carried out in the U.K. but which are not otherwise being taxed in the U.K., in particular as a result of arrangements between companies in the same multinational group. The U.K. network of double tax treaties does not offer protection from a DPT charge. In the event that the rules apply to certain arrangements, upfront payment of the U.K. tax authority's estimate of the deemed tax liability may be required. If any of our non-U.K. companies is liable to DPT, this could have a material adverse effect on our results.

Our U.K. operations may be affected by future changes in U.K. tax law.

AXIS Specialty Europe, AXIS Specialty U.S. Services, Inc. and our U.K. resident companies should be treated as taxable in the U.K. Any change in the basis or rate of U.K. corporation tax could materially adversely affect the operations of these companies.

Our operations may be adversely affected by a transfer pricing adjustment in computing taxable profits.

Any affiliated arrangements between contracting parties established in different jurisdictions are subject to transfer pricing regimes. Consequently, if any arrangement (including any reinsurance or financing arrangements) is found not to be on arm's length terms, an adjustment will be required to compute taxable profits as if the arrangement were on arm's length terms. Any transfer pricing adjustment could adversely impact the tax charge suffered by the relevant tax-paying company.

With effect from January 1, 2016, Bermuda has implemented country by country reporting ("CBCR") whereby multinational groups are required to report details of their operations and intra-group transactions in each jurisdiction. It is possible that our approach to transfer pricing may become subject to greater scrutiny from the tax authorities in the jurisdictions in which we operate, which may lead to transfer pricing audits in the future.

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

We intend to operate our non-Irish resident companies in such a manner so that none of our non-Irish resident companies should be resident in Ireland for tax purposes and that they should not be treated as carrying on a trade through a branch or agency in Ireland.

Accordingly, we expect that none of our non-Irish resident companies should be subject to Irish corporation tax. Nevertheless, since the determination as to whether a company is resident in Ireland is a question of fact to be determined based on a number of different factors and since neither case law nor Irish legislation conclusively defines the activities that constitute trading in Ireland through a branch or agency, the Irish Revenue Commissioners might contend successfully that any of our non-Irish companies is resident in or otherwise trading through a branch or agency in Ireland and therefore subject to Irish corporation tax. If this were the case, our results of operations could be materially adversely affected.

If corporate tax rates in Ireland increase, our results of operations could be materially adversely affected.

Trading income derived from the insurance and reinsurance business carried on in Ireland by AXIS Specialty Europe and AXIS Re SE is generally taxed in Ireland at a rate of 12.5%. Over the past number of years, various E.U. member states have, from time to time, called for harmonization of the corporate tax base within the E.U. Ireland, along with other member states, has consistently resisted any movement towards standardized corporate tax rates or tax base in the E.U. The Government of Ireland has also made clear its commitment to retain the 12.5% rate of corporation tax. If, however, tax laws in Ireland change so as to increase the general corporation tax rate in Ireland, our results of operations could be materially adversely affected.

If investments held by AXIS Specialty Europe SE or AXIS Re SE are determined not to be integral to the insurance and reinsurance business carried on by those companies, additional Irish tax could be imposed and our business and financial results could be materially adversely affected.

Based on administrative practice, taxable income derived from investments made by AXIS Specialty Europe and AXIS Re SE is generally taxed in Ireland at the rate of 12.5% on the grounds that such investments either form part of the permanent capital required by regulatory authorities, or are otherwise integral to the insurance and reinsurance business carried on by those companies. AXIS Specialty Europe and AXIS Re SE intend to operate in such a manner so that the level of investments held by such companies does not exceed the amount that is integral to the insurance and reinsurance business carried on by AXIS Specialty Europe and AXIS Re SE. If, however, investment income earned by AXIS Specialty Europe or AXIS Re SE is deemed to be non-trading income, Irish corporation tax could apply to such investment income at a higher rate (currently 25%) instead of the general 12.5% rate, and our results of operations could be materially adversely affected.

Changes in U.S. federal income tax law could materially adversely affect us.

The 2017 Tax Cuts and Jobs Act ("U.S. Tax Reform"), which included certain provisions that were intended to eliminate some perceived tax advantages of companies (including insurance and reinsurance companies) that have legal domiciles outside the U.S., but have certain U.S. connections, significantly altered existing U.S. federal domestic and international income tax law. Among other things, the U.S. Tax Reform reduced the U.S. corporate tax rate, made extensive changes to the international tax system, eliminated the corporate alternative minimum tax system, modified the loss reserve discounting methodology, and changed the proration percentage on tax-favored investments. Furthermore, under the U.S. Tax Reform, certain U.S. corporations that make deductible payments, including reinsurance premiums, to foreign affiliates in excess of certain amounts will now be required to pay a base erosion minimum tax. Currently, there are only proposed regulations regarding the application of the base erosion minimum tax, and new regulations or pronouncements interpreting or clarifying U.S. federal income tax laws relating to insurance and reinsurance companies may be forthcoming. We cannot be certain if, when, or in what form, such regulations or pronouncements may be provided, and whether such guidance will have a retroactive effect.

Changes in tax laws resulting from the recommendations of the Organization for Economic Corporation and Development ("OECD") could materially adversely affect us.

The OECD has launched a global initiative among member and non-member countries on measures to limit harmful tax competition, known as the "Base Erosion and Profit Shifting" ("BEPS") project and, in 2015, published reports containing a suite of recommended actions. These measures are largely directed at counteracting the effects of low-tax and preferential tax regimes in countries around the world, including expanding the definition of permanent establishment and updating the rules for attributing profits to permanent establishments, tightening transfer pricing rules to ensure that outcomes are in line with value creation, neutralizing the effect of hybrid financial instruments and limiting the deductibility of interest costs for tax purposes and preventing double tax treaty abuse. We expect many countries to change their tax laws in response to the BEPS project, and several countries have already changed or proposed changes to their tax laws. In particular, the E.U. has sought to harmonize the response of member states to the BEPS reports via the Anti-Tax Avoidance Directive ("the ATAD"). The ATAD requires all E.U. member states to apply certain specified anti-avoidance measures, including a controlled foreign companies regime and limitations on interest deductions. Changes to tax laws and additional reporting requirements could increase the tax burden and the complexity and cost of tax compliance.

On May 31, 2019, the OECD published a "Programme of Work", designed to address the tax challenges created by an increasingly digitalized economy. This was divided into two pillars. Pillar One addresses the broader challenge of a digitalized economy and focuses on the allocation of group profits among taxing jurisdictions, based on a market-based concept rather than the historical "permanent establishment" concept. Pillar Two addresses the remaining BEPS risk of profit shifting to entities in low tax jurisdictions, by introducing a global minimum tax and a proposed tax on base eroding payments, which would operate through a denial of a deduction or the imposition of source-based taxation (including withholding tax) on certain payments. The OECD would like for this proposal to be agreed by the participating members by the end of 2020, and for it to be incorporated into local jurisdiction tax laws and treaties shortly thereafter. To date, the proposal has been drawn broadly and could have a material adverse impact on our operations and results.

Legislation enacted in Bermuda in response to the European Union's review of harmful tax competition could adversely affect our operations and financial condition.

During 2017, the Economic and Financial Affairs Council released a list of non-cooperative jurisdictions for tax purposes. The stated aim of this list, and accompanying report, was to promote good governance worldwide in order to maximize efforts to prevent tax fraud and tax evasion. Bermuda was not on the list of non-cooperative jurisdictions, but did feature in the report (along with approximately 40 other jurisdictions) as having committed to address concerns relating to economic substance by December 31, 2018. In accordance with that commitment, Bermuda has enacted legislation that requires certain entities in Bermuda engaged in "relevant activities" to maintain a substantial economic presence in Bermuda and to satisfy economic substance requirements. The list of "relevant activities" includes carrying on as a business any one or more of: banking, insurance, fund management, financing, leasing, headquarters, shipping, distribution and service center, intellectual property and holding entities. Any entity that must satisfy economic substance requirements but fails to do so could face automatic disclosure to competent authorities, in each jurisdiction in which its owners or beneficial owners is incorporated, formed, registered or resident, 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 may be struck off as a registered entity in Bermuda.

At present, the impact of these new economic substance requirements is unclear, and it is not possible to accurately predict the effect of these requirements on us and our business. The requirements may increase the complexity and costs of carrying on our business and could adversely affect our operations and financial condition.

ITEM 1B. UNRESOLVED STAFF COMMENTS

At December 31, 2019, we had no outstanding, unresolved comments from the SEC staff.

ITEM 2. PROPERTIES

We maintain office facilities in Bermuda, the U.S., Europe, Singapore, Canada, and the Middle East. We own the property in which our office is located in Dublin, Ireland, and we lease office space in the other countries. We renew and enter into new leases in the ordinary course of business as required. Our global headquarters is located at 92 Pitts Bay Road, AXIS House, Pembroke HM 08, Bermuda. We believe that our office space is sufficient for us to conduct our operations for the foreseeable future.

ITEM 3. LEGAL PROCEEDINGS

From time to time, the Company is subject to routine legal proceedings, including arbitrations, arising in the ordinary course of business. These legal proceedings generally relate to claims asserted by or against the Company in the ordinary course of its insurance or reinsurance operations. Estimated amounts payable related to these proceedings are included in reserve for losses and loss expenses in the Company's consolidated balance sheets.

The Company is not party to any material legal proceedings arising outside the ordinary course of business.

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

Our common shares are listed on the New York Stock Exchange under the symbol "AXS".

On February 21, 2020, the number of holders of record of our common shares was 16. This figure does not represent the actual number of beneficial owners of our common shares because shares are frequently held in "street name" by securities dealers and others for the benefit of beneficial owners who may vote the shares.

We have a history of paying quarterly cash dividends. While we expect to continue paying comparable cash dividends in the foreseeable future, the declaration and payment of future dividends will be at the discretion of our Board of Directors and will depend on many factors, including our net income, financial condition, business needs, capital and surplus requirements of our operating subsidiaries and regulatory and contractual restrictions, including those set forth in our credit facilities. Refer to Item 7 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources' for additional information.

Issuer Purchases of Equity Securities

Common Shares

The following table shows information regarding the number of common shares repurchased:

Period	Total number of shares purchased ^{(a) (b)}	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum number (or approximate dollar value) of shares that may yet be purchased under the plans or programs ^(b)
October 1-31, 2019	9	\$65.26	—	—
November 1-30, 2019	1	\$59.33	—	—
December 1-31, 2019	1	\$58.97	—	—
Total	11		—	—

(a) In thousands.

(b) Shares are repurchased from employees to satisfy withholding tax liabilities that arise on the vesting of share-settled restricted stock units.

ITEM 6. SELECTED FINANCIAL DATA

The following table shows selected consolidated financial information for the last five years. This data should be read in conjunction with Item 7 'Management's Discussion and Analysis of Financial Condition and Results of Operations' and Item 8 'Consolidated Financial Statements and the accompanying notes'.

	At and for the year ended December 31,				
	2019	2018	2017	2016	2015
(in thousands, except per share amounts)					
Selected Statements of Operations Data:					
Gross premiums written	\$ 6,898,858	\$ 6,910,065	\$ 5,556,273	\$ 4,970,208	\$ 4,603,730
Net premiums earned	4,587,178	4,791,495	4,148,760	3,705,625	3,686,417
Net investment income	478,572	438,507	400,805	353,335	305,336
Net investment gains (losses)	91,233	(150,218)	28,226	(60,525)	(138,491)
Net losses and loss expenses	3,044,798	3,190,287	3,287,772	2,204,197	2,176,199
Acquisition costs	1,024,582	968,835	823,591	746,876	718,112
General and administrative expenses	634,831	627,389	579,428	602,717	596,821
Interest expense and financing costs	68,107	67,432	54,811	51,360	50,963
Preferred share dividends	41,112	42,625	46,810	46,597	40,069
Net income (loss) available (attributable) to common shareholders ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾	\$ 282,361	\$ 396	\$ (415,779)	\$ 465,462	\$ 601,562
Per share data:					
Earnings (loss) per common share	\$ 3.37	\$ —	\$ (4.94)	\$ 5.13	\$ 6.10
Earnings (loss) per diluted common share	\$ 3.34	\$ —	\$ (4.94)	\$ 5.08	\$ 6.04
Cash dividends declared per common share	\$ 1.61	\$ 1.57	\$ 1.53	\$ 1.43	\$ 1.22
Weighted average common shares outstanding	83,894	83,501	84,108	90,772	98,609
Weighted average diluted common shares outstanding	84,473	84,007	84,108	91,547	99,629
Operating Ratios:⁽⁶⁾					
Net losses and loss expenses ratio	66.4%	66.6%	79.2%	59.5%	59.0%
Acquisition cost ratio	22.3%	20.2%	19.9%	20.2%	19.5%
General and administrative expense ratio	13.9%	13.1%	14.0%	16.2%	16.2%
Combined ratio	<u>102.6%</u>	<u>99.9%</u>	<u>113.1%</u>	<u>95.9%</u>	<u>94.7%</u>
Selected Balance Sheet Data:					
Investments	\$ 14,302,375	\$ 13,155,560	\$ 14,784,210	\$ 13,459,507	\$ 13,386,118
Cash and cash equivalents	1,576,457	1,830,020	1,363,786	1,241,507	1,174,751
Reinsurance recoverable on unpaid and paid losses and loss expenses	4,205,551	3,781,902	3,338,840	2,334,922	2,096,104
Total assets	25,604,054	24,132,566	24,760,177	20,813,691	19,981,891
Reserve for losses and loss expenses	12,752,081	12,280,769	12,997,553	9,697,827	9,646,285
Unearned premiums	3,626,246	3,635,758	3,641,399	2,969,498	2,760,889
Debt	1,808,157	1,341,961	1,376,529	992,950	991,825
Total shareholders' equity	\$ 5,544,008	\$ 5,030,071	\$ 5,341,264	\$ 6,272,370	\$ 5,866,882
Book value per common share ⁽⁷⁾⁽⁸⁾	\$ 56.80	\$ 50.91	\$ 54.91	\$ 59.54	\$ 55.32
Book value per diluted common share ⁽⁷⁾⁽⁸⁾	\$ 55.79	\$ 49.93	\$ 53.88	\$ 58.27	\$ 54.08
Common shares outstanding ⁽⁸⁾	83,959	83,586	83,161	86,441	94,708
Diluted common shares outstanding ⁽⁸⁾	85,489	85,229	84,745	88,317	96,883

- (1) During 2019 and 2018, the Company recognized reorganization expenses of \$37 million and \$67 million, respectively, related to its transformation program which was launched in 2017. This program encompasses the integration of Novae Group plc ("Novae") which commenced in the fourth quarter of 2017, the realignment of our accident and health business, together with other initiatives designed to increase our efficiency and enhance our profitability while delivering a customer-centric operating model. During 2017, the Company recognized transaction and reorganization expenses of \$27 million which included transaction costs incurred in connection with the acquisition of Novae, such as due diligence, legal, accounting, investment banking fees and expenses, as well as integration expenses related to the integration of Novae into the Company's operations and compensation-related costs associated with the termination of certain employees. During 2015, the Company implemented a number of profitability enhancement initiatives which resulted in recognition of transaction and reorganization expenses of \$46 million and general and administrative expenses of \$5 million.
- (2) During 2017, the Company recognized a tax expense of \$42 million due to the revaluation of net deferred tax assets pursuant to the U.S. Tax Reform.
- (3) During 2019, 2018 and 2017, the Company recognized amortization of value of business acquired ("VOBA") of \$27 million, \$172 million and \$50 million, respectively, related to the acquisition of Novae. Refer to Item 8, Note 4 to the Consolidated Financial Statements '*Goodwill and Intangible Assets*' for further details.
- (4) During 2015, the Company accepted a request from PartnerRe Ltd., a Bermuda exempted company ("PartnerRe") to terminate the Agreement and Plan of Amalgamation (the "Amalgamation Agreement") with the Company. PartnerRe paid the Company a termination fee of \$280 million.
- (5) During 2015, the Company early adopted the Accounting Standard Update ("ASU") 2015-02 "Consolidation (Topic 810) *Amendments to the Consolidation Analysis*", issued by the Financial Accounting Standards Board. The adoption of this accounting guidance resulted in the Company concluding that it was no longer required to consolidate the results of operations and the financial position of AXIS Ventures Reinsurance Limited ("Ventures Re"). The Company adopted this accounting guidance using the modified retrospective approach and ceased to consolidate Ventures Re effective January 1, 2015.
- (6) Operating ratios are calculated by dividing the respective operating expenses by net premiums earned.
- (7) Book value per common share and book value per diluted common share are calculated by dividing total common shareholders' equity by the number of common shares and diluted common share outstanding, respectively.
- (8) Calculations and share amounts at December 31, 2015 include 1,358,380 additional shares delivered to the Company in January 2016 under the Company's Accelerated Share Repurchase ("ASR") agreement entered into on August 17, 2015.

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

The following is a discussion and analysis of our results of operations for the years ended December 31, 2019 and 2018 and our financial condition at December 31, 2019 and 2018. This should be read in conjunction with Item 8 '*Consolidated Financial Statements and Supplementary Data*' of this report. Tabular dollars are in thousands, except per share amounts. Amounts in tables may not reconcile due to rounding differences.

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2019 FINANCIAL HIGHLIGHTS

2019 Consolidated Results of Operations

- Net income available to common shareholders of \$282.4 million, or \$3.37 per common share and \$3.34 per diluted common share
- Operating income⁽¹⁾ of \$213 million, or \$2.52 per diluted common share⁽¹⁾
- Gross premiums written of \$6.9 billion
- Net premiums written of \$4.5 billion
- Net premiums earned of \$4.6 billion
- Estimated pre-tax catastrophe and weather-related losses, net of reinsurance and reinstatement premiums, of \$336 million (Insurance: \$84 million; Reinsurance: \$252 million), or 7.5 points on the current accident year loss ratio, primarily related to Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, Australian Wildfires, and other weather-related events
- Net favorable prior year reserve development of \$79 million
- Underwriting income⁽²⁾ of \$29 million and combined ratio of 102.6%
- Net investment income of \$479 million
- Net investment gains of \$91 million
- Amortization of value of business acquired ("VOBA") of \$27 million
- Reorganization expenses of \$37 million
- Foreign exchange gains of \$12 million

2019 Consolidated Financial Condition

- Total cash and investments of \$15.9 billion; fixed maturities, cash and short-term securities comprise 89% of total cash and investments and have an average credit rating of AA-
- Total assets of \$25.6 billion
- Reserve for losses and loss expenses of \$12.8 billion and reinsurance recoverable on unpaid and paid losses and loss expenses of \$4.2 billion
- Debt of \$1.8 billion and a debt to total capital ratio⁽³⁾ of 24.6%
- Common shares repurchased were 0.2 million for \$10 million
- Common shareholders' equity of \$4.8 billion; book value per diluted common share of \$55.79

(1) Operating income (loss) and operating income (loss) per diluted common share are non-GAAP financial measures as defined in Item 10(e) of SEC Regulation S-K. The reconciliations to the most comparable GAAP financial measures, net income (loss) and earnings (loss) per diluted common share, respectively, are provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations' and a discussion of the rationale for the presentation of these items is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Non GAAP Financial Measures'.

(2) Consolidated underwriting income (loss) is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to net income (loss), the most comparable GAAP financial measure, is provided in 'Management's Discussion and Analysis of Financial Condition – Executive Summary – Results of Operations' and a discussion of the rationale for its presentation is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Non GAAP Financial Measures'.

(3) The debt to total capital ratio is calculated by dividing debt by total capital. Total capital represents the sum of total shareholders' equity and debt.

EXECUTIVE SUMMARY

Business Overview

AXIS Capital, through its operating subsidiaries, is a global provider of specialty lines insurance and treaty reinsurance with operations in Bermuda, the U.S., Europe, Singapore, Canada and the Middle East. Our underwriting operations are organized around our global underwriting platforms, AXIS Insurance and AXIS Re.

We provide our clients and distribution partners with a broad range of risk transfer products and services, and meaningful capacity, backed by significant financial strength. We manage our portfolio holistically, aiming to construct the optimum portfolio of risks, consistent with our risk appetite and the development of our franchise. We nurture an ethical, entrepreneurial and disciplined culture that promotes outstanding client service, intelligent risk taking and the achievement of superior risk-adjusted returns for our shareholders. We believe that the achievement of our objectives will position us as a global leader in specialty risks. The execution of our business strategy in 2019 included the following:

- increasing our relevance in a select number of attractive specialty lines insurance and treaty reinsurance markets, and continuing the implementation of a more focused distribution strategy;
- continuing to grow a leadership position in the areas of our business with strong potential for profitable growth including U.S. excess and surplus lines, North America professional lines and Lloyd's specialty insurance business;
- continuing to re-balance our portfolio towards less volatile lines of business that carry attractive rates;
- continuing to improve the effectiveness and efficiency of our operating platforms and processes;
- investing in data and technology capabilities, and tools to empower our underwriters and enhance the service we provide to our customers;
- broadening risk-funding sources and the development of vehicles that utilize third-party capital; and
- growing our corporate citizenship program to give back to our communities and help contribute to a more sustainable future.

For discussion of our results of operations and changes in financial condition for year ended December 31, 2018 compared to year ended December 31, 2017 refer to [Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#) in our 2018 Form 10-K which was filed with the SEC on February 26, 2019 and such discussions are incorporated herein by reference.

Recent Developments

We continue to closely monitor developments related to the coronavirus (COVID-19) outbreak to assess any potential impact on our business. We currently do not anticipate that this outbreak will have a material impact on our results of operations, financial condition or liquidity, however, due to the evolving and highly uncertain nature of this event, it currently is not possible to provide an estimate of potential insurance or reinsurance exposure or the indirect effects the outbreak may have on our results of operations, financial condition or liquidity.

Outlook

We are committed to being a leader in specialty insurance and global reinsurance markets; areas where we have depth of talent and expertise. As a mid-sized player that is both sophisticated and agile, we believe we are well-positioned to succeed in a rapidly evolving industry. Across our business, we continue to emphasize underwriting discipline to actively manage our portfolio. In 2020, we are focused on further growing our most attractive lines to drive an improved risk-adjusted return for our shareholders.

In the insurance market, rates and terms and conditions across most lines generally continued to see accelerating improvement. We are well-positioned in the markets that are seeing the strongest pricing actions, including Lloyd's, U.S. E&S and Professional Lines, and we expect more business will meet our return adequacy hurdles in the coming year. We continue to pursue opportunities for profitable growth in the businesses where we have expertise and existing leadership positions.

In the reinsurance market, we are seeing variability in pricing across specific lines and geographies. In quota share business, we benefit from improvements in the primary markets. In excess of loss treaties, we observe pricing generally responding to recent loss trends. This remains a competitive market, and at the 1/1/20 renewals, our aggregate estimated premium on renewed treaties was lower than aggregate premiums on expiring treaties. Looking forward, we expect meaningful rate increases at the Japanese Catastrophe renewal period (April), and we will be pushing for increases in Florida Catastrophe (June), and US Casualty business (April-October) in 2020. We expect our reinsurance premium volume in these renewals will be dependent on our view of achievable rate adequacy.

Non-GAAP Financial Measures

We present our results of operations in the way we believe will be most meaningful and useful to investors, analysts, rating agencies and others who use our financial information to evaluate our performance. Some of the measurements we use are considered non-GAAP financial measures under SEC rules and regulations. In this Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A"), we present underwriting-related general and administrative expenses, consolidated underwriting income (loss), operating income (loss) (*in total and on a per share basis*), operating return on average common equity ("operating ROACE"), amounts presented on a constant currency basis, pre-tax total return on cash and investments excluding foreign exchange movements, ex-PGAAP operating income (loss) (*in total and on a per share basis*) and ex-PGAAP operating ROACE which are non-GAAP financial measures as defined in Item 10(e) of SEC Regulation S-K. We believe that these non-GAAP financial measures, which may be defined and calculated differently by other companies, better explain and enhance the understanding of our results of operations. However, these measures should not be viewed as a substitute for those determined in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP").

Underwriting-Related General and Administrative Expenses

Underwriting-related general and administrative expenses include those general and administrative expenses that are incremental and/or directly attributable to our individual underwriting operations. While this measure is presented in Item 8, Note 3 to the Consolidated Financial Statements '*Segment Information*', it is considered a non-GAAP financial measure when presented elsewhere on a consolidated basis.

Corporate expenses include holding company costs necessary to support our worldwide insurance and reinsurance operations and costs associated with operating as a publicly-traded company. As these costs are not incremental and/or directly attributable to our individual underwriting operations, these costs are excluded from underwriting-related general and administrative expenses, and therefore, consolidated underwriting income (loss). General and administrative expenses, the most comparable GAAP financial measure to underwriting-related general and administrative expenses, also includes corporate expenses.

The reconciliation of underwriting-related general and administrative expenses to general and administrative expenses, the most comparable GAAP financial measure, is presented in '*Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations*'.

Consolidated Underwriting Income (Loss)

Consolidated underwriting income (loss) is a pre-tax measure of underwriting profitability that takes into account net premiums earned and other insurance related income (losses) as revenues and net losses and loss expenses, acquisition costs and underwriting-related general and administrative expenses as expenses. While this measure is presented in Item 8, Note 3

to the Consolidated Financial Statements '*Segment Information*', it is considered a non-GAAP financial measure when presented elsewhere on a consolidated basis.

We evaluate our underwriting results separately from the performance of our investment portfolio. As such, we believe it is appropriate to exclude net investment income and net investment gains (losses) from our underwriting profitability measure.

Foreign exchange losses (gains) in our consolidated statements of operations primarily relate to the impact of foreign exchange rate movements on our net insurance-related liabilities. However, we manage our investment portfolio in such a way that unrealized and realized foreign exchange losses (gains) on our investment portfolio generally offset a large portion of the foreign exchange losses (gains) arising from our underwriting portfolio. As a result, we believe that foreign exchange losses (gains) are not a meaningful contributor to our underwriting performance, therefore, foreign exchange losses (gains) are excluded from consolidated underwriting income (loss).

Interest expense and financing costs primarily relate to interest payable on our debt. As these expenses are not incremental and/or directly attributable to our individual underwriting operations, these expenses are excluded from underwriting-related general and administrative expenses, and therefore, consolidated underwriting income (loss).

Transaction and reorganization expenses are primarily driven by business decisions, the nature and timing of which are not related to the underwriting process, therefore, these expenses are excluded from consolidated underwriting income (loss).

Amortization of intangible assets including VOBA arose from business decisions, the nature and timing of which are not related to the underwriting process, therefore, these expenses are excluded from consolidated underwriting income (loss).

Bargain purchase gain, recognized on the acquisition of Compagnie Belge d'Assurances Aviation NV/SA ("Aviabel"), reflects the excess of the fair value of the net identifiable assets acquired over the fair value of consideration transferred and is not indicative of future revenues, therefore, this revenue is excluded from consolidated underwriting income (loss).

We believe that presentation of underwriting-related general and administrative expenses and consolidated underwriting income (loss) provides investors with an enhanced understanding of our results of operations, by highlighting the underlying pre-tax profitability of our underwriting activities. The reconciliation of consolidated underwriting income (loss) to net income (loss), the most comparable GAAP financial measure, is presented in '*Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations*'.

Operating Income (Loss)

Operating income (loss) represents after-tax operational results exclusive of net investment gains (losses), foreign exchange losses (gains), transaction and reorganization expenses, interest in income (loss) of equity method investments, revaluation of net deferred tax asset and bargain purchase gain.

Although the investment of premiums to generate income and investment gains (losses) is an integral part of our operations, the determination to realize investment gains (losses) is independent of the underwriting process and is heavily influenced by the availability of market opportunities. Furthermore, many users believe that the timing of the realization of investment gains (losses) is somewhat opportunistic for many companies.

Foreign exchange losses (gains) in our consolidated statements of operations primarily relate to the impact of foreign exchange rate movements on net insurance-related liabilities. In addition, we recognize unrealized foreign exchange losses (gains) on our equity securities and foreign exchange losses (gains) realized on the sale of our available for sale investments and equity securities in net investment gains (losses). We also recognize unrealized foreign exchange losses (gains) on our available for sale investments in other comprehensive income (loss). These unrealized foreign exchange losses (gains) generally offset a large portion of the foreign exchange losses (gains) reported in net income (loss) available (attributable) to common shareholders, thereby minimizing the impact of foreign exchange rate movements on total shareholders' equity. As a result, the foreign exchange losses (gains) in our consolidated statements of operations in isolation are not a fair representation of the performance of our business.

Transaction and reorganization expenses are primarily driven by business decisions, the nature and timing of which are not related to the underwriting process, therefore, these expenses are excluded from operating income (loss).

Interest in income (loss) of equity method investments is primarily driven by business decisions, the nature and timing of which are not related to the underwriting process, therefore, this income (loss) is excluded from operating income (loss).

The revaluation of net deferred tax asset represents a tax expense recognized in the fourth quarter of 2017 related to the revaluation of our net deferred tax asset, due to the reduction in the U.S. corporate income tax rate from 35% to 21% enacted as part of the Tax Cuts and Jobs Act of 2017 ("U.S. Tax Reform"). The nature and timing of the tax expense associated with the U.S. Tax Reform is not related to the underwriting process, therefore, this expense is excluded from operating income (loss).

Bargain purchase gain, recognized on the acquisition of Compagnie Belge d'Assurances Aviation NV/SA ("Aviabel"), reflects the excess of the fair value of the net identifiable assets acquired over the fair value of consideration transferred and is not indicative of future revenues, therefore, this revenue is excluded from operating income (loss).

Certain users of our financial statements evaluate performance exclusive of after-tax net investment gains (losses), foreign exchange losses (gains), transaction and reorganization expenses, interest in income (loss) of equity method investments, revaluation of net deferred tax asset and bargain purchase gain to understand the profitability of recurring sources of income.

We believe that showing net income (loss) available (attributable) to common shareholders exclusive of after-tax net investment gains (losses), foreign exchange losses (gains), transaction and reorganization expenses, interest in income (loss) of equity method investments, revaluation of net deferred tax asset and bargain purchase gain reflects the underlying fundamentals of our business. In addition, we believe that this presentation enables investors and other users of our financial information to analyze performance in a manner similar to how our management analyzes the underlying business performance. We also believe this measure follows industry practice and, therefore, facilitates comparison of our performance with our peer group. We believe that equity analysts and certain rating agencies that follow us, and the insurance industry as a whole, generally exclude these items from their analyses for the same reasons. The reconciliation of operating income (loss) to net income (loss), the most comparable GAAP financial measure, is presented in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations'*.

We also present operating income (loss) per diluted common share and operating ROACE, which are derived from the operating income (loss) measure and are reconciled to the most comparable GAAP financial measures, earnings (loss) per diluted common share and return on average common equity ("ROACE"), respectively, in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations'*.

Constant Currency Basis

We present gross premiums written, net premiums written and net premiums earned on a constant currency basis in this MD&A. The amounts presented on a constant currency basis are calculated by applying the average foreign exchange rate from the current year to the prior year amounts. We believe this presentation enables investors and other users of our financial information to analyze growth in gross premiums written, net premiums written and net premiums earned on a constant basis. The reconciliation to gross premiums written, net premiums written and net premiums earned on a GAAP basis is presented in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Underwriting Results – Consolidated'*.

Pre-Tax Total Return on Cash and Investments excluding Foreign Exchange Movements

Pre-tax total return on cash and investments excluding foreign exchange movements measures net investment income (loss), net investments gains (losses), interest in income (loss) of equity method investments, and change in unrealized investment gains (losses) generated by average cash and investment balances. The reconciliation of pre-tax total return on cash and investments excluding foreign exchange movements to pre-tax total return on cash and investments, the most comparable GAAP financial measure, is presented in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Net Investment Income and Net Investment Gains (Losses)'*. We believe this presentation enables investors and other users of our financial information to analyze the performance of our investment portfolio.

Ex-PGAAP Operating Income (Loss)

Ex-PGAAP operating income (loss) represents operating income (loss) exclusive of amortization of VOBA and intangible assets, net of tax and amortization of acquisition costs, net of tax associated with Novae's balance sheet at October 2, 2017 (the "closing date" or "acquisition date"). The reconciliation of ex-PGAAP operating income (loss) to net income (loss) available (attributable) to common shareholders, the most comparable GAAP financial measure, is presented in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations'*.

We also present ex-PGAAP operating income (loss) per diluted common share and ex-PGAAP operating ROACE, which are derived from the ex-PGAAP operating income (loss) measure and are reconciled to the most comparable GAAP financial measures, earnings (loss) per diluted common share and ROACE, respectively, in *'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations'*.

We believe the presentation of ex-PGAAP operating income (loss), ex-PGAAP operating income (loss) per diluted common share and ex-PGAAP operating ROACE enables investors and other users of our financial information to better analyze the performance of our business.

Acquisition of Novae

On October 2, 2017, we acquired Novae. At the acquisition date, we identified VOBA, which represents the present value of the expected underwriting profit within policies that were in-force at the closing date of the transaction. In addition, the allocation of the acquisition price to the assets acquired and liabilities assumed based on estimated fair values at the acquisition date, resulted in the write-off of the deferred acquisition cost asset on Novae's balance sheet at the acquisition date as the value of policies in-force on that date are considered within VOBA. Consequently, underwriting income (loss) in 2019 and 2018 included the recognition of premiums attributable to Novae's balance sheet at the acquisition date without the recognition of the associated acquisition costs.

Results of Operations

Years ended December 31,	2019	% Change	2018	% Change	2017
Underwriting revenues:					
Net premiums earned	\$ 4,587,178	(4%)	\$ 4,791,495	15%	\$ 4,148,760
Other insurance related income (losses)	16,444	55%	10,622	nm	(1,240)
Underwriting expenses:					
Net losses and loss expenses	(3,044,798)	(5%)	(3,190,287)	(3%)	(3,287,772)
Acquisition costs	(1,024,582)	6%	(968,835)	18%	(823,591)
Underwriting-related general and administrative expenses ⁽¹⁾	(505,735)	(3%)	(519,168)	16%	(449,483)
Underwriting income (loss)	\$ 28,507		\$ 123,827		\$ (413,326)
Net investment income	478,572	9%	438,507	9%	400,805
Net investment gains (losses)	91,233	nm	(150,218)	nm	28,226
Corporate expenses ⁽¹⁾	(129,096)	19%	(108,221)	(17%)	(129,945)
Other (expenses) revenues, net	(56,066)	47%	(38,267)	(80%)	(189,548)
Transaction and reorganization expenses	(37,384)	(44%)	(66,940)	nm	(26,718)
Amortization of value of business acquired	(26,722)	(84%)	(172,332)	nm	(50,104)
Amortization of intangible assets	(11,597)	(16%)	(13,814)	nm	(2,543)
Bargain purchase gain	—	—%	—	nm	15,044
Income (loss) before income taxes and interest in income (loss) of equity method investments	337,447		12,542		(368,109)
Income tax (expense) benefit	(23,692)	nm	29,486	nm	7,542
Interest in income (loss) of equity method investments	9,718	nm	993	nm	(8,402)
Net income (loss)	323,473		43,021		(368,969)
Preferred share dividends	(41,112)	(4%)	(42,625)	(9%)	(46,810)
Net income (loss) available (attributable) to common shareholders	\$ 282,361	nm	\$ 396	nm	\$ (415,779)
Net investment (gains) losses ⁽²⁾	(91,233)	nm	150,218	nm	(28,226)
Foreign exchange losses (gains) ⁽³⁾	(12,041)	(59%)	(29,165)	nm	134,737
Transaction and reorganization expenses ⁽⁴⁾	37,384	(44%)	66,940	nm	26,718
Interest in (income) loss of equity method investments ⁽⁵⁾	(9,718)	nm	(993)	nm	8,402
Revaluation of net deferred tax asset ⁽⁶⁾	—	—%	—	nm	41,629
Bargain purchase gain ⁽⁶⁾	—	—%	—	nm	(15,044)
Income tax expense (benefit)	6,656	nm	(26,697)	nm	(8,594)
Operating income (loss)⁽⁷⁾	\$ 213,409	33%	\$ 160,699	nm	\$ (256,157)

nm – not meaningful

- Underwriting-related general and administrative expenses is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to general and administrative expenses, the most comparable GAAP financial measure, also included corporate expenses of \$129 million, \$108 million and \$130 million for the years ended December 31, 2019, 2018 and 2017, respectively. Refer to 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Other (Expenses) Revenues, Net' for further details. Refer also to 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Non-GAAP Financial Measures' for further details.
- Tax cost (benefit) of \$12 million, \$(12) million and \$2 million for the years ended December 31, 2019, 2018 and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions, after consideration of other relevant factors including the ability to utilize capital losses.
- Tax cost (benefit) of \$1 million, \$(4) million and \$(8) million for the years ended December 31, 2019, 2018 and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions, after consideration of other relevant factors including the tax status of specific foreign exchange transactions.
- Tax (benefit) of \$(7) million, \$(11) million and \$(3) million for the years ended December 31, 2019, 2018 and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions.
- Tax cost (benefit) of \$nil, \$0.3 million and \$nil for the years ended December 31, 2019, 2018 and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions.
- Tax impact is \$nil.
- Operating income (loss) is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliations to net income (loss), the most comparable GAAP financial measure is presented in the table above, and a discussion of the rationale for its presentation is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Non-GAAP Financial Measures'.

Non-GAAP Financial Measures

We also present operating income (loss) per diluted common share and operating return on average common equity ("operating ROACE"), which are derived from the operating income (loss) measure and can be reconciled to the most comparable GAAP financial measures as follows:

Year ended December 31,	2019	2018	2017
Net income (loss) available (attributable) to common shareholders	\$ 282,361	\$ 396	\$ (415,779)
Operating income (loss)	\$ 213,409	\$ 160,699	\$ (256,157)
Weighted average diluted common shares outstanding ⁽¹⁾	84,473	84,007	84,108
Earnings (loss) per diluted common share	\$ 3.34	\$ —	\$ (4.94)
Operating income (loss) per diluted common share ⁽²⁾	\$ 2.52	\$ 1.91	\$ (3.05)
Average common shareholders' equity	\$ 4,512,040	\$ 4,410,668	\$ 4,856,280
Return on average common equity ⁽³⁾	6.3%	—%	(8.6%)
Operating return on average common equity ⁽⁴⁾	4.7%	3.6%	(5.3%)

- (1) Refer to Item 8, Note 13 to the Consolidated Financial Statements 'Earnings Per Common Share' for further details.
- (2) Operating income (loss) per diluted common share is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to earnings (loss) per diluted common share, the most comparable GAAP financial measure is presented in the table above, and a discussion of the rationale for its presentation is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Non-GAAP Financial Measures'.
- (3) Return on average common equity ("ROACE") is calculated by dividing net income (loss) available (attributable) to common shareholders for the year by the average common shareholders' equity determined using the common shareholders' equity balances at the beginning and end of the year.
- (4) Operating ROACE, a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K, is calculated by dividing operating income (loss) for the year by the average common shareholders' equity determined using the common shareholders' equity balances at the beginning and end of the year. The reconciliation to ROACE, the most comparable GAAP financial measure is presented in the table above and a discussion of the rationale for its presentation is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Non-GAAP Financial Measures'.

Ex-PGAAP Operating Income

In addition, we present ex-PGAAP operating income (loss), ex-PGAAP operating income (loss) per diluted common share and ex-PGAAP operating ROACE which are derived from the operating income (loss) measure and can be reconciled to the most comparable GAAP financial measures as follows:

Years ended December 31,	2019	% Change	2018	% Change	2017
Net income (loss) available (attributable) to common shareholders	\$ 282,361	nm	\$ 396	nm	\$ (415,779)
Net investment (gains) losses	(91,233)	nm	150,218	nm	(28,226)
Foreign exchange losses (gains)	(12,041)	(59%)	(29,165)	nm	134,737
Transaction and reorganization expenses	37,384	(44%)	66,940	nm	26,718
Interest in (income) loss of equity method investments	(9,718)	nm	(993)	nm	8,402
Revaluation of net deferred tax asset	—	—%	—	nm	41,629
Bargain purchase gain	—	—%	—	nm	(15,044)
Income tax expense (benefit)	\$ 6,656	nm	(26,697)	nm	(8,594)
Operating income (loss)	\$ 213,409	33%	\$ 160,699	nm	\$ (256,157)
Amortization of VOBA and intangible assets ⁽³⁾	37,939	(79%)	184,531	nm	52,647
Amortization of acquisition costs ⁽⁴⁾	(12,207)	(90%)	(125,467)	nm	(32,646)
Income tax (benefit)	\$ (4,888)	(56%)	(11,222)	nm	(3,800)
Ex-PGAAP operating income (loss)⁽¹⁾	\$ 234,253	12%	\$ 208,541	nm	\$ (239,956)
Earnings (loss) per diluted common share	\$ 3.34		\$ —		\$ (4.94)
Net investment (gains) losses	(1.08)		1.79		(0.34)
Foreign exchange losses (gains)	(0.14)		(0.35)		1.60
Transaction and reorganization expenses	0.44		0.80		0.32
Interest in (income) loss of equity method investments	(0.12)		(0.01)		0.10
Revaluation of net deferred tax asset	—		—		0.49
Bargain purchase gain	—		—		(0.18)
Income tax expense (benefit)	0.08		(0.32)		(0.10)
Operating income (loss) per diluted common share	2.52		1.91		(3.05)
Amortization of VOBA and intangible assets ⁽³⁾	0.45		2.20		0.63
Amortization of acquisition cost ⁽⁴⁾	(0.14)		(1.49)		(0.39)
Income tax (benefit)	(0.06)		(0.14)		\$ (0.04)
Ex-PGAAP operating income (loss) per diluted common share⁽¹⁾	\$ 2.77		\$ 2.48		\$ (2.85)
Weighted average diluted common shares outstanding	84,473		84,007		84,108
Average common shareholders' equity	\$ 4,512,040		\$ 4,410,668		\$ 4,856,280
Return on average common equity	6.3%		—%		(8.6%)
Operating return on average common equity	4.7%		3.6%		(5.3%)
Ex-PGAAP operating return on average common equity ⁽¹⁾⁽²⁾	5.2%		4.7%		(4.9%)

nm – not meaningful

- (1) Ex-PGAAP operating income (loss), ex-PGAAP operating income (loss) per diluted common share and ex-PGAAP operating ROACE are non-GAAP financial measures as defined in Item 10(e) of SEC Regulation S-K. The reconciliations to the most comparable GAAP financial measures, net income (loss) available (attributable) to common shareholders, earnings (loss) per diluted common share, and ROACE, respectively, are presented in the table above, and a discussion of the rationale for the presentation of these items is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Non-GAAP Financial Measures'.
- (2) Ex-PGAAP operating ROACE is calculated by dividing ex-PGAAP operating income (loss) for the year by the average common shareholders' equity determined using the common shareholders' equity balances at the beginning and end of the year.
- (3) Tax (benefit) of \$(7) million, \$(35) million and \$(10) million for the years ended December 31, 2019, 2018, and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions.
- (4) Tax cost of \$2 million, \$24 million and \$6 million for the years ended December 31, 2019, 2018, and 2017, respectively. Tax impact is estimated by applying the statutory rates of applicable jurisdictions.

Underwriting Results

Consolidated underwriting income⁽¹⁾ is a pre-tax measure of underwriting profitability that takes into account net premiums earned and other insurance related income (loss) as revenues and net losses and loss expenses, acquisition costs and underwriting-related general and administrative expenses as expenses.

2019 versus 2018: Underwriting income in 2019 was \$29 million, a decrease of \$95 million compared to underwriting income of \$124 million in 2018. The decrease in underwriting income was primarily driven by a decrease in net premiums earned and a decrease in net favorable prior year reserve development, together with an increase in the acquisition cost ratio and an increase in the general and administrative expense ratio, partially offset by a decrease in catastrophe and weather-related losses and a decrease in the current accident year loss ratio excluding catastrophe and weather-related losses.

The insurance segment underwriting income in 2019 was \$44 million, a decrease of \$33 million compared to underwriting income of \$77 million in 2018. The decrease in underwriting income was primarily driven by a decrease in net premiums earned and a decrease in net favorable prior year reserve development, together with an increase in the acquisition cost ratio and an increase in the general and administrative expense ratio, partially offset by a decrease in catastrophe and weather-related losses and a decrease in the current accident year loss ratio excluding catastrophe and weather-related losses.

The reinsurance segment underwriting loss in 2019 was \$16 million compared to underwriting income of \$47 million in 2018. The underwriting loss in 2019 was primarily driven by a decrease in net favorable prior year reserve development and a decrease in net premiums earned, together with an increase in catastrophe and weather-related losses, partially offset by a decrease in the current accident year loss ratio excluding catastrophe and weather-related losses and a decrease in the general and administrative expense ratio.

Net Investment Income

Net investment income was \$479 million in 2019 compared to \$439 million in 2018, an increase of \$40 million, primarily attributable to an increase in income from fixed maturities due to the increase in yields and a larger allocation of the portfolio to fixed maturities, together with a realized gain associated with the sale of a privately held investment, partially offset by lower returns from CLO-equities.

Net Investment Gains (Losses)

Net investment gains were \$91 million in 2019 compared to net investment losses of \$150 million in 2018.

Net investment gains in 2019 mainly reflected net unrealized gains on equity securities and net realized gains on the sale of U.S. government and agency RMBS securities.

Net investment losses in 2018 mainly reflected net realized losses on the sale of agency RMBS, U.S. government and corporate debt securities, and net unrealized losses on equity securities.

Other than temporary impairment ("OTTI") charges were \$7 million and \$10 million in 2019 and 2018, respectively.

Other Expenses (Revenues), Net

Corporate expenses were \$129 million in 2019 compared to \$108 million in 2018. The increase was primarily related to ongoing investments in information technology and digital capabilities, personnel costs and professional fees, partially offset by an increase in the allocation of corporate costs to the insurance and reinsurance segments.

The foreign exchange gains of \$12 million in 2019 were mainly driven by the impact of the strengthening of the U.S. dollar on the re-measurement of net insurance-related liabilities denominated in euro, partially offset by the impact of the weakening of the U.S. dollar on the re-measurement of net insurance-related liabilities in pound sterling.

The foreign exchange gains of \$29 million in 2018 were mainly driven by the impact of the strengthening of the U.S. dollar on the re-measurement of net insurance-related liabilities mainly denominated in pound sterling and euro.

(1) Consolidated underwriting income (loss) is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to net income (loss), the most comparable GAAP financial measure, is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operation'.

Interest expense and financing costs were \$68 million in 2019 compared to \$67 million in 2018. The increase of \$1 million was due to the issuance of 3.900% senior unsecured notes ("3.900% Senior Notes") on June 19, 2019, and the issuance of 4.900% fixed-rate reset junior subordinated notes ("Junior Subordinated Notes") on December 10, 2019, partially offset by the repayment of the 2.65% senior unsecured notes ("2.65% Senior Notes") on April 1, 2019 and the repayment of the Dekania Notes on November 15, 2018.

The financial results for 2019 resulted in a tax expense of \$24 million compared to a tax benefit of \$29 million in 2018.

The tax expense of \$24 million in 2019 was principally due to the generation of pre-tax income in our U.S. and European operations, partially offset by pre-tax losses in our U.K. operations.

The tax benefit of \$29 million in 2018 was principally due to the generation of pre-tax losses in our U.K. and European operations, partially offset by income in our U.S. operations.

Reorganization Expenses

Reorganization expenses were \$37 million in 2019 compared to \$67 million in 2018, related to the transformation program which was launched in 2017. This program encompasses the integration of Novae which commenced in the fourth quarter of 2017, the realignment of our accident and health business, together with other initiatives designed to increase efficiency and enhance profitability, while delivering a customer-centric operating model. These expenses were not included in operating income.

Amortization of Value of Business Acquired

On October 2, 2017, we acquired Novae, a diversified property and casualty insurance and reinsurance business which operates through Syndicate 2007 at Lloyd's. The acquisition of Novae was undertaken to accelerate the growth strategy of our international insurance business, and to significantly scale up its capabilities to enable us to even better serve our clients and brokers. At the acquisition date, we identified VOBA, which represents the present value of the expected underwriting profit within policies that were in-force at the closing date of the transaction, of \$257 million.

VOBA is amortized over its economic useful life and this expense is included in amortization of value of business acquired in the consolidated statement of operations.

Interest in Income (Loss) of Equity Method Investments

Interest in income (loss) of equity method investments represents our share of income (loss) related to investments where we have significant influence over the operating and financial policies of the investee.

Interest in income of equity method investments was \$10 million in 2019 compared to \$1 million in 2018.

Financial Measures

We believe that the following financial indicators are important in evaluating performance and measuring the overall growth in value generated for common shareholders:

Year ended and at December 31,	2019	2018	2017
Return on average common equity	6.3%	—%	(8.6%)
Operating return on average common equity	4.7%	3.6%	(5.3%)
Ex-PGAAP operating return on average common equity	5.2%	4.7%	(4.9%)
Book value per diluted common share ⁽¹⁾	\$ 55.79	\$ 49.93	\$ 53.88
Cash dividends declared per common share	\$ 1.61	\$ 1.57	\$ 1.53
Increase (decrease) in book value per diluted common share adjusted for dividends	\$ 7.47	\$ (2.38)	\$ (2.86)

(1) Book value per diluted common share represents common shareholders' equity divided by the number of diluted common share outstanding determined using the treasury stock method. Cash settled restricted stock units are excluded

Return on Average Common Equity

Our objective is to generate superior returns on capital that appropriately reward common shareholders for the risks we assume and to grow revenue only when we expect the returns will meet or exceed our requirements. We recognize that the nature of underwriting cycles and the frequency or severity of large loss events in any one year may challenge the ability to achieve a profitability target in any specific period.

ROACE reflects the impact of net income (loss) available (attributable) to common shareholders including net investment gains (losses), foreign exchange losses (gains), reorganization expenses, and interest in income (loss) of equity method investments.

ROACE increased in 2019 compared to 2018, primarily attributable to the investment gains in the year, and a decrease in amortization of VOBA associated with the acquisition of Novae, together with an increase in net investment income and a decrease in reorganization expenses, partially offset by a decrease in underwriting income, an increase in income tax expense, an increase in corporate expenses, and a decrease in foreign exchange gains.

Operating ROACE excludes the impact of net investment gains (losses), foreign exchange losses (gains), reorganization expenses, and interest in income (loss) of equity method investments.

Operating ROACE increased in 2019 compared to 2018, primarily attributable to a decrease in amortization of VOBA associated with the acquisition of Novae, together with an increase in net investment income, partially offset by a decrease in underwriting income, an increase in income tax expense, and an increase in corporate expenses.

Ex-PGAAP operating ROACE excludes the impact of amortization of VOBA and intangible assets, net of tax, and amortization of acquisition costs, net of tax, associated with Novae's balance sheet at October 2, 2017. Ex-PGAAP operating ROACE for the years ending 2019 and 2018 was 5.2% and 4.7%, respectively.

Book Value per Diluted Common Share

We consider book value per diluted common share to be an appropriate measure of returns to common shareholders, as we believe growth in book value on a diluted basis will ultimately translate into appreciation of our stock price.

In 2019, book value per diluted common share increased by 12%, primarily driven by net income generated and net unrealized investment gains reported in other comprehensive income, partially offset by common dividends declared. The net unrealized investment gains in 2019 reflected a decrease in interest rates and a tightening of credit spreads which positively impacted the market values of fixed maturities.

In 2018, book value per diluted common share decreased by 7%, primarily driven by an increase in net unrealized investment losses reported in other comprehensive income and common dividends declared. The net unrealized investment losses in 2018 reflected a widening of credit spreads which negatively impacted the market values of fixed maturities.

Cash Dividends Declared per Common Share

We believe in returning excess capital to shareholders by way of dividends. Accordingly, dividend policy is an integral part of the value we create for shareholders. Cumulatively, strong earnings have permitted our Board of Directors to approve sixteen successive annual increases in quarterly common share dividends.

Book Value per Diluted Common Share Adjusted for Dividends

Taken together, we believe that growth in book value per diluted common share and common share dividends declared represent the total value created for common shareholders. As companies in the insurance industry have differing dividend payout policies, we believe that investors use the book value per diluted common share adjusted for dividends metric to measure comparable performance across the industry.

In 2019, book value per diluted common share adjusted for dividends increased by \$7.47 or 15%, due to net income generated and net unrealized investment gains reported in other comprehensive income.

In 2018, book value per diluted common share adjusted for dividends decreased by \$2.38, or 4%, due to net unrealized investment losses reported in other comprehensive income.

UNDERWRITING RESULTS – CONSOLIDATED

Underwriting income is a pre-tax measure of underwriting profitability that takes into account net premiums earned and other insurance related income (loss) as revenues and net losses and loss expenses, acquisition costs and underwriting-related general and administrative expenses as expenses. Underwriting results were as follows:

Years ended December 31,	2019	% Change	2018	% Change	2017
Revenues:					
Gross premiums written	\$ 6,898,858	—%	\$ 6,910,065	24%	\$ 5,556,273
Net premiums written	4,489,615	(4%)	4,658,962	16%	4,027,143
Net premiums earned	4,587,178	(4%)	4,791,495	15%	4,148,760
Other insurance related income (losses)	16,444	55%	10,622	nm	(1,240)
Expenses:					
Current accident year net losses and loss expenses	(3,123,698)		(3,389,949)		(3,487,826)
Prior year reserve development	78,900		199,662		200,054
Acquisition costs	(1,024,582)		(968,835)		(823,591)
Underwriting-related general and administrative expenses ⁽¹⁾	(505,735)		(519,168)		(449,483)
Underwriting income (loss)⁽²⁾	\$ 28,507	nm	\$ 123,827	nm	\$ (413,326)
General and administrative expenses⁽¹⁾	\$ 634,831		\$ 627,389		\$ 579,428
Income (loss) before income taxes and interest in income (loss) of equity method investments⁽²⁾	\$ 337,447		\$ 12,542		\$ (368,109)

nm – not meaningful

- (1) Underwriting-related general and administrative expenses is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to general and administrative expenses, the most comparable GAAP financial measure, is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operations'.
- (2) Consolidated underwriting income (loss) is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to net income (loss), the most comparable GAAP financial measure, is provided in 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Executive Summary – Results of Operation'.

Underwriting Revenues

Gross and net premiums written by segment were as follows:

Years ended December 31,	Gross premiums written				
	2019	% Change	2018	% Change	2017
Insurance	\$ 3,675,931	(3%)	\$ 3,797,592	35%	\$ 2,814,918
Reinsurance	3,222,927	4%	3,112,473	14%	2,741,355
Total	\$ 6,898,858	nm	\$ 6,910,065	24%	\$ 5,556,273
% ceded					
Insurance	40%	1 pts	39%	2 pts	37%
Reinsurance	29%	4 pts	25%	7 pts	18%
Total	35%	2 pts	33%	5 pts	28%
	Net premiums written				
	2019	% Change	2018	% Change	2017
Insurance	\$ 2,209,155	(5%)	\$ 2,324,747	31%	\$ 1,775,825
Reinsurance	2,280,460	(2%)	2,334,215	4%	2,251,318
Total	\$ 4,489,615	(4%)	\$ 4,658,962	16%	\$ 4,027,143

Gross Premiums Written:

2019 versus 2018: Gross premiums written in 2019 decreased by \$11 million or 0.2% (increased \$88 million or 1% on a constant currency basis⁽¹⁾) compared to 2018 due to a decrease in the insurance segment, partially offset by an increase in the reinsurance segment.

The decrease in the insurance segment's gross premiums written of \$122 million or 3% (\$75 million, or 2% on a constant currency basis) was primarily attributable to decreases in property, accident and health, and credit and political risk lines, partially offset by increases in liability, professional lines, and marine lines.

The increase in the reinsurance segment's gross premiums written of \$110 million or 4% (\$163 million, or 5% on a constant currency basis) was primarily attributable to increases in catastrophe, liability, accident and health, and marine and other lines, partially offset by decreases in motor, credit & surety, and property lines.

Ceded Premiums Written:

Ceded premiums written in 2019 were \$2.4 billion, or 35% of gross premiums written, compared to \$2.3 billion, or 33%, in 2018 due to an increase in the reinsurance segment, partially offset by a decrease in the insurance segment.

The increase in the reinsurance segment ceded premiums written of \$164 million or 21% was primarily driven by increases in catastrophe, liability, credit and surety, and accident and health lines, partially offset by decreases in property, and agriculture lines.

The decrease in the insurance segment ceded premiums written of \$6 million or 0.4% was attributable to property lines, partially offset by an increase in liability lines.

(1) Amounts presented on a constant currency basis are non-GAAP financial measures as defined in Item 10(e) of SEC Regulation S-K. The constant currency basis is calculated by applying the average foreign exchange rate from the current year to prior year amounts. The reconciliations to the most comparable GAAP financial measures are provided in 'Management's Discussion and Analysis of Financial Condition – Executive Summary – Results of Operations.'

Reinsurance Agreement with Alturas Re Ltd ("Alturas")

In January 2019, we obtained protection for the insurance and reinsurance segments through a reinsurance agreement with Alturas. In connection with the reinsurance agreement, Alturas issued notes on December 19, 2018 to unrelated investors in an amount equal to the full \$130 million of coverage provided under the reinsurance agreement covering a one-year period. At the time of the agreement, we concluded that we do not have a variable interest in Alturas as the variability in results is expected to be absorbed entirely by the investors in Alturas. Accordingly, the results of Alturas are not included in the consolidated financial statements. The premium ceded to Alturas for the year ended December 31, 2019 was \$78 million.

Reinsurance Agreement with Alturas

In July 2019, we obtained protection for the reinsurance segment through a reinsurance agreement with Alturas. In connection with the reinsurance agreement, Alturas issued notes on June 28, 2019 to unrelated investors in an amount equal to the full \$39 million of coverage provided under the reinsurance agreement covering a one-year period. At the time of the agreement, we concluded that we do not have a variable interest in Alturas as the variability in results is expected to be absorbed entirely by the investors in Alturas. Accordingly, the results of Alturas are not included in the consolidated financial statements. The premium ceded to Alturas for the year ended December 31, 2019 was \$10 million.

2019 Reinsurance Agreement with Northshore Limited ("Northshore")

In June 2019, we obtained catastrophe protection for the insurance and reinsurance segments through a reinsurance agreement with Northshore. In connection with the reinsurance agreement, Northshore issued notes to unrelated investors in an amount equal to the full \$165 million of coverage provided under the reinsurance agreement covering a four-year period. At the time of the agreement, we concluded that we do not have a variable interest in the entity, as the variability in results is expected to be absorbed entirely by the investors in Northshore. Accordingly, the results of Northshore are not included in the consolidated financial statements. The premium ceded to Northshore for the year ended December 31, 2019 was \$13 million.

2018 Reinsurance Agreement with Northshore Limited

In July 2018, we obtained catastrophe protection for the insurance and reinsurance segments through a reinsurance agreement with Northshore. In connection with the reinsurance agreement, Northshore issued notes to unrelated investors in an amount equal to the full \$200 million of coverage provided under the reinsurance agreement covering a three-year period. At the time of the agreement, we concluded that we do not have a variable interest in the entity, as the variability in results is expected to be absorbed entirely by the investors in Northshore. Accordingly, the results of Northshore are not included in the consolidated financial statements. The premium ceded to Northshore for the year ended December 31, 2019 was \$16 million. The premium ceded to Northshore for the year ended December 31, 2018 was \$17 million.

Net Premiums Earned:

Net premiums earned by segment were as follows:

Years ended December 31,	2019		2018		2017		% Change	
							2018 to 2019	2017 to 2018
Insurance	\$ 2,190,084	48%	\$ 2,362,606	49%	\$ 1,816,438	44%	(7%)	30%
Reinsurance	2,397,094	52%	2,428,889	51%	2,332,322	56%	(1%)	4%
Total	\$ 4,587,178	100%	\$ 4,791,495	100%	\$ 4,148,760	100%	(4%)	15%

Changes in net premiums earned reflect period to period changes in net premiums written and business mix, together with normal variability in premium earning patterns.

2019 versus 2018: Net premiums earned in 2019 decreased by \$204 million or 4% (\$156 million or 3% on a constant currency basis) compared to 2018 due to decreases in the insurance and reinsurance segments.

Net premiums earned in the insurance segment in 2019 decreased by \$173 million or 7% (\$138 million or 6% on a constant currency basis) compared to 2018 primarily attributable to decreases in property, accident and health, discontinued lines - Novae, marine, and aviation lines, partially offset by increases in professional lines, and liability lines.

Net premiums earned in the reinsurance segment in 2019 decreased by \$32 million or 1% (\$18 million or 1% on a constant currency basis) compared to 2018 attributable to decreases in credit & surety, motor lines, partially offset by increases in marine and other, accident and health lines.

Other Insurance Related Income (Loss):

Other insurance related income in 2019 was \$16 million compared to other insurance related income in 2018 of \$11 million, an increase of \$6 million, primarily related to the reinsurance segment.

Underwriting Expenses

The components of the combined ratio were as follows:

Years ended December 31,	2019	% Point Change	2018	% Point Change	2017
Current accident year loss ratio excluding catastrophe and weather-related losses	60.6%	(1.1)	61.7%	(2.0)	63.7%
Catastrophe and weather-related losses ratio	7.5%	(1.5)	9.0%	(11.4)	20.4%
Current accident year loss ratio	68.1%	(2.6)	70.7%	(13.4)	84.1%
Prior year reserve development ratio	(1.7%)	2.4	(4.1%)	0.8	(4.9%)
Net losses and loss expenses ratio	66.4%	(0.2)	66.6%	(12.6)	79.2%
Acquisition cost ratio	22.3%	2.1	20.2%	0.3	19.9%
General and administrative expense ratio ⁽¹⁾	13.9%	0.8	13.1%	(0.9)	14.0%
Combined ratio	102.6%	2.7	99.9%	(13.2)	113.1%

(1) The general and administration expense ratio included corporate expenses not allocated to underwriting segments of 2.8%, 2.3% and 3.1% for 2019, 2018 and 2017, respectively. Refer to 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Other Expenses (Revenues), Net' for further details.

Current Accident Year Loss Ratio:

2019 versus 2018: The current accident year loss ratio decreased to 68.1% in 2019 from 70.7% in 2018. The decrease in the current accident year loss ratio was impacted by a lower level of catastrophe and weather-related losses. During 2019, we incurred pre-tax catastrophe and weather-related losses, net of reinstatement premiums, of \$336 million or 7.5 points primarily attributable to Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, Australia Wildfires and other weather-related events. Comparatively, in 2018, we incurred pre-tax catastrophe and weather-related losses, net of reinstatement premiums, of \$430 million or 9.0 points primarily attributable to California Wildfires, Hurricanes Michael and Florence, Typhoon Jebi and other weather-related events.

After adjusting for the impact of the catastrophe and weather-related losses, the current accident year loss ratio decreased to 60.6% in 2019 from 61.7% in 2018. The decrease in the current accident year loss ratio after adjusting for the impact of the catastrophe and weather-related losses was principally due to the impact of improved pricing over loss trends and changes in business mix.

Estimates for Significant Catastrophe Events:

At December 31, 2019, net reserve for losses and loss expenses included estimated amounts for numerous catastrophe events. We caution that the magnitude and/or complexity of losses arising from these events, in particular Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, and the Australia Wildfires which occurred in 2019 together with Hurricanes Michael and Florence, California Wildfires and Typhoon Jebi which occurred in 2018 as well as Hurricanes Harvey, Irma and Maria and the California Wildfires which occurred in 2017 inherently increase the level of uncertainty and, therefore, the level of management judgment involved in arriving at estimated net reserve for losses and loss expenses. As a result, actual losses for these events may ultimately differ materially from current estimates.

Estimated net reserve for losses and loss expenses in relation to the catastrophe events described above were derived from ground-up assessments of in-force contracts and treaties providing coverage in the affected regions. These assessments take into account the latest information available from clients, brokers and loss adjusters. In addition, we consider industry insured loss estimates, market share analyses and catastrophe modeling analyses, when appropriate. Estimates are subject to change as additional loss data becomes available.

We continue to monitor paid and incurred loss development for catastrophe events of prior years and update estimates of ultimate losses accordingly.

Prior Year Reserve Development:

Net favorable prior year reserve development arises from changes to estimates of losses and loss expenses related to loss events that occurred in previous calendar years. Net prior year reserve development by segment was as follows:

Years ended December 31,	2019	2018	2017
Insurance	\$ 53,302	\$ 92,806	\$ 60,459
Reinsurance	25,598	106,856	139,595
Total	\$ 78,900	\$ 199,662	\$ 200,054

Overview

Short-tail business

Short-tail business includes the underlying exposures in the property and other, marine, and aviation reserve classes in the insurance segment, and the underlying exposures in the property and other reserve class in the reinsurance segment.

These reserve classes recognized net adverse prior year reserve development of \$85 million in 2019 including net adverse prior year reserve development of \$133 million recognized by the reinsurance property and other reserve class, partially offset by net favorable prior year reserve development of \$33 million contributed by the insurance marine reserve class and net favorable prior year reserve development of \$11 million contributed by the insurance property and other reserve class.

The net adverse prior year reserve development of \$133 million recognized by the reinsurance property and other reserve class was due to an increase in loss estimates attributable to Hurricanes Irma and Michael consistent with industry trends, an increase in loss estimates attributable Typhoon Jebi consistent with updated industry insured loss estimates, and reserve strengthening within the U.S. regional and commercial proportional property books of business and the European proportional property book of business.

These reserve classes contributed net favorable prior year reserve development of \$86 million in 2018 reflecting overall better than expected loss emergence related to the 2017 catastrophe events.

Medium-tail business

Medium-tail business consists primarily of insurance and reinsurance professional lines reserve classes, insurance credit and political risk reserve class and reinsurance credit and surety reserve class.

Insurance professional lines reserve class recorded net favorable prior year reserve development of \$12 million and \$32 million in 2019 and 2018, respectively, reflecting generally favorable experience on older accident years as we continued to transition to more experience based actuarial methods.

Reinsurance professional lines reserve class recorded net favorable prior year reserve development of \$21 million in 2018 reflecting generally favorable experience on older accident years as we continued to transition to more experience based actuarial methods.

Insurance credit and political risk reserve class recorded net favorable prior year reserve development of \$19 million in 2019 reflecting generally better than expected loss emergence.

Reinsurance credit and surety reserve class recorded net favorable prior year reserve development of \$53 million and \$33 million in 2019 and 2018, respectively, reflecting generally better than expected loss emergence.

Long-tail business

Long-tail business consists primarily of insurance and reinsurance liability reserve classes and reinsurance motor reserve class.

Insurance liability reserve class recognized net adverse prior year reserve development of \$25 million and \$22 million in 2019 and 2018, respectively. The net adverse prior year reserve development in 2019 was primarily related to reserve strengthening within the U.S. excess casualty and U.S. primary casualty books of business. The net adverse prior year reserve development in 2018 was primarily related to reserve strengthening within the U.S. excess casualty book of business.

Reinsurance liability reserve class recognized net favorable prior year reserve development of \$31 million and \$23 million in 2019 and 2018, respectively. The net favorable prior year reserve development in 2019 and 2018 was due to progressively increased weight given by management to experience based indications on older accident years.

Reinsurance motor reserve class recognized net favorable prior year reserve development of \$71 million and \$23 million in 2019 and 2018, respectively. The net favorable prior year reserve development in 2019 was impacted by the increase in the Ogden discount rate and changes in related actuarial assumptions. The Ogden Rate which is used to calculate lump sum awards in U.K. bodily injury cases, changed from minus 0.75% to minus 0.25%, effective August 5, 2019. The net favorable prior year reserve development in 2018 was primarily attributable to non proportional treaty business on older accident years.

We caution that conditions and trends that impacted the development of reserve for losses and loss expenses in the past may not recur in the future.

The following tables map lines of business to reserve classes and the expected claim tails:

Insurance segment	Reserve class and tail					
	Property and other	Marine	Aviation	Credit and political risk	Professional lines	Liability
	Short	Short	Short/Medium	Medium	Medium	Long
Reported lines of business						
Property	X					
Marine		X				
Terrorism	X					
Aviation			X			
Credit and political risk				X		
Professional lines					X	
Liability						X
Accident and health	X					
Discontinued lines - Novae	X				X	X

Reinsurance segment	Reserve class and tail				
	Property and other	Credit and surety	Professional lines	Motor	Liability
	Short	Medium	Medium	Long	Long
Reported lines of business					
Catastrophe		X			
Property	X				
Credit and surety		X			
Professional lines			X		
Motor				X	
Liability					X
Engineering		X			
Agriculture		X			
Marine and other		X			
Accident and health		X			
Discontinued lines - Novae		X		X	X

The following sections provide further details on prior year reserve development by segment, reserving class and accident year.

Insurance Segment:

Years ended December 31,	2019	2018	2017
Property and other	\$ 11,042	\$ 64,781	\$ 11,815
Marine	33,260	17,913	28,206
Aviation	3,741	(2,938)	1,895
Credit and political risk	18,810	3,609	70
Professional lines	11,721	31,687	26,248
Liability	(25,272)	(22,246)	(7,775)
Total	\$ 53,302	\$ 92,806	\$ 60,459

In 2019, we recognized \$53 million of net favorable prior year reserve development, the principal components of which were:

- \$33 million of net favorable prior year reserve development on marine business primarily due to better than expected loss emergence related to the 2015 through 2017 accident years.
- \$19 million of net favorable prior year reserve development on credit and political risk business primarily due to better than expected loss emergence related to recent accident years.
- \$12 million of net favorable prior year reserve development on professional lines business reflecting generally favorable experience on older accident years as we continued to transition to more experience based actuarial methods.
- \$11 million of net favorable prior year reserve development on property and other business primarily due to overall better than expected loss emergence related to the 2017 catastrophe events and SuperStorm Sandy, partially offset by reserve strengthening within the international book of business, mainly related to the 2018 accident year.
- \$25 million of net adverse prior year reserve development on liability business primarily due to reserve strengthening within the U.S. excess casualty and U.S. primary casualty books of business mainly driven by the higher frequency and severity of auto claims and the higher frequency of general liability claims, mainly related to the 2015 and 2017 accident years.

In 2018, we recognized \$93 million of net favorable prior year reserve development, the principal components of which were:

- \$65 million of net favorable prior year reserve development on property and other business primarily due to overall better than expected loss emergence related to the 2017 catastrophe events.
- \$32 million of net favorable prior year reserve development on professional lines business primarily due to better than expected loss experience, particularly related to the 2014 and 2015 accident years.
- \$18 million of net favorable prior year reserve development on marine business primarily due to better than expected loss emergence on more recent accident years.
- \$22 million of net adverse prior year reserve development on liability business primarily due to reserve strengthening within the U.S. excess casualty book of business mainly driven by the higher frequency of large auto and general liability claims mainly related to the 2015 accident year.

Reinsurance Segment:

Years ended December 31,	2019	2018	2017
Property and other	\$ (133,448)	\$ 6,012	\$ 18,564
Credit and surety	53,223	33,497	32,791
Professional lines	3,668	21,310	44,164
Motor	70,872	22,932	1,155
Liability	31,283	23,105	42,921
Total	\$ 25,598	\$ 106,856	\$ 139,595

In 2019, we recognized \$26 million of net favorable prior year reserve development, the principal components of which were:

- \$71 million of net favorable prior year reserve development on motor business primarily due to the impact of the increase in the Ogden Rate and changes in related actuarial assumptions, on several accident years.
- \$53 million of net favorable prior year reserve development on credit and surety business primarily due to generally better than expected loss emergence, mainly related to accident years 2015 through 2017.
- \$31 million of net favorable prior year reserve development on liability business due to increased weight given by management to experience based indications on older accident years.
- \$133 million of net adverse prior year reserve development on property and other business primarily due to an increase in loss estimates attributable to Hurricanes Irma and Michael consistent with industry trends, an increase in loss estimates attributable to Typhoon Jebi consistent with updated industry insured loss estimates, and reserve strengthening within the U.S. regional and commercial proportional property books of business and the European proportional property book of business.

In 2018, we recognized \$107 million of net favorable prior year reserve development, the principal components of which were:

- \$33 million of net favorable prior year reserve development on credit and surety business primarily due to generally better than expected loss emergence, mainly related to accident years 2013 and 2014.
- \$23 million of net favorable prior year reserve development on motor business primarily due to non proportional treaty business related to older accident years.
- \$23 million of net favorable prior year reserve development on liability business primarily due to increased weight given by management to experience based indications on older accident years.
- \$21 million of net favorable prior year reserve development on professional lines business reflecting the generally favorable experience on older accident years as we continued to transition to more experience based actuarial methods.

Acquisition Cost Ratio:

The increase in the acquisition cost ratio to 22.3% in 2019 from 20.2% in 2018 was principally related to an increase in the insurance segment, largely associated with the acquisition of Novae.

General and Administrative Expense Ratio:

The increase in general and administrative expense ratio to 13.9% in 2019 from 13.1% in 2018 was mainly driven by a decrease in net premiums earned, an increase in information technology costs and professional fees, partially offset by an increase in fees associated with arrangements with strategic capital partners.

RESULTS BY SEGMENT

Insurance Segment

Results for the insurance segment were as follows:

Year ended December 31,	2019	% Change	2018	% Change	2017
Revenues:					
Gross premiums written	\$ 3,675,931	(3%)	\$ 3,797,592	35%	\$ 2,814,918
Net premiums written	2,209,155	(5%)	2,324,747	31%	1,775,825
Net premiums earned	2,190,084	(7%)	2,362,606	30%	1,816,438
Other insurance related income	2,858	(17)%	3,460	18%	2,944
Expenses:					
Current accident year net losses and loss expenses	(1,331,981)		(1,587,129)		(1,525,886)
Prior year reserve development	53,302		92,806		60,459
Acquisition costs	(468,281)		(399,193)		(270,229)
General and administrative expenses	(401,963)		(395,252)		(325,368)
Underwriting income (loss)	\$ 44,019	(43%)	\$ 77,298	nm	\$ (241,642)
		% Point Change		% Point Change	
Ratios:					
Current accident year loss ratio excluding catastrophe and weather-related losses	57.0%	(1.5)	58.5%	(2.8)	61.3%
Catastrophe and weather-related losses ratio	3.8%	(4.9)	8.7%	(14.0)	22.7%
Current accident year loss ratio	60.8%	(6.4)	67.2%	(16.8)	84.0%
Prior year reserve development ratio	(2.4%)	1.6	(4.0%)	(0.7)	(3.3%)
Net losses and loss expenses ratio	58.4%	(4.8)	63.2%	(17.5)	80.7%
Acquisition cost ratio	21.4%	4.5	16.9%	2.0	14.9%
General and administrative expense ratio	18.3%	1.5	16.8%	(1.1)	17.9%
Combined ratio	98.1%	1.2	96.9%	(16.6)	113.5%

nm – not meaningful

Gross Premiums Written:

Gross premiums written by line of business were as follows:

Year ended December 31,	2019		2018		2017		% Change	
							2018 to 2019	2017 to 2018
Property	\$ 943,760	26%	\$ 1,192,807	31%	\$ 738,373	25%	(21%)	62%
Marine	411,309	11%	367,047	10%	241,393	9%	12%	52%
Terrorism	60,120	2%	61,663	2%	47,514	2%	(3%)	30%
Aviation	74,670	2%	89,673	2%	83,906	3%	(17%)	7%
Credit and political risk	154,999	4%	190,433	5%	91,316	3%	(19%)	nm
Professional lines	1,177,274	32%	1,115,213	29%	922,502	33%	6%	21%
Liability	699,876	19%	553,461	15%	473,935	17%	26%	17%
Accident and health	144,103	4%	210,502	6%	201,159	7%	(32)%	5%
Discontinued lines - Novae	9,820	—%	16,793	—%	14,820	1%	(42)%	nm
Total	\$ 3,675,931	100%	\$ 3,797,592	100%	\$ 2,814,918	100%	(3%)	35%

2019 versus 2018: Gross premiums written in 2019 decreased by \$122 million or 3% (\$75 million or 2% on a constant currency basis) compared to 2018 primarily attributable to property, accident and health, and credit and political risk lines, partially offset by increases in liability, professional lines, and marine lines.

The decrease in property lines was due to the non-renewals associated with underwriting actions taken in recent years to reposition the portfolio, partially offset by new business. The decrease in accident and health lines was due to the cancellation of certain program business. The decrease in credit and political risk lines was attributable to reduced business opportunities. The increases in liability, professional lines and marine lines were driven by new business and favorable rate changes.

Ceded Premiums Written:

2019 versus 2018: Ceded premiums written in 2019 were \$1,467 million, or 40%, of gross premiums written, compared to \$1,473 million, or 39%, in 2018. The decrease in ceded premiums written of \$6 million was primarily driven by a decrease in property lines, partially offset by an increase in liability lines.

Net Premiums Earned:

Net premiums earned by line of business were as follows:

Year ended December 31,	2019		2018		2017		% Change	
							2018 to 2019	2017 to 2018
Property	\$ 633,550	29%	\$ 796,945	34%	\$ 543,342	30%	(21%)	47%
Marine	281,764	13%	300,944	13%	181,533	10%	(6%)	66%
Terrorism	47,345	2%	49,150	2%	36,084	2%	(4%)	36%
Aviation	55,028	3%	74,203	3%	75,107	4%	(26%)	(1%)
Credit and political risk	91,698	4%	102,825	4%	56,432	3%	(11%)	82%
Professional lines	661,250	30%	570,241	24%	519,759	29%	16%	10%
Liability	264,667	12%	229,373	10%	188,770	10%	15%	22%
Accident and health	144,499	7%	207,777	9%	199,121	11%	(30%)	4%
Discontinued lines - Novae	10,283	—%	31,148	1%	16,290	1%	(67%)	nm
Total	\$ 2,190,084	100%	\$ 2,362,606	100%	\$ 1,816,438	100%	(7%)	30%

2019 versus 2018: Net premiums earned in 2019 decreased by \$173 million or 7% (\$138 million or 6% on a constant currency basis) compared to 2018. The decrease was driven by decreases in the gross premiums earned in property, accident and health, discontinued lines - Novae, marine and aviation lines together with an increase in ceded premiums earned in liability lines, partially offset by increases in gross premiums earned in liability and professional lines together with decreases in ceded premiums earned in discontinued lines - Novae and property lines.

Loss Ratio:

The components of the loss ratio were as follows:

Year ended December 31,	2019	% Point Change	2018	% Point Change	2017
Current accident year loss ratio	60.8%	(6.4)	67.2%	(16.8)	84.0%
Prior year reserve development ratio	(2.4%)	1.6	(4.0%)	(0.7)	(3.3%)
Loss ratio	58.4%	(4.8)	63.2%	(17.5)	80.7%

Current Accident Year Loss Ratio:

2019 versus 2018: The current accident year loss ratio decreased to 60.8% in 2019 from 67.2% in 2018. The decrease in the current accident year loss ratio was impacted by a lower level of catastrophe and weather-related losses. During 2019, we incurred pre-tax catastrophe and weather-related losses of \$84 million, or 3.8 points primarily attributable to Hurricane Dorian, and other weather-related events. Comparatively, in 2018 we incurred pre-tax catastrophe and weather-related losses of \$204 million, or 8.7 points primarily attributable to Hurricanes Michael and Florence, California Wildfires, and other weather-related events.

After adjusting for the impact of the catastrophe and weather-related losses, the current accident year loss ratio decreased to 57.0% in 2019 from 58.5% in 2018. The decrease in the current accident year loss ratio after adjusting for the impact of the catastrophe and weather-related losses was principally due to impact of improved pricing over loss trends, and a decrease in loss experience in property lines, partially offset by an increase in loss experience in credit and political risk lines.

Acquisition Cost Ratio:

The increase in the acquisition cost ratio to 21.4% in 2019 from 16.9% in 2018 was principally related to the acquisition of Novae. At the acquisition date, the allocation of the purchase price to the assets acquired and liabilities assumed based on estimated fair values at that date, resulted in the write-off of the deferred acquisition cost asset on Novae's balance sheet as the value of policies in-force on that date are considered within VOBA. Consequently, the absence of \$12 million and \$121 million of acquisition expense in 2019 and 2018, respectively, benefited the acquisition cost ratio by 0.6 points and 5.1 points, respectively. Adjusting the acquisition cost ratio for these amounts, the acquisition cost ratio in 2019 was comparable to 2018.

General and Administrative Expense Ratio:

The increase in the general and administrative expense ratio to 18.3% in 2019 from 16.8% in 2018 was mainly driven by a decrease in net premiums earned, an increase in the allocation of corporate costs to the segment, and an increase in professional fees, partially offset by a decrease in personnel costs.

Reinsurance Segment

Results for the reinsurance segment were as follows:

Year ended December 31,	2019	% Change	2018	% Change	2017
Revenues:					
Gross premiums written	\$ 3,222,927	4%	\$ 3,112,473	14%	\$ 2,741,355
Net premiums written	2,280,460	(2%)	2,334,215	4%	2,251,318
Net premiums earned	2,397,094	(1%)	2,428,889	4%	2,332,322
Other insurance related income (losses)	13,586	nm	7,162	nm	(4,184)
Expenses:					
Current accident year net losses and loss expenses	(1,791,717)		(1,802,820)		(1,961,940)
Prior year reserve development	25,598		106,856		139,595
Acquisition costs	(556,301)		(569,642)		(553,362)
General and administrative expenses	(103,772)		(123,916)		(124,115)
Underwriting income (loss)	\$ (15,512)	nm	\$ 46,529	nm	\$ (171,684)
		% Point Change		% Point Change	
Ratios:					
Current accident year loss ratio excluding catastrophe and weather-related losses	64.0%	(0.8)	64.8%	(0.8)	65.6%
Catastrophe and weather-related losses ratio	10.7%	1.3	9.4%	(9.1)	18.5%
Current accident year loss ratio	74.7%	0.5	74.2%	(9.9)	84.1%
Prior year reserve development ratio	(1.0%)	3.4	(4.4%)	1.6	(6.0%)
Net losses and loss expenses ratio	73.7%	3.9	69.8%	(8.3)	78.1%
Acquisition cost ratio	23.2%	(0.3)	23.5%	(0.2)	23.7%
General and administrative expense ratio	4.3%	(0.8)	5.1%	(0.2)	5.3%
Combined ratio	101.2%	2.8	98.4%	(8.7)	107.1%

nm – not meaningful

Gross Premiums Written:

Gross premiums written by line of business were as follows:

Year ended December 31,	2019		2018		2017		% Change	
							2018 to 2019	2017 to 2018
Catastrophe	\$ 718,514	24%	\$ 536,243	17%	\$ 436,707	17%	34%	23%
Property	304,166	9%	342,789	11%	352,609	13%	(11%)	(3%)
Credit and surety	269,733	8%	329,126	11%	205,352	7%	(18%)	60%
Professional lines	261,072	8%	268,181	9%	252,272	9%	(3%)	6%
Motor	334,887	10%	499,727	16%	391,923	14%	(33%)	28%
Liability	546,479	17%	438,767	14%	420,701	15%	25%	4%
Engineering	57,028	2%	60,358	2%	77,134	3%	(6%)	(22%)
Agriculture	224,961	7%	226,246	7%	236,200	9%	(1%)	(4%)
Marine and other	74,781	2%	44,741	1%	55,925	2%	67%	(20%)
Accident and health	432,670	13%	365,660	12%	312,919	11%	18%	17%
Discontinued lines - Novae	(1,364)	—%	635	—%	(387)	—%	nm	nm
Total	\$ 3,222,927	100%	\$ 3,112,473	100%	\$ 2,741,355	100%	4%	14%

2019 versus 2018: Gross premiums written in 2019 increased by \$110 million or 4% (\$163 million or 5% on a constant currency basis) compared to 2018 primarily attributable to catastrophe, liability, accident and health, and marine and other lines, partially offset by decreases in motor, credit and surety, and property lines.

The increases in catastrophe, liability, accident and health, and marine and other lines were driven by new business. In addition, increased line sizes on a number of treaties, the restructuring of several treaties, and higher level of premiums written on a multi-year basis contributed to the increase in catastrophe and liability lines. The increases in liability, and marine and other lines were also due to premium adjustments.

The decrease in motor lines was driven by non-renewals, decreased line sizes on a number of treaties, and the impact of foreign exchange movements as the strengthening of the U.S. dollar drove comparative premium decreases in treaties denominated in foreign currencies, partially offset by premium adjustments. The decrease in credit and surety lines was driven by non-renewals and premium adjustments, partially offset by new business. The decrease in property lines was primarily due to non-renewals and decreased line sizes on a number of treaties, partially offset by favorable rate changes, the restructuring of several treaties, new business, and premium adjustments.

Ceded Premiums Written:

2019 versus 2018: Ceded premiums written in 2019 were \$942 million, or 29%, of gross premiums written, compared to \$778 million, or 25%, in 2018. The increase in ceded premiums written was primarily attributable to catastrophe, liability, credit and surety, and accident and health lines, partially offset by decreases in property and agriculture lines.

The increase in catastrophe lines was attributable to an increase in premiums ceded to a new aggregate excess of loss treaty and to the new quota share retrocessional treaties with Alturas, together with additional costs associated with the purchase of catastrophe bond protection and an increase in premium ceded to strategic capital partners. The increases in liability, and accident and health lines were attributable to the increase in premiums ceded to the retrocessional cover with Harrington Re. The increase in credit and surety lines was attributable to an increase in premiums ceded to a new quota share retrocessional treaty.

The decrease in property lines was attributable to the non-renewals of fronting arrangements, together with a decrease in premiums ceded to facultative covers with Harrington Re. The decrease in agriculture lines was attributable to the restructuring of a fronting arrangement and a quota share retrocessional treaty.

Net Premiums Earned:

Net premiums earned by line of business were as follows:

Year ended December 31,	2019		2018		2017		% Change	
							2018 to 2019	2017 to 2018
Catastrophe	\$ 267,591	10%	\$ 250,016	12%	\$ 209,470	10%	7%	19%
Property	311,625	13%	317,038	13%	304,376	13%	(2%)	4%
Credit and surety	208,717	9%	250,276	10%	244,186	10%	(17%)	2%
Professional lines	206,328	9%	220,687	9%	226,622	10%	(7%)	(3%)
Motor	398,565	17%	438,693	18%	371,501	16%	(9%)	18%
Liability	373,664	16%	363,292	15%	351,940	15%	3%	3%
Engineering	63,899	3%	67,932	3%	66,291	3%	(6%)	2%
Agriculture	188,925	8%	176,435	7%	195,391	8%	7%	(10%)
Marine and other	59,209	2%	35,570	1%	64,449	3%	66%	(45%)
Accident and health	319,619	13%	299,813	12%	289,925	12%	7%	3%
Discontinued lines - Novae	(1,048)	—%	9,137	—%	8,171	—%	nm	12%
Total	\$ 2,397,094	100%	\$ 2,428,889	100%	\$ 2,332,322	100%	(1%)	4%

2019 versus 2018: Net premiums earned in 2019 decreased by \$32 million or 1% (\$18 million or 1% on a constant currency basis) compared to 2018. The decrease in net premiums earned was primarily driven by increases in ceded premiums earned in accident and health, credit and surety, and motor lines, together with decreases in gross premiums earned in motor and credit and surety lines, partially offset by increases in gross premium earned in accident and health, and marine and other lines.

Other Insurance Related Income (Loss):

Other insurance related income in 2019 of \$14 million compared to other insurance related income in 2018 of \$7 million, an increase of \$7 million, primarily due to an increase in fees associated with arrangements with strategic capital partners.

Loss Ratio:

The components of the loss ratio were as follows:

Year ended December 31,	2019	% Point Change	2018	% Point Change	2017
Current accident year loss ratio	74.7%	0.5	74.2%	(9.9)	84.1%
Prior year reserve development ratio	(1.0%)	3.4	(4.4%)	1.6	(6.0%)
Loss ratio	73.7%	3.9	69.8%	(8.3)	78.1%

Current Accident Year Loss Ratio:

2019 versus 2018: The current accident year loss ratio increased to 74.7% in 2019 from 74.2% in 2018. The increase in the current accident year loss ratio was impacted by a higher level of catastrophe and weather-related losses. During 2019, we incurred pre-tax catastrophe and weather-related losses, net of reinstatement premiums, of \$252 million, or 10.7 points primarily attributable to Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, Australia Wildfires and other weather-related events. Comparatively, in 2018 we incurred pre-tax catastrophe and weather-related losses, net of reinstatement premiums, of \$226 million or 9.4 points primarily attributable to California Wildfires, Hurricanes Michael and Florence, Typhoon Jebi and other weather-related events.

After adjusting for the impact of the catastrophe and weather-related losses, the current accident year loss ratio decreased to 64.0% in 2019 from 64.8% in 2018. The decrease in the current accident year loss ratio after adjusting for the impact of the catastrophe and weather-related losses was principally due to the impact of changes in business mix, a decrease in loss experience in property and engineering lines, partially offset by an increase in loss experience in aviation, agriculture and motor lines.

Acquisition Cost Ratio:

The decrease in the acquisition cost ratio to 23.2% in 2019 from 23.5% in 2018 was principally related to changes in business mix, adjustments related to loss sensitive features, and the impact of retrocessional contracts.

General and Administrative Expense Ratio:

The decrease in the general and administrative expense ratio to 4.3% in 2019 from 5.1% in 2018 was mainly driven by an increase in fees associated with arrangements with strategic capital partners, together with decreases in information technology costs and personnel costs, partially offset by a decrease in net premiums earned, and an increase in the allocation of corporate costs to the segment.

OTHER EXPENSES (REVENUES), NET

Our other expenses (revenues), net were as follows:

Year ended December 31,	2019	% Change	2018	% Change	2017
Corporate expenses	\$ 129,096	19%	\$ 108,221	(17%)	\$ 129,945
Foreign exchange losses (gains)	(12,041)	nm	(29,165)	nm	134,737
Interest expense and financing costs	68,107	1%	67,432	23%	54,811
Income tax expense (benefit)	23,692	nm	(29,486)	nm	(7,542)
Total	\$ 208,854	nm	\$ 117,002	nm	\$ 311,951

nm-not meaningful

Corporate Expenses

Corporate expenses include holding company costs necessary to support our worldwide insurance and reinsurance operations and costs associated with operating as a publicly-traded company. As a percentage of net premiums earned, corporate expenses were 2.8% and 2.3% in 2019 and 2018, respectively.

The increase in corporate expenses in 2019 compared to 2018 was primarily related to ongoing investments in information technology and digital capabilities, an increase in personnel costs and professional fees, partially offset by an increase in the allocation of corporate costs to the insurance and reinsurance segments.

Foreign Exchange Losses (Gains)

Some of our business is written in currencies other than the U.S. dollar. Foreign exchange gains in 2019 were mainly driven by the impact of the strengthening of the U.S. dollar on the re-measurement of net insurance-related liabilities denominated in euro, partially offset by the impact of the weakening of the U.S. dollar on the re-measurement of net insurance-related liabilities denominated in pound sterling.

Foreign exchange gains in 2018 were mainly driven by the impact of the strengthening of the U.S. dollar on the re-measurement of net insurance-related liabilities mainly denominated in pound sterling and euro.

Interest Expense and Financing Costs

Interest expense and financing costs are related to interest due on the 5.875% senior unsecured notes ("5.875% Senior Notes") issued in 2010, the 5.150% senior unsecured notes ("5.150% Senior Notes") issued in 2014, the 4.000% senior unsecured notes ("4.000% Senior Notes") issued in 2017, the 3.900% Senior Notes and the Junior Subordinated Notes issued in 2019.

Interest expense and financing costs increased by \$1 million in 2019 compared to 2018, due to the issuance of the 3.900% Senior Notes on June 19, 2019, and the issuance of the Junior Subordinated Notes on December 10, 2019, partially offset by the repayment of the 2.650% Senior Notes on April 1, 2019 and the repayment of the Dekania Notes on November 15, 2018.

Income Tax Expense (Benefit)

Income tax expense (benefit) primarily results from income (loss) generated by our foreign operations in the U.S. and Europe. Our effective tax rate, which is calculated as income tax expense (benefit), divided by income (loss) before tax including interest in income (loss) of equity method investments, was 6.8% and (217.9)%, in 2019 and 2018, respectively. This effective rate can vary between years depending on the distribution of net income (loss) among tax jurisdictions, as well as other factors.

The tax expense of \$24 million in 2019 was principally due to the geographic distribution of pre-tax income with the expense being driven by pre-tax income generated in our U.S. and European operations, partially offset by pre-tax losses in our U.K. operations.

The tax benefit of \$29 million in 2018 was principally due to the geographic distribution of pre-tax losses with the benefit being driven by pre-tax losses in our U.K. and European operations, partially offset by pre-tax income in our U.S. operations.

NET INVESTMENT INCOME AND NET INVESTMENT GAINS (LOSSES)

Net Investment Income

Net investment income from our cash and investment portfolio by major asset class was as follows:

Year ended December 31,	2019	% Change	2018	% Change	2017
Fixed maturities	\$ 384,053	8%	\$ 356,273	14%	\$ 312,662
Other investments	60,038	23%	48,959	(36%)	76,858
Equity securities	10,434	4%	10,077	(32%)	14,919
Mortgage loans	14,712	8%	13,566	26%	10,780
Cash and cash equivalents	26,882	(2%)	27,566	nm	10,057
Short-term investments	7,053	(25%)	9,365	nm	2,718
Gross investment income	503,172	8%	465,806	9%	427,994
Investment expense	(24,600)	(10%)	(27,299)	—%	(27,189)
Net investment income	\$ 478,572	9%	\$ 438,507	9%	\$ 400,805
Pre-tax yield:⁽¹⁾					
Fixed maturities	<u>3.2%</u>		<u>3.0%</u>		<u>2.7%</u>

nm - not meaningful

(1) Pre-tax yield is calculated by dividing net investment income by the average month-end amortized cost balances for the periods indicated.

Fixed Maturities

2019 versus 2018: Net investment income in 2019 increased by \$28 million or 8%, compared to 2018 due to an increase in yields and a larger allocation of the portfolio to fixed maturities.

Other Investments

Other investments include hedge funds, direct lending funds, private equity funds, real estate funds, other privately held investments, indirect investments in CLO-Equities and overseas deposits. These investments are recorded at fair value, with changes in fair value and income distributions reported in net investment income. Consequently, the pre-tax return on other investments may vary materially year over year, particularly during volatile equity and credit markets.

Net investment income from other investments was as follows:

Year ended December 31,	2019	2018	2017
Hedge, direct lending, private equity and real estate funds	\$ 42,186	\$ 40,295	\$ 69,740
Other privately held investments	18,050	2,036	4,560
CLO-Equities	(198)	6,628	2,558
Total net investment income from other investments⁽¹⁾	\$ 60,038	\$ 48,959	\$ 76,858
Pre-tax return on other investments⁽²⁾	8.5%	6.4%	9.6%

(1) Excluding overseas deposits.

(2) The pre-tax return on other investments is calculated by dividing total net investment income from other investments by the average month-end fair value balances held for the periods indicated, excluding overseas deposits.

2019 versus 2018: Pre-tax return on other investments in 2019 increased to 8.5% compared to 6.4% in 2018. The increase was primarily attributable to a realized gain of \$13 million associated with the sale of a privately held investment, partially offset by lower returns from CLO-Equities.

Net Investment Gains (Losses)

Fixed maturities classified as available for sale are reported at fair value. Realized gains (losses) on fixed maturities are reported in net investment gains (losses) when these securities are sold or impaired.

Equity securities are reported at fair value. Realized gains (losses) on equity securities are also reported in net investment gains (losses) when securities are sold or impaired. In addition, changes in the fair values of equity securities are reported in net investment gains (losses).

Changes in the fair value of investment derivatives, mainly foreign exchange forward contracts and exchange traded interest rate swaps, are recorded in net investment gains (losses).

Net investment gains (losses) were as follows:

Year ended December 31,	2019	2018	2017
<i>On sale of investments:</i>			
Fixed maturities and short-term investments	\$ 36,645	\$ (96,086)	\$ (26,396)
Equity securities	3,126	17,046	77,384
	<u>39,771</u>	<u>(79,040)</u>	<u>50,988</u>
OTTI charges recognized in net income	(6,984)	(9,733)	(14,493)
Change in fair value of investment derivatives	(1,823)	5,445	(8,269)
Net unrealized gains (losses) on equity securities	60,269	(66,890)	—
Net investment gains (losses)	\$ 91,233	\$ (150,218)	\$ 28,226

2019 versus 2018: Net investment gains in 2019 were \$91 million compared to net investment losses of \$150 million in 2018. Net investment gains reported in 2019 mainly reflected net unrealized gains on equity securities and net realized gains on the sale of U.S. government and agency RMBS securities. Net investment losses reported in 2018 mainly reflected net realized investment losses on the sale of agency RMBS, U.S. government and corporate debt securities and net unrealized losses on equity securities of \$67 million.

On Sale of Investments

Generally, sales of individual securities occur when there are changes in the relative value, credit quality, or duration of a particular issue. We may also sell to re-balance our investment portfolio in order to change exposure to particular asset classes or sectors.

OTTI Charges

The OTTI charges (refer to '*Critical Accounting Estimates – OTTI*' for further details) recognized in net income by asset class were as follows:

Year ended December 31,	2019	2018	2017
Fixed maturities:			
Non-U.S. government	\$ 90	\$ 4,697	\$ 8,187
Corporate debt	6,894	4,995	6,306
Non-Agency CMBS	—	41	—
Total OTTI charge recognized in net income	\$ 6,984	\$ 9,733	\$ 14,493

2019 versus 2018: OTTI losses in 2019 were \$7 million compared to \$10 million in 2018. The OTTI charges in 2019 and 2018 included impairments on non-U.S. denominated securities due to foreign exchange losses associated with the strengthening of the U.S. dollar against the pound sterling and the euro and impairments on non-investment grade corporate debt securities that had declined significantly in value.

Change in Fair Value of Investment Derivatives

From time to time, we economically hedge foreign exchange exposure and interest rate risk with derivative contracts.

During 2019, foreign exchange hedges resulted in \$2 million of net gains which primarily related to securities denominated in euro which experienced volatility during 2019. We also recorded net losses of \$4 million related to interest rate swaps.

During 2018, foreign exchange hedges resulted in \$3 million of net gains which primarily related to securities denominated in euro and pound sterling as each of these currencies experienced volatility during 2018. We also recorded net gains of \$2 million related to interest rate swaps.

Our derivative instruments are not designated as hedges under current accounting guidance, therefore, net unrealized gains (losses) on the hedged securities were recorded in accumulated other comprehensive income in the statement of changes in shareholders' equity.

Total Return

Our investment strategy is to take a long-term view by actively managing our investment portfolio to maximize total return within certain guidelines and constraints. In assessing returns under this approach, we include net investment income, net investment gains (losses), the change in unrealized gains (losses) on fixed maturities, and interest in income (loss) of equity method investments generated by our investment portfolio.

Total return on cash and investments was as follows:

Year ended December 31,	2019	2018	2017
Net investment income	\$ 478,572	\$ 438,507	\$ 400,805
Net investments gains (losses)	91,233	(150,218)	28,226
Change in net unrealized gains (losses) on fixed maturities ⁽¹⁾	385,364	(191,529)	177,259
Interest in income (loss) of equity method investments	9,718	993	(8,402)
Total	\$ 964,887	\$ 97,753	\$ 597,888
Average cash and investments⁽²⁾	\$ 15,322,688	\$ 15,361,287	\$ 14,854,569
Total return on average cash and investments, pre-tax:			
Including investment related foreign exchange movements	6.3%	0.6%	4.0%
Excluding investment related foreign exchange movements ⁽³⁾	6.1%	0.9%	3.5%

- (1) Change in net unrealized gains (losses) on fixed maturities is calculated by taking net unrealized gains (losses) at period end less net unrealized gains (losses) at the prior period end.
- (2) The average cash and investments balance is calculated by taking the average of the period end fair value balances.
- (3) Pre-tax total return on average cash and investments excluding foreign exchange rate movements is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to pre-tax total return on cash and investments, the most comparable GAAP financial measure, included foreign exchange gains (losses) of \$25 million, \$(48) million and \$80 million for the years ended December 31, 2019, 2018 and 2017, respectively.

CASH AND INVESTMENTS

Details of cash and investments are as follows:

	December 31, 2019	December 31, 2018
	Fair value	Fair value
Fixed maturities	\$ 12,468,205	\$ 11,435,347
Equity securities	474,207	381,633
Mortgage loans	432,748	298,650
Other investments	770,923	787,787
Equity method investments	117,821	108,103
Short-term investments	38,471	144,040
Total investments	\$ 14,302,375	\$ 13,155,560
Cash and cash equivalents ⁽¹⁾	\$ 1,576,457	\$ 1,830,020

- (1) Includes restricted cash and cash equivalents of \$335 million and \$597 million for 2019 and 2018, respectively.

Overview

The fair value of total investments increased by \$1.1 billion in 2019, driven by the investment of cash balances, the increase in the market value of fixed maturities due to a decrease in interest rates and the tightening of credit spreads, and the increase in the market value of equity securities due to the improved performance of global equity markets.

An analysis of our investment portfolio by asset class is detailed below:

Fixed Maturities

Details of our fixed maturities portfolio are as follows:

	December 31, 2019		December 31, 2018	
	Fair value	% of total	Fair value	% of total
Fixed maturities:				
U.S. government and agency	\$ 2,112,881	17%	\$ 1,515,697	13%
Non-U.S. government	576,592	5%	493,016	4%
Corporate debt	4,930,254	38%	4,876,921	44%
Agency RMBS	1,592,584	13%	1,643,308	14%
CMBS	1,365,052	11%	1,092,530	10%
Non-Agency RMBS	84,922	1%	40,687	—%
ABS	1,598,693	13%	1,637,603	14%
Municipals ⁽¹⁾	207,227	2%	135,585	1%
Total	\$ 12,468,205	100%	\$ 11,435,347	100%
Credit ratings:				
U.S. government and agency	\$ 2,112,881	17%	\$ 1,515,697	13%
AAA ⁽²⁾	4,896,833	38%	4,569,632	40%
AA	865,601	7%	874,932	8%
A	1,848,331	15%	1,769,686	15%
BBB	1,684,589	14%	1,678,962	15%
Below BBB ⁽³⁾	1,059,970	9%	1,026,438	9%
Total	\$ 12,468,205	100%	\$ 11,435,347	100%

(1) Includes bonds issued by states, municipalities, and political subdivisions.

(2) Includes U.S. government-sponsored agencies, residential mortgage-backed securities ("RMBS") and commercial mortgage-backed securities ("CMBS").

(3) Non-investment grade and non-rated securities.

At December 31, 2019, fixed maturities had a weighted average credit rating of AA- (2018: AA-), a book yield of 2.8% (2018: 3.1%), and an average duration of 3.2 years (2018: 3.0 years). The interest rate swap positions, which reduced duration to 2.8 years at December 31, 2018, were closed during 2019. At December 31, 2019, fixed maturities together with short-term investments and cash and cash equivalents (i.e. total investments of \$14.1 billion), had a weighted average credit rating of AA- (2018: AA-) and an average duration of 2.9 years (2018: 2.6 years). At December 31, 2018, duration inclusive of interest rate swaps was 2.5 years.

Our methodology for assigning credit ratings to fixed maturities is in line with the methodology used for the Barclays U.S. Aggregate Bond index. This methodology uses the middle of Standard & Poor's (S&P), Moody's and Fitch ratings. When ratings from only two of these agencies are available, the lower rating is used. When only one agency rates a security, that rating is used.

To calculate the weighted average credit rating for fixed maturities, we assign points to each rating with 29 points for the highest rating (AAA) and 2 points for the lowest rating (D) and then calculate the weighted average based on the fair values of the individual securities. Securities that are not rated by S&P, Moody's or Fitch are excluded from weighted average calculations. At December 31, 2019, the fair value of fixed maturities not rated was \$33.5 million (2018: \$55.9 million).

In addition to managing credit risk exposure within our fixed maturities portfolio we also monitor the aggregation of country risk exposure on a group-wide basis (refer to Item 1 '*Risk and Capital Management*' for further details). Country risk exposure is the risk that events in a country, such as currency crises, regulatory changes and other political events, will adversely affect the ability of obligors in the country to honor their obligations. For corporate debt and structured securities, we measure the country of risk exposure based on a number of factors including, but not limited to, location of management, principal operations and country of revenues.

An analysis of our fixed maturities portfolio by major asset classes is detailed below.

Non-U.S. Government

Non-U.S. government securities include bonds issued by non-U.S. governments and their agencies along with supranational organizations (collectively also known as sovereign debt securities).

Details of exposures to governments in the eurozone and other non-U.S. government concentrations by fair value are as follows:

Country	December 31, 2019			December 31, 2018		
	Fair value	% of total	Weighted average credit rating	Fair value	% of total	Weighted average credit rating
<i>Eurozone countries:</i>						
Netherlands	\$ 12,034	2%	AA+	\$ 5,534	1%	AA+
Supranationals ⁽¹⁾	11,928	2%	AAA	3,849	1%	AAA
France	4,908	1%	AA	4,156	1%	AA
Germany	4,356	1%	AAA	—	—%	—
Austria	3,972	1%	AA+	2,309	—%	AA+
Belgium	—	—%	—	10,983	2%	AA-
Spain	—	—%	—	1,629	—%	A-
Portugal	—	—%	—	876	—%	BBB-
Total eurozone	\$ 37,198	7%	AA+	\$ 29,336	5%	AA
<i>Other concentrations:</i>						
United Kingdom	\$ 238,238	41%	AA	\$ 219,452	45%	AA
Canada	129,191	22%	AA+	90,187	18%	AA+
Mexico	22,402	4%	BBB+	28,735	6%	BBB+
Other	149,563	26%	AA+	125,306	26%	A+
Total other concentrations	\$ 539,394	93%	AA+	\$ 463,680	95%	AA+
Total non-U.S. government	\$ 576,592	100%	AA-	\$ 493,016	100%	AA-

(1) Includes supranationals only in the eurozone.

At December 31, 2019, net unrealized gains on non-U.S. government securities was \$12 million (2018: net unrealized losses of \$15 million) which included gross unrealized foreign exchange losses of \$3 million (2018: \$13 million), mainly related to U.K. government bonds.

Corporate Debt

Corporate debt securities consist primarily of investment-grade debt of a wide variety of corporate issuers and industries.

Details of our corporate debt securities portfolio by sector are as follows:

	December 31, 2019			December 31, 2018		
	Fair value	% of total	Weighted average credit rating	Fair value	% of total	Weighted average credit rating
<i>Financial institutions:</i>						
U.S. banking	\$ 969,570	20%	A-	\$ 1,075,998	22%	A-
Foreign banking	370,981	8%	A	433,182	9%	A
Corporate/commercial finance	358,008	7%	BBB-	305,896	6%	BB
Insurance	147,287	3%	A	134,537	3%	A
Investment brokerage	53,173	1%	A-	35,223	1%	A
Total financial institutions	<u>1,899,019</u>	<u>39%</u>	<u>A-</u>	<u>1,984,836</u>	<u>41%</u>	<u>A-</u>
Consumer non-cyclicals	614,605	12%	BBB-	584,248	12%	BBB-
Communications	454,400	9%	BB+	420,511	9%	BBB-
Consumer cyclical	452,375	9%	BBB-	468,250	10%	BBB-
Technology	354,449	7%	BBB-	328,101	7%	BBB-
Industrials	346,289	7%	BB	321,306	7%	BB
Energy	239,857	5%	BBB	267,644	5%	BBB
Utilities	141,104	3%	BBB+	149,276	3%	BBB+
Other	428,156	9%	A+	352,749	6%	A+
Total	<u>\$ 4,930,254</u>	<u>100%</u>	<u>BBB+</u>	<u>\$ 4,876,921</u>	<u>100%</u>	<u>BBB+</u>
<i>Credit quality summary:</i>						
Investment grade	\$ 3,935,941	80%	A-	\$ 3,892,399	80%	A-
Non-investment grade	994,313	20%	B+	984,522	20%	B
Total	<u>\$ 4,930,254</u>	<u>100%</u>	<u>BBB+</u>	<u>\$ 4,876,921</u>	<u>100%</u>	<u>BBB+</u>

At December 31, 2019, our non-investment grade portfolio had a fair value of \$994 million (2018: \$985 million), a weighted average credit rating of B+ (2018: B) and duration of 1.5 years (2018: 2.4 years). At December 31, 2019, our corporate debt portfolio, including non-investment grade securities, had a duration of 3.1 years (2018: 3.1 years).

Mortgage-Backed Securities

Details of the fair values of our RMBS and CMBS portfolios by credit rating are as follows:

	December 31, 2019		December 31, 2018	
	RMBS	CMBS	RMBS	CMBS
Government agency	\$ 1,592,584	\$ 332,383	\$ 1,643,308	\$ 204,744
AAA	64,685	991,627	20,965	824,226
AA	1,377	37,872	3,066	52,875
A	1,107	3,170	1,459	9,943
BBB	1,760	—	3,218	742
Below BBB ⁽¹⁾	15,993	—	11,979	—
Total	<u>\$ 1,677,506</u>	<u>\$ 1,365,052</u>	<u>\$ 1,683,995</u>	<u>\$ 1,092,530</u>

(1) Non-investment grade securities

Residential MBS

Agency RMBS consist of bonds issued by the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association which are primarily AAA rated and are supported by loans which are diversified across geographical areas. At December 31, 2019, agency RMBS had an average duration of 3.4 years (2018: 3.9 years).

Non-Agency RMBS mainly include investment-grade bonds originated by non-agencies. At December 31, 2019, non-agency RMBS had an average duration of 2.1 years (2018: 0.8 years) and weighted average life of 6.1 years (2018: 4.0 years).

Commercial MBS

CMBS mainly include investment-grade bonds originated by non-agencies. At December 31, 2019, approximately 99% (2018: 99%) of our CMBS were rated AA or better. At December 31, 2019, the weighted average estimated subordination percentage of the portfolio was 29% (2018: 31%), which represents the current weighted average estimated percentage of the capital structure subordinated to the investment holding that is available to absorb losses before the security incurs the first dollar loss of principal. At December 31, 2019, CMBS had an average duration of 5.1 years (2018: 4.7 years) and weighted average life of 6.1 years (2018: 5.5 years).

Asset-Backed Securities

ABS mainly include investment-grade bonds backed by pools of loans with a variety of underlying collateral, including auto loans, student loans, credit card receivables and collateralized loan obligations ("CLOs") originated by a variety of financial institutions.

Details of the fair value of our ABS portfolio by underlying collateral and credit rating are as follows:

	Asset-backed securities					Total
	AAA	AA	A	BBB	Below BBB	
At December 31, 2019						
CLO - debt tranches	\$ 840,999	\$ 46,463	\$ 16,682	\$ 10,385	\$ 23,447	\$ 937,976
Auto	349,103	—	—	—	—	349,103
Student loan	69,690	5,003	—	—	—	74,693
Credit card	19,657	—	—	—	—	19,657
Other	177,488	9,142	27,860	2,186	588	217,264
Total	\$ 1,456,937	\$ 60,608	\$ 44,542	\$ 12,571	\$ 24,035	\$ 1,598,693
% of total	91%	4%	3%	1%	1%	100%
At December 31, 2018						
CLO - debt tranches	\$ 900,157	\$ 27,492	\$ —	\$ 9,938	\$ 23,540	\$ 961,127
Auto	365,685	7,872	4,231	—	—	377,788
Student loan	79,419	17,415	—	—	—	96,834
Credit card	33,219	—	—	—	—	33,219
Other	127,638	13,457	24,867	103	2,570	168,635
Total	\$ 1,506,118	\$ 66,236	\$ 29,098	\$ 10,041	\$ 26,110	\$ 1,637,603
% of total	92%	4%	2%	1%	1%	100%

At December 31, 2019, the average duration our ABS portfolio was 0.7 years (2018: 0.7 years) and the weighted average life was 3.5 years (2018: 3.6 years).

Municipals

Municipals comprise revenue and general obligation bonds issued by U.S. domiciled state and municipal entities and are primarily held in the taxable portfolios of our U.S. subsidiaries.

Details of the fair value of our municipals portfolio by state and between Revenue bonds and General Obligation ("G.O.") bonds are as follows:

	G.O.	Revenue	Total	% of total fair value	Gross unrealized gains	Gross unrealized losses	Weighted average credit rating
<u>At December 31, 2019</u>							
New York	\$ 5,011	\$ 44,549	\$ 49,560	24%	\$ 1,139	\$ (35)	AA+
California	21,333	21,416	42,749	21%	1,088	(4)	AA
Massachusetts	16,122	522	16,644	8%	22	(117)	AA
Texas	3,702	11,232	14,934	7%	418	(88)	AA
Michigan	—	13,952	13,952	7%	194	(17)	AA-
Other	12,796	56,592	69,388	33%	1,498	(146)	A+
	<u>\$ 58,964</u>	<u>\$ 148,263</u>	<u>\$ 207,227</u>	<u>100%</u>	<u>\$ 4,359</u>	<u>\$ (407)</u>	<u>AA</u>
<u>At December 31, 2018</u>							
New York	\$ 9,805	\$ 29,479	\$ 39,284	29%	\$ 67	\$ (726)	AA
California	21,371	13,314	34,685	26%	518	(168)	AA-
Utah	—	9,507	9,507	7%	57	—	AA+
Florida	—	9,160	9,160	7%	19	(34)	AA
Michigan	—	9,147	9,147	7%	—	(136)	AA-
Other	4,326	29,476	33,802	24%	253	(333)	AA-
	<u>\$ 35,502</u>	<u>\$ 100,083</u>	<u>\$ 135,585</u>	<u>100%</u>	<u>\$ 914</u>	<u>\$ (1,397)</u>	<u>AA-</u>

G.O. bonds are backed by the full faith and credit of the authority that issued the debt and are secured by the taxing powers of those authorities. Revenue bonds are backed by the revenue stream generated by the services provided by the issuer (e.g. sewer, water or utility projects). As issuers of revenue bonds do not have the ability to draw from tax revenues or levy taxes to fund obligations, revenue bonds may carry a greater risk of default than G.O. bonds. At December 31, 2019, 96% (2018: 93%) of municipals are taxable with the remainder being tax exempt.

Gross Unrealized Losses

At December 31, 2019, the gross unrealized losses on our fixed maturities portfolio were \$32 million (2018: \$215 million).

The severity of the unrealized loss position as a percentage of amortized cost for all investment grade fixed maturities in an unrealized loss position including any impact of foreign exchange losses (gains) was as follows:

Severity of Unrealized Loss	December 31, 2019			December 31, 2018		
	Fair value	Gross unrealized losses	% of total gross unrealized losses	Fair value	Gross unrealized losses	% of total gross unrealized losses
0-10%	\$ 2,961,063	\$ (24,823)	96%	\$ 7,496,064	\$ (151,333)	91%
10-20%	6,571	(1,006)	4%	88,447	(12,573)	8%
20-30%	10	(3)	—%	5,557	(1,522)	1%
30-40%	—	—	—%	—	—	—%
40-50%	—	—	—%	—	—	—%
> 50%	—	—	—%	—	—	—%
Total	\$ 2,967,644	\$ (25,832)	100%	\$ 7,590,068	\$ (165,428)	100%

The decrease in gross unrealized losses on investment-grade fixed maturities reflected the decrease in interest rates and the impact of the tightening of credit spreads on investment grade corporate debt securities.

The severity of the unrealized loss position as a percentage of amortized cost for all non-investment grade fixed maturities in an unrealized loss position including any impact of foreign exchange losses (gains) was as follows:

Severity of Unrealized Loss	December 31, 2019			December 31, 2018		
	Fair value	Gross unrealized losses	% of total gross unrealized losses	Fair value	Gross unrealized losses	% of total gross unrealized losses
0-10%	\$ 197,731	\$ (4,319)	72%	\$ 779,812	\$ (31,179)	63%
10-20%	7,577	(1,063)	18%	107,931	(15,074)	31%
20-30%	1,893	(557)	9%	9,289	(2,931)	6%
30-40%	106	(63)	1%	370	(227)	—%
40-50%	—	—	—%	—	—	—%
> 50%	13	(18)	—%	—	—	—%
Total	\$ 207,320	\$ (6,020)	100%	\$ 897,402	\$ (49,411)	100%

The decrease in gross unrealized losses on non-investment grade fixed maturities reflected the impact of the tightening of credit spreads on non-investment grade high yield corporate debt securities.

Equity Securities

At December 31, 2019, net unrealized gains on equity securities were \$75 million (2018: \$16 million). The increase was due to improved performance of global equity markets.

Mortgage Loans

During 2019, investment in commercial mortgage loans increased to \$433 million from \$299 million, an increase of \$134 million. The commercial mortgage loans are high quality and collateralized by a variety of commercial properties and are diversified geographically throughout the U.S. and by property type to reduce the risk of concentration. At December 31, 2019 and 2018, there were no credit losses or past due amounts associated with our commercial mortgage loans portfolio.

Other Investments

Details of our other investments portfolio are as follows:

	December 31, 2019		December 31, 2018	
<u>Hedge funds</u>				
Long/short equity funds	\$ 31,248	4%	\$ 26,779	3%
Multi-strategy funds	136,542	18%	167,819	22%
Total hedge funds	<u>167,790</u>	<u>22%</u>	<u>194,598</u>	<u>25%</u>
Direct lending funds	277,395	36%	274,478	35%
Private equity funds	80,412	10%	64,566	8%
Real estate funds	130,112	17%	84,202	11%
Total hedge, direct lending, private equity and real estate funds	<u>655,709</u>	<u>85%</u>	<u>617,844</u>	<u>79%</u>
CLO-Equities	14,328	2%	21,271	2%
Other privately held investments	36,934	5%	44,518	6%
Overseas deposits	63,952	8%	104,154	13%
Total other investments	<u>\$ 770,923</u>	<u>100%</u>	<u>\$ 787,787</u>	<u>100%</u>

Refer to Item 8, Note 5(c) to the Consolidated Financial Statements *'Investments'*.

Equity Method Investments

During 2016, we paid \$108 million including direct transactions costs to acquire 19% of the common equity of Harrington Reinsurance Holdings Limited ("Harrington"), the parent company of Harrington Re, an independent reinsurance company jointly sponsored by the Company and The Blackstone Group L.P. ("Blackstone"). Harrington is not a variable interest entity that is required to be included in the consolidated financial statements. We account for our ownership interest in Harrington under the equity method of accounting.

Restricted Assets

Refer to Item 8, Note 5(g) to the Consolidated Financial Statements *'Investments'*.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity

Liquidity is a measure of a company's ability to generate cash flows sufficient to meet the short-term and long-term cash requirements of its business operations. We manage liquidity at both the holding company and operating subsidiary level.

Holding Company

As a holding company, AXIS Capital has no operations of its own and its assets consist primarily of investments in its subsidiaries. Accordingly, AXIS Capital's future cash flows depend on the availability of dividends or other statutorily permissible distributions, such as returns of capital, from its subsidiaries. The ability to pay such dividends and/or distributions is limited by the applicable laws and regulations of the various countries and states in which AXIS Capital's subsidiaries operate (refer to Item 8, Note 21 to the Consolidated Financial Statements '*Statutory Financial Information*' for further details), as well as the need to maintain capital levels to adequately support insurance and reinsurance operations and to preserve financial strength ratings issued by independent rating agencies. During 2019, AXIS Capital received \$250 million (2018: \$200 million) of distributions from its subsidiaries. AXIS Capital's primary uses of funds are dividend payments to both common and preferred shareholders, interest and principal payments on debt, capital investments in subsidiaries and payment of corporate operating expenses. We believe the dividend/distribution capacity of AXIS Capital's subsidiaries, which was \$1.1 billion at December 31, 2019, will provide AXIS Capital with sufficient liquidity for the foreseeable future.

Operating Subsidiaries

AXIS Capital's operating subsidiaries primarily derive cash from the net inflow of premiums less claim payments related to underwriting activities and from net investment income. Historically, these cash receipts have been sufficient to fund the operating expenses of these subsidiaries, as well as to fund dividend payments to AXIS Capital. The subsidiaries' remaining cash flows are generally invested in our investment portfolio. The remaining cash flows have also been used to fund common share repurchases and to fund acquisitions in recent periods.

The insurance and reinsurance business of our operating subsidiaries inherently provide liquidity, as premiums are received in advance (sometimes substantially in advance) of the time claims are paid. However, the amount of cash required to fund claim payments can fluctuate significantly from period to period, due to the low frequency/high severity nature of certain types of business we write.

Consolidated cash flows from operating, investing and financing activities in the last three years were as follows:

Total cash provided by (used in) ⁽¹⁾	2019	2018	2017
Operating activities	\$ 199,004	\$ 10,773	\$ 259,229
Investing activities	(774,315)	638,554	391,510
Financing activities	277,510	(186,207)	(545,688)
Effect of exchange rate changes on cash	44,238	3,114	17,228
Increase (decrease) in cash and cash equivalents	\$ (253,563)	\$ 466,234	\$ 122,279

(1) Refer to Item 8, '*Consolidated Statements of Cashflows*', for further details.

- Net cash provided by operating activities was \$199 million in 2019 compared to \$11 million in 2018. Cash inflows from insurance and reinsurance operations typically include premiums, net of acquisition costs, and reinsurance recoverables. Cash outflows principally include payments of claims and loss adjustment expenses together with payments of premiums to reinsurers and operating expenses. Cash provided by operating activities can fluctuate due to timing differences between the collection of premiums and reinsurance recoverables and the payment of claims and loss adjustment expenses, and the payment of premiums to reinsurers. Operating cash inflows increased in 2019 compared to 2018, primarily attributable to an increase in premiums and reinsurance recoverables received, partially offset by an increase in payments of claims and loss adjustment expenses, an increase in costs associated with the purchase of reinsurance and retrocessional covers and an increase in operating expenses.
- Investing cash outflows in 2019 principally related to the net purchases of fixed maturities of \$693 million, net purchases of equity securities of \$22 million, partially offset by net proceeds from the sale of other investments of \$31 million.

Investing cash inflows in 2018 principally related to the net proceeds from the sale and redemption of fixed maturities of \$364 million, net proceeds from the sale and redemption of equity securities of \$173 million and the net proceeds from the sale of other investments of \$181 million.

- Financing cash inflows were due to net proceeds from the issuance of \$300 million 3.900% Senior Notes and \$425 million of Junior Subordinated Notes. Financing cash outflows primarily related to the repayment of \$250 million 2.650% Senior Notes and dividends paid to common and preferred shareholders of \$180 million in 2019 (2018: \$176 million). Cash outflows also included common share repurchases associated with the vesting of share-settled restricted stock units of \$10 million in 2019 (2018: \$10 million). Any future share repurchases are discretionary, the timing and amount of repurchase transactions depend on a variety of factors including, but not limited to, global insurance and reinsurance, and financial market conditions and opportunities, capital management and regulatory considerations (refer to *'Capital Resources – Share Repurchases'* below for further details). In 2018, we also fully redeemed the \$36 million of Dekania Notes at par.

Our diversified underwriting portfolio has demonstrated an ability to withstand catastrophic losses. We have generated positive operating cash flows in all years since 2003, with the exception of 2009 which was impacted by the global financial crisis. These positive cash flows were generated notwithstanding the impacts of the global financial crisis and the recognition of significant natural catastrophe-related losses during the period.

Net losses and loss expenses, gross of reinstatement premiums, included \$257 million for the Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian, and the Australia Wildfires in 2019, \$327 million for Hurricanes Michael and Florence, the California Wildfires, and Typhoon Jebi in 2018, and \$744 million for Hurricanes Harvey, Irma and Maria, and the two earthquakes in Mexico and the California Wildfires in 2017. There remains significant uncertainty associated with estimates of net losses for certain of these events (refer to *'Underwriting Results – Consolidated – Current Accident Year Loss Ratio'* for further details), as well as the timing of the associated cash outflows.

Should claim payment obligations accelerate beyond our ability to fund payments from operating cash flows, we would utilize cash and cash equivalent balances and/or liquidate a portion of our investment portfolio. Our investment portfolio is heavily weighted towards conservative, high quality and highly liquid securities. We expect that, if necessary, approximately \$13.6 billion of cash and invested assets at December 31, 2019 could be available in one to three business days under normal market conditions; of this amount, \$5.3 billion related to restricted assets, which primarily support our obligations in regulatory jurisdictions where we operate as a non-admitted carrier (refer to Item 8, Note 5(g) to the Consolidated Financial Statements *'Investments'* for further details). For context, our largest 1-in-250 year return period, single occurrence, single-zone modeled probable maximum loss (Southeast U.S. Hurricane) was approximately \$428 million, net of reinsurance. Claim payments pertaining to such an event would be paid out over a period spanning many months. Our internal risk tolerance framework aims to limit the loss of capital due to a single event, and the loss of capital that would occur from multiple but perhaps smaller events, in any year (refer to Item 1 *'Risk and Capital Management'* for further details).

We continue to expect that cash flows generated from operations, combined with the liquidity provided by our investment portfolio, will be sufficient to cover required cash outflows and other contractual commitments through the foreseeable future (refer to *'Contractual Obligations and Commitments'* below for further details).

Capital Resources

In addition to common equity, we have utilized other external sources of financing, including debt, preferred shares and letter of credit facilities to support our business operations. We believe that we hold sufficient capital to allow us to take advantage of market opportunities and to maintain our financial strength ratings, as well as to comply with various local statutory regulations. We monitor capital adequacy on a regular basis and will seek to adjust our capital base (up or down) according to the needs of our business (refer to Item 1 *'Risk and Capital Management'* for further details).

Our capital position was as follows:

At December 31,	2019	2018
Debt	\$ 1,808,157	\$ 1,341,961
Preferred shares	775,000	775,000
Common equity	4,769,008	4,255,071
Shareholders' equity	5,544,008	5,030,071
Total capital	\$ 7,352,165	\$ 6,372,032
Ratio of debt to total capital	24.6%	21.1%
Ratio of debt and preferred equity to total capital	35.1%	33.2%

We finance our operations with a combination of debt and equity capital. Debt to total capital and debt and preferred equity to total capital ratios provide an indication of our capital structure, along with some insight into our financial strength.

At December 31, 2019, the consolidated balance sheet reflected an increase in debt due to the issuance of \$300 million aggregate principal amount of 3.900% Senior Notes due 2029 and the issuance of \$425 million aggregate principal amount of Junior Subordinated Notes due 2040 (refer to Item 1, Note 10 to the Consolidated Financial Statements 'Debt and Financing Arrangements' for further details), partially offset by the repayment of \$250 million aggregate principal amount of 2.650% Senior Notes at their stated maturity on April 1, 2019.

We believe that our financial flexibility remains strong.

Debt

Debt represents the 5.875% Senior Notes issued in 2010, which will mature in 2020 and the 5.150% Senior Notes issued in 2014, which will mature in 2045, the 4.000% Senior Notes issued in 2017, which will mature in 2027, the 3.900% Senior Notes issued in 2019, which will mature in 2029 and the 4.900% Junior Subordinated Notes issued in 2019, which will mature in 2040 (refer to Item 8, Note 10(a) to the Consolidated Financial Statements 'Debt and Financing Arrangements' for further details).

The 4.000% Senior Notes issued in 2017 were issued to refinance the 2.650% Senior Notes that matured and were repaid on April 1, 2019. The 3.900% Senior Notes and 4.900% Junior Subordinated Notes were issued to refinance the 5.875% Senior Notes maturing on June 1, 2020 and to finance the redemption of our Series D preferred shares on January 17, 2020 (refer to 'Preferred Shares' below for further details).

Preferred Shares

Series D Preferred Shares

On May 20, 2013, we issued \$225 million of 5.50% Series D preferred shares with a liquidation preference of \$25.00 per share. Dividends on the Series D preferred shares were non-cumulative. To the extent declared, dividends accumulated, with respect to each dividend period, in an amount per share equal to 5.50% of the liquidation preference per annum. On January 17, 2020, we redeemed all outstanding Series D preferred shares, for an aggregate liquidation preference of \$225 million (refer to Item 8, Note 14 to the Consolidated Financial Statements 'Shareholder's Equity' and Note 23 of the Consolidated Financial Statements 'Subsequent Events' for further details).

Series E Preferred Shares

On November 7, 2016, we issued \$550 million of 5.50% Series E preferred shares with a liquidation preference of \$2,500 per share (equivalent to \$25 per depositary share). Dividends on the Series E preferred shares are non-cumulative. To the extent declared, dividends will accumulate, with respect to each dividend period, in an amount per share equal to 5.50% of the liquidation preference per annum (equivalent to \$137.50 per Series E preferred share and \$1.375 per depositary share). We may redeem these shares on or after November 7, 2021 at a redemption price of \$2,500 per Series E preferred share (equivalent to \$25 per depositary share).

Common Equity

Underlying movements in common equity over the past two years were as follows:

Year ended December 31,	2019	2018
Common equity - opening	\$ 4,255,071	\$ 4,566,264
Net income	323,473	43,021
Change in unrealized losses on available for sale investments, net of tax	349,886	(190,829)
Share repurchases	(10,165)	(10,080)
Common share dividends	(138,487)	(134,748)
Preferred share dividends	(41,112)	(42,625)
Share-based compensation expense	29,675	33,505
Foreign currency translation adjustment	(1,066)	(11,165)
Other	1,728	1,728
Common equity - closing	\$ 4,769,003	\$ 4,255,071

Share Repurchases

On December 31, 2017, authorization under the Board-authorized share repurchase plan for common share repurchases through 2017 expired. A common share repurchase plan has not been authorized since that date.

Secured Letter of Credit Facilities

We routinely enter into agreements with financial institutions to obtain secured letter of credit facilities. These facilities are primarily used for the issuance of letters of credit, in the normal course of operations, to certain insurance and reinsurance entities that purchase reinsurance protection from us. These letters of credit allow those operations to take credit, under local insurance regulations, for reinsurance obtained in jurisdictions where AXIS Capital's subsidiaries are not licensed or otherwise admitted as an insurer. The value of our letters of credit outstanding is driven by, among other factors, the amount of unearned premiums, development of loss reserves, the payment patterns of loss reserves, the expansion of our business and the loss experience of that business. A portion of these facilities may also be used for liquidity purposes.

On March 28, 2019 certain of AXIS Capital's operating subsidiaries (the "Participating Subsidiaries") amended an existing \$250 million secured letter of credit facility (the "\$250 million Facility") with Citibank Europe plc to extend the expiration date to March 31, 2020.

On December 24, 2019, the Participating Subsidiaries also amended an existing \$500 million secured letter of credit facility (the "\$500 million Facility") with Citibank Europe plc to extend the expiration date to December 31, 2023.

Letters of credit issued under the \$250 million facility and the \$500 million facility are principally be used to support the reinsurance obligations of the Participating Subsidiaries. These facilities are subject to certain covenants, including the requirement to maintain sufficient collateral to cover the obligations outstanding under the facilities. Such obligations include contingent reimbursement obligations for outstanding letters of credit and fees payable to Citibank. In the event of default, Citibank may exercise certain remedies, including the exercise of control over pledged collateral and the termination of the facility to any or all of the Participating Subsidiaries.

At December 31, 2019, letters of credit outstanding were \$357 million (refer to Item 8, Note 10 to the Consolidated Financial Statements '*Debt and Financing Arrangements*' for further details).

Shelf Registrations

On November 19, 2019, we filed an unallocated universal shelf registration statement with the SEC, which became effective on filing. Pursuant to the shelf registration, we may issue an unlimited amount of equity, debt, warrants, purchase contracts or a combination of these securities. Our intent and ability to issue securities pursuant to this registration statement will depend on market conditions at the time of any proposed offering.

Financial Strength Ratings

Our principal insurance and reinsurance operating subsidiaries are assigned financial strength ratings from internationally recognized rating agencies, including Standard & Poor's, A.M. Best and Moody's Investors Service. These ratings are publicly announced and are available directly from the agencies, as well as on our website.

Financial strength ratings represent the opinions of the rating agencies on the overall financial strength of a company and its capacity to meet the obligations of its insurance and reinsurance contracts. Independent ratings are one of the important factors that establish a competitive position in insurance and reinsurance markets. The rating agencies consider many factors in determining the financial strength rating of an insurance company, including the relative level of statutory surplus necessary to support the business operations of the company. These ratings are based on factors considered by the rating agencies to be relevant to policyholders, agents and intermediaries and are not directed toward the protection of investors. Ratings are not recommendations to buy, sell or hold securities.

The following are the most recent financial strength ratings from internationally recognized agencies in relation to our principal insurance and insurance operating subsidiaries:

Rating agency	Agency's description of rating	Rating and outlook	Agency's rating definition	Ranking of rating
Standard & Poor's	An "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".	A+ (Stable) ⁽¹⁾	"Strong capacity to meet its financial commitments"	The 'A' grouping is the third highest out of ten major rating categories. The second through eighth major rating categories may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories.
A.M. Best	An "opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations".	A+ (Negative) ⁽²⁾	"Superior ability to meet ongoing insurance obligations"	The 'A+' grouping is the second highest rating out of fourteen. Ratings outlooks ('Positive', 'Negative' and 'Stable') are assigned to indicate a rating's potential direction over an intermediate term, generally defined as 36 months.
Moody's Investors Service	"Opinions of the ability of insurance companies to pay punctually senior policyholder claims and obligations."	A2 (Negative) ⁽³⁾	"Offers good financial security"	The 'A' grouping is the third highest out of nine rating categories. Each of the second through seventh categories are subdivided into three subcategories, as indicated by an appended numerical modifier of '1', '2' and '3'. The '1' modifier indicates that the obligation ranks in the higher end of the rating category, the '2' modifier indicates a mid-category ranking and the '3' modifier indicates a ranking in the lower end of the rating category.

(1) On December 12, 2018, Standard & Poor's revised its outlook from negative to stable, which reflected their expectation that capital redundancy at the 'AAA' level would be restored by year-end 2019.

(2) On February 16, 2018, A.M. Best revised its outlook from stable to negative. The revised outlook was based on unfavorable trends in operating performance, particularly emanating from the insurance segment.

(3) In April 2019, Moody's Investor Service revised its outlook from stable to negative reflecting higher operational and financial leverage and lower capitalization relative to peers.

Contractual Obligations and Commitments

At December 31, 2019, contractual obligations and commitments by period due were:

Contractual obligations and commitments	Payment due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating activities					
Estimated gross losses and loss expenses payments ⁽¹⁾	\$ 12,752,081	\$ 3,299,764	\$ 3,925,672	\$ 2,076,156	\$ 3,450,489
Operating lease obligations ⁽²⁾	144,612	19,225	39,178	27,647	58,562
Investing activities					
Unfunded investment commitments ⁽³⁾	\$ 619,948	\$ 201,372	110,940	151,125	156,511
Financing activities					
Debt (principal payments) ⁽⁴⁾	\$ 1,825,000	\$ 500,000	—	—	1,325,000
Debt (interest payments) ⁽⁴⁾⁽⁵⁾	\$ 904,508	\$ 71,640	118,800	118,800	595,268
Total	\$ 16,246,149	\$ 4,092,001	\$ 4,194,590	\$ 2,373,728	\$ 5,585,830

- (1) We are obligated to pay claims for specified loss events covered by the insurance and reinsurance contracts that we write. Loss payments represent our most significant future payment obligation. In contrast to our other contractual obligations, cash payments are not determinable from the terms specified within the underlying contracts. Our best estimate of reserve for losses and loss expenses is reflected in the table above. Actual amounts and timing may differ materially from our best estimate (refer to 'Critical Accounting Estimates – Reserve for Losses and Loss Expenses' for further details). We have not taken into account corresponding reinsurance recoverable on unpaid amounts that would be due to us.
- (2) In the ordinary course of business, we renew and enter into new leases for office space which expire at various dates (refer to Item 8, Note 12 to the Consolidated Financial Statements 'Leases' for further details).
- (3) We have \$588 million of unfunded investment commitments related to our other investments portfolio, which are callable by our investment managers (refer to Item 8, Note 5(c) to the Consolidated Financial Statements 'Investments' for further details). In addition, we have \$32 million of unfunded commitments related to our commercial mortgage loans portfolio.
- (4) Refer to Item 8, Note 10(a) to the Consolidated Financial Statements 'Debt and Financing Arrangements' for further details.
- (5) Debt (interest payments) includes \$17 million of unamortized discount and debt insurance expenses.

CRITICAL ACCOUNTING ESTIMATES

The consolidated financial statements include certain amounts that are inherently uncertain and judgmental in nature. As a result, we are required to make assumptions and best estimates in order to determine the reported values. We consider an accounting estimate to be critical if: (1) it requires that significant assumptions be made in order to deal with uncertainties and (2) changes in the estimate could have a material impact on our results of operations, financial condition or liquidity.

We believe that the material items requiring such subjective and complex estimates are:

- reserves for losses and loss expenses;
- reinsurance recoverable on unpaid losses and loss expenses, including the provision for uncollectible amounts;
- gross premiums written and net premiums earned;
- fair value measurements of financial assets and liabilities; and
- other-than-temporary impairments ("OTTI") in the carrying value of available for sale securities.

Significant accounting policies are also important to understanding the consolidated financial statements (refer to Item 8, Note 2 to the Consolidated Financial Statements 'Basis of Presentation and Significant Accounting Policies' for further details).

We believe that the amounts included in the consolidated financial statements reflect its best judgment. However, factors such as those described in Item 1A 'Risk Factors' could cause actual events or results to differ materially from the underlying assumptions and estimates which could lead to a material adverse impact on our results of operations, financial condition or liquidity.

Reserve for Losses and Loss Expenses

Overview

We believe the most significant accounting judgment we make is the estimate of reserve for losses and loss expenses ("loss reserves"). Loss reserves represent management's estimate of the unpaid portion of our ultimate liability for losses and loss expenses ("ultimate losses") for insured and reinsured events that have occurred at or before the balance sheet date. Loss reserves reflect both claims that have been reported ("case reserves") to us and claims that have been incurred but not reported ("IBNR") to us. Loss reserves represent our best estimate of what the ultimate settlement and administration of claims will cost, based on our assessment of facts and circumstances known at that particular point in time.

Loss reserves are not an exact calculation of the liability but instead, are complex estimates. The process of estimating loss reserves involves a number of variables (refer to *'Selection of Reported Reserves – Management's Best Estimate'* below for further details). We review estimates of loss reserves each reporting period and consider all significant facts and circumstances known at that particular point in time. As additional experience and other data become available and/or laws and legal interpretations change, we may adjust previous estimates of loss reserves. Adjustments are recognized in the period in which they are determined therefore they can impact that period's underwriting results either favorably (indicating that current estimates are lower than previous estimates) or adversely (indicating that current estimates are higher than previous estimates).

Case Reserves

With respect to insurance business, we are generally notified of losses by our insureds and/or their brokers. Based on this information, our claims personnel estimate ultimate losses arising from the claim, including the cost of administering the claims settlement process. These estimates reflect the judgment of our claims personnel based on general reserving practices, the experience and knowledge of such personnel regarding the nature of the specific claim and, where appropriate, the advice of legal counsel, loss adjusters and other relevant consultants.

With respect to reinsurance business, we are generally notified of losses by ceding companies and/or their brokers. For excess of loss contracts, we are typically notified of insured losses on specific contracts and record a case reserve for the estimated ultimate liability arising from the claim. For contracts written on a proportional basis, we typically receive aggregated claims information and record a case reserve for the estimated ultimate liability arising from the claim based on that information. Proportional reinsurance contracts typically require that losses in excess of pre-defined amounts be separately notified so we can adequately evaluate them. Our claims department evaluates each specific loss notification we receive and records additional case reserves when a ceding company's reserve for a claim is not considered adequate.

In deciding whether to provide treaty reinsurance, we carefully review and analyze a cedant's underwriting and risk management practices to ensure appropriate underwriting, data capture and reporting procedures. We also undertake an extensive program of cedant audits, using outsourced legal and industry experience where necessary. This allows us to review cedants' claims administration practices to ensure that reserves are consistent with exposures, adequately established, and properly reported in a timely manner.

IBNR

The estimation of IBNR is necessary due to potential development on reported claims and the time lag between when a loss event occurs and when it is actually reported, which is referred to as a reporting lag. Reporting lags may arise from a number of factors, including but not limited to, the nature of the loss, the use of intermediaries and complexities in the claims adjusting process. As we do not have specific information on IBNR, it must be estimated. IBNR is calculated by deducting incurred losses (i.e. paid losses and case reserves) from management's best estimate of ultimate losses. In contrast to case reserves, which are established at the contract level, IBNR reserves are generally estimated at an aggregate level and cannot be identified as reserves for a particular loss event or contract (refer to *'Reserving for Significant Catastrophic Events'* below for further details).

Sources of Information

Our quarterly loss reserving process begins with the collection and analysis of paid and incurred claim data for each of the segments. The segmental data is disaggregated by reserve class and further disaggregated by underwriting year and accident year. Underwriting year or accident year information is used to analyze our business and to estimate loss reserves. Reserve classes are selected to ensure that the underlying contracts have homogeneous loss development characteristics, while remaining large enough to make the estimation of trends credible. Reserve classes are reviewed on a regular basis and adjusted over time as our business evolves. The paid and incurred claim data, in addition to industry benchmarks, serves as a key input to many of the methods employed by our actuaries. The relative weights assigned to our historical loss data versus industry data vary based on a number of factors including our historical track record and the development profile for the reserve class being evaluated (*refer to 'Claim Tail Analysis'* below for further details).

Actuarial Analysis

Multiple actuarial methods are available to estimate ultimate losses. Each method has its own assumptions and its own advantages and disadvantages, with no single estimation method being better than the others in all situations and no one set of assumption variables being meaningful for all reserve classes. The relative strengths and weaknesses of the particular estimation methods when applied to a particular group of claims can also change over time.

The following is a brief description of the reserve estimation methods commonly employed by our actuaries including a discussion of their particular strengths and weaknesses:

- Expected Loss Ratio Method ("ELR Method"): This method estimates ultimate losses for an accident year or underwriting year by applying an expected loss ratio to the earned or written premium for that year. Generally, expected loss ratios are based on one or more of (a) an analysis of historical loss experience to date, (b) pricing information and (c) industry data, adjusted as appropriate, to reflect changes in rates, loss and exposure trends, and terms and conditions. This method is insensitive to actual incurred losses for the accident year or underwriting year in question and is, therefore, often useful in the early stages of development when very few losses have been incurred. Conversely, the lack of sensitivity to incurred/paid losses for the accident year or underwriting year in question means that this method is usually inappropriate in later stages of an accident year or underwriting year's development.
- Loss Development Method (also referred to as the "Chain Ladder Method" or "Link Ratio Method"): This method assumes that the losses incurred/paid for each accident year or underwriting year at a particular development stage follow a relatively similar pattern. It assumes that on average, every accident year or underwriting year will display the same percentage of ultimate losses incurred/paid at the same point in time after the inception of that year. The percentages incurred/paid are established for each development stage (e.g. 12 months, 24 months, etc.) after examining averages from historical loss development data and/or external industry benchmark information. Ultimate losses are then estimated by multiplying the actual incurred/paid losses by the reciprocal of the established incurred/paid percentage. The strengths of this method are that it reacts to loss emergence/payments and that it makes full use of historical claim emergence/payment experience. However, this method has weaknesses when the underlying assumption of stable loss development/payment patterns is not valid. This could be the consequence of changes in business mix, claim inflation trends or claim reporting practices and/or the presence of large claims, among other things. Furthermore, this method tends to produce volatile estimates of ultimate losses where there is volatility in the underlying incurred/paid patterns. In particular, where the expected percentage of incurred/paid losses is low, small deviations between actual and expected claims can lead to very volatile estimates of ultimate losses. As a result, this method is often unsuitable at early development stages for an accident year or underwriting year.
- Bornhuetter-Ferguson Method ("BF Method"): This method can be seen as a combination of the ELR and Loss Development Methods, under which the Loss Development Method is given progressively more weight as an accident year or underwriting year matures. The main advantage of the BF Method is that it provides a more stable estimate of ultimate losses than the Loss Development Method at earlier stages of development, while remaining more responsive to emerging loss development than the ELR Method. In addition, the BF Method allows for the incorporation of external market information through the use of expected loss ratios, whereas the Loss Development Method does not incorporate such information.

As part of our quarterly loss reserving process, our actuaries employ the estimation method(s) that they believe will produce the most reliable estimate of ultimate losses, at that particular evaluation date, for each reserve class and accident year or underwriting year combination. Often, this is a blend (i.e. weighted average) of the results of two or more appropriate actuarial methods. These ultimate loss estimates are generally utilized to evaluate the adequacy of ultimate loss estimates for previous

accident or underwriting years, established in the prior reporting period. For the initial estimate of the current accident or underwriting year, the available claim data is typically insufficient to produce a reliable estimate of ultimate losses. As a result, initial estimates for an accident or underwriting year is generally based on the ELR Method for longer tailed lines and a BF method for shorter tailed lines. The initial ELR for each reserve class is established collaboratively by our actuaries, underwriters and management at the start of the year as part of the planning process, taking into consideration prior accident years' or underwriting years' experience and industry benchmarks, adjusted after considering factors such as loss and exposure trends, rate differences, changes in contract terms and conditions, business mix changes and other known differences between the current year and prior accident or underwriting years. The initial expected loss ratios for a given accident or underwriting year may be modified over time if the underlying assumptions, such as loss development or premium rate changes, differ from the original assumptions.

Key Actuarial Assumptions

The use of the above actuarial methods requires us to make certain explicit assumptions, the most significant of which are: (1) expected loss ratios and (2) loss development patterns.

In earlier years, we placed significant reliance on industry benchmarks in establishing expected loss ratios and selecting loss development patterns. Over time, we have placed more reliance on our historical loss experience in establishing these ratios and selecting these patterns where we believe the weight of our experience has become sufficiently credible for consideration. The weight given to our experience differs for each of the three claim tail classes (refer to '*Claim Tail Analysis*' below for further details). In establishing expected loss ratios for the insurance segment, we give consideration to a number of other factors, including exposure trends, rate adequacy on new and renewal business, ceded reinsurance costs, changes in claims emergence and our underwriters' view of terms and conditions in the market environment. For the reinsurance segment, expected loss ratios are based on a contract-by-contract review, which considers information provided by clients together with estimates provided by our underwriters and actuaries about the impact of changes in pricing, terms and conditions and coverage. We also have considered the market experience of some classes of business as compiled and analyzed by an independent actuarial firm, as appropriate.

Claim Tail Analysis

Gross loss reserves for each of the reportable segments, segregated between case reserves and IBNR and by significant reserve class were as follows:

At December 31,	2019			2018		
	Case reserves	IBNR	Total	Case reserves	IBNR	Total
Insurance segment:						
Property and other	\$ 655,262	\$ 327,475	\$ 982,737	\$ 792,022	\$ 505,071	\$ 1,297,092
Marine	235,549	281,677	517,226	208,620	335,889	544,508
Aviation	116,932	31,445	148,377	102,954	41,554	144,508
Credit and political risk	5,905	124,109	130,014	(3,171)	127,098	123,927
Professional lines	806,780	2,041,317	2,848,097	678,047	1,980,164	2,658,212
Liability	396,837	1,473,280	1,870,117	317,449	1,340,613	1,658,062
Total Insurance	<u>2,217,265</u>	<u>4,279,303</u>	<u>6,496,568</u>	<u>2,095,920</u>	<u>4,330,389</u>	<u>6,426,309</u>
Reinsurance segment:						
Property and other	879,301	1,186,655	2,065,958	890,747	902,493	1,793,240
Credit and surety	125,029	190,368	315,397	125,256	231,222	356,478
Professional lines	429,576	688,439	1,118,015	432,137	702,449	1,134,586
Motor	778,534	516,148	1,294,681	701,600	517,542	1,219,142
Liability	431,211	1,030,252	1,461,462	380,544	970,470	1,351,014
Total Reinsurance	<u>2,643,651</u>	<u>3,611,862</u>	<u>6,255,513</u>	<u>2,530,284</u>	<u>3,324,176</u>	<u>5,854,460</u>
Total	\$ 4,860,916	\$ 7,891,165	\$ 12,752,081	\$ 4,626,204	\$ 7,654,565	\$ 12,280,769

In order to capture the key dynamics of loss reserve development and potential volatility, reserve classes should be considered according to their potential expected length of loss emergence and settlement, generally referred to as the "tail". We consider our business to consist of three claim tail classes: short-tail, medium-tail and long-tail. Favorable development on prior accident year reserves indicates that current estimates are lower than previous estimates, while adverse development on prior accident year reserves indicates that current estimates are higher than previous estimates. Below is a discussion of the specifics of our loss reserve process as it applies to each claim tail class, as well as commentary on the factors contributing to our historical loss reserve development for each class.

Short-tail Business

Short-tail business generally includes exposures for which losses are usually known and paid within a relatively short period of time after the underlying loss event has occurred. Our short-tail business primarily relates to property coverages and includes terrorism, accident and health, discontinued lines - Novae, marine, and aviation hull and war business in the insurance segment, together with the catastrophe, property, engineering, agriculture, marine and other, accident and health, and discontinued lines - Novae business in the reinsurance segment.

The key actuarial assumptions for short-tail business in early accident years were primarily developed with reference to industry benchmarks for expected loss ratios and loss development patterns. As our historical loss experience amassed, it gained credibility and became relevant for consideration in establishing these key actuarial assumptions. As a result, we gradually increased the weighting assigned to our historical loss experience in selecting the expected loss ratios and loss development patterns utilized to establish estimates of ultimate losses for an accident year.

Due to the relatively short reporting and settlement patterns for short-tail business, we generally place more weight on experience-based methods and other qualitative considerations in establishing reserves for recent and more mature accident years. Refer to *'Underwriting Results – Consolidated – Prior Year Reserve Development'* for further details.

Although estimates of ultimate losses for short-tail business are inherently more certain than for medium and long-tail business, significant judgment is still required. For example, much of our excess insurance and excess of loss reinsurance business has high attachment points, therefore, it is often difficult to estimate whether claims will exceed those attachment points. Also, the inherent uncertainties relating to catastrophe events further add to the complexity of estimating potential exposure. In addition, we use managing general agents ("MGAs") and other producers for certain business in the insurance

segment which can delay the reporting of loss information to us. We expect that the majority of development for an accident year or underwriting year will be recognized in the subsequent one to three years.

Medium-tail Business

Medium-tail business generally has claim reporting and settlement periods that are longer than those of short-tail reserve classes. Our medium-tail business primarily consists of insurance and reinsurance professional lines, reinsurance credit and surety, aviation liability business in the insurance and discontinued lines - Novae in the insurance segment. We also consider insurance credit and political risk business to have a medium tail, due to the complex nature of claims and the potential additional time that may be required to realize subrogation assets.

For our earliest accident and underwriting years, initial key actuarial expected loss ratio and loss development assumptions were established utilizing industry benchmarks. Due to the longer claim tail, the length of time required to develop credible loss history for use in the loss reserving process is greater for medium-tail business than for short-tail business. Our reserving approach for medium-tail business is tailored by line of business, with significant lines of business being specifically addressed below:

- Insurance and Reinsurance Professional Lines

For professional lines business and discontinued lines - Novae, claim payment and reporting patterns are typically medium to long-tail in nature. This business is predominantly written on a claims-made basis.

With respect to key actuarial assumptions, we rely on our loss experience when establishing expected loss ratios and selected loss development patterns. Loss reporting patterns for professional lines business tend to be volatile, causing instability in actuarial indications based on incurred loss data until an accident year or underwriting year matures. Consequently, initial loss reserves for an accident year or underwriting year are generally based on an ELR method and the consideration of relevant qualitative factors. As accident years and underwriting years mature, we increasingly give more weight to methods that reflect our experience until selections are based almost exclusively on experience-based methods. We evaluate the appropriateness of the transition to experience-based methods at the reserve class level, commencing this transition when we believe that our incurred loss development is sufficient to produce meaningful actuarial indications. The rate at which we transition fully to sole reliance on experience-based methods can vary by reserve class and by year, depending on our assessment of the stability and relevance of such indications. For some professional lines in the insurance segment, we also rely on the evaluation of the open claim inventory in addition to the commonly employed actuarial methods when establishing reserves.

Our transition from the ELR method to experience-based methods began in 2008, when we commenced gradual transition for the 2004 and prior accident years. As our loss history continued to develop, the transition was expanded to include additional accident years. Refer to *'Underwriting Results – Consolidated – Prior Year Development'* for further details.

- Reinsurance Credit and Surety

For reinsurance credit and surety business, initial and most recent underwriting year loss projections are generally based on the ELR method, with consideration given to qualitative factors. Given that there is a quicker and more stable reporting pattern for trade credit and mortgage business, we generally commence the transition to experience-based methods for these lines of business sooner than for surety business.

- Insurance Credit and Political Risk

Refer to *'Reserving for Credit and Political Risk Business'* below for a more detailed discussion of specific loss reserve issues related to this business. When considering prior year reserve development for this line of business, it is important to note that the multi-year nature of the credit business distorts loss ratios when a single accident year is considered in isolation. In recent years, the average term of these contracts has been four to five years. Premiums for these contracts generally earn evenly over the contract term, therefore, are reflected in multiple accident years. In contrast, losses incurred on these contracts, which can be characterized as low in frequency and high in severity, are reflected in a single accident year.

The estimation of the value of recoveries on credit and political risk business requires significant management judgment. At December 31, 2019, estimated recoveries on credit and political risk business were \$35 million (2018: \$24 million).

Long-tail Business

In contrast to short and medium-tail business, the claim tail for long-tail business is expected to be notably longer, as claims are often reported and ultimately paid or settled years, or even decades, after the related loss events occur. Our long-tail business primarily relates to liability business written in the insurance and reinsurance segments, and reinsurance motor business, and discontinued lines - Novae in the insurance and reinsurance segments.

As a general rule, estimates of accident year or underwriting year ultimate losses for long-tail business are notably more uncertain than those for short and medium-tail business. Factors that contribute additional uncertainty to estimates for long-tail business include, but are not limited to:

- more significant weight given to industry benchmarks in forming our key actuarial assumptions;
- potential volatility of actuarial estimates, given the number of years of development it takes to produce a meaningful incurred loss as a percentage of ultimate losses;
- inherent uncertainties about loss trends, claims inflation (e.g. medical, judicial, social) and general economic conditions; and
- the possibility of future litigation, legislative or judicial change that may impact future loss experience relative to the prior industry loss experience relied on in reserve estimation.

To date, key actuarial assumptions for long-tail business have been derived from a combination of industry benchmarks supplemented our historical loss experience. While we consider industry benchmarks that we believe reflect the nature and coverage of our business, actual loss experience may differ from the benchmarks based on industry averages.

Due to the length of the development tail for this business, reserve estimates for most accident years and underwriting years are predominantly based on the BF or ELR method and the consideration of qualitative factors. As part of our quarterly loss reserving process, we monitor actual paid and incurred loss emergence relative to expected loss emergence based on selected loss development patterns. The drivers of any unfavorable loss emergence are investigated and, as a result, have led to an immediate recognition of adverse development in some instances.

Prior to the fourth quarter of 2012, we did not recognize any favorable loss emergence. As a result, during some periods, we recognized net adverse prior year reserve development for insurance liability business in light of unfavorable loss emergence for certain reserve class and accident year combinations.

Commencing with the fourth quarter 2012 loss reserving process, we began to give weight to actuarial methods that reflect our experience for liability business as we believed that our oldest accident years were at a stage of expected development where such methods would produce meaningful actuarial indications.

In 2019, we continued to give weight to experience-based methods on the earlier years for insurance and reinsurance liability lines of business leading to the recognition of net favorable prior year reserve development on the reinsurance liability reserve class.

Reserving for Credit and Political Risk Business

Our insurance credit and political risk business consists primarily of credit insurance and confiscation, expropriation, nationalization and deprivation coverages ("CEND"). Claims for this business tend to be characterized by their severity risk, as opposed to their frequency risk therefore, claim payment and reporting patterns are anticipated to be volatile. Under the notification provisions of our credit insurance policies, we anticipate being advised of an insured event within a relatively short time period. Consequently, we generally estimate ultimate losses based on a contract-by-contract analysis which considers the contracts' terms, the facts and circumstances of underlying loss events and qualitative input from claims managers.

An important and distinguishing feature of many of these contracts is the contractual right, subsequent to payment of a claim to an insured, to be subrogated to, or otherwise have an interest in, the insured's rights of recovery under an insured loan or facility agreement. These estimated recoveries are recorded as an offset to credit and political risk loss reserves. The lag between the date of a claim payment and the ultimate recovery from the corresponding security can result in negative case reserves at a point in time (as was the case at December 31, 2019 and 2018). The nature of the underlying collateral is specific to each transaction therefore we estimate the value of this collateral on a contract-by-contract basis. This valuation process is inherently subjective and involves the application of management's judgment because active markets for the collateral often do not exist. Estimates of values are based on numerous inputs, including information provided by our insureds, as well as third-party sources including rating agencies, asset valuation specialists and other publicly available information. We also assess any post-event circumstances, including restructurings, liquidations and possession of asset proposals/agreements.

In some instances, on becoming aware of a loss event related to credit and political risk business, we negotiate a final settlement of all of our policy liabilities for a fixed amount. In most circumstances, this occurs when the insured moves to realize the benefit of the collateral that underlies the insured loan or facility and presents us with a net settlement proposal that represents a full and final payment by us under the terms of the policy. In consideration for this payment, we secure a cancellation of the policy, or a release of all claims, and waive our right to pursue a recovery of these settlement payments

against the security that may have been available to us under the insured loan or facility agreement. In certain circumstances, cancellation by way of net settlement or full payment can result in an adjustment to the premium associated with the policy.

Reserving for Significant Catastrophic Events

We cannot estimate losses from widespread catastrophic events, such as hurricanes and earthquakes, using the traditional actuarial methods described above. Loss reserves for such events are estimated by management after a catastrophe occurs by completing an in-depth analysis of individual contracts which may potentially have been impacted by the catastrophic event. This in-depth analysis may rely on several sources of information including:

- estimates of the size of insured industry losses from the catastrophic event and our corresponding market share;
- a review of our portfolio of contracts to identify those contracts which may be exposed to the catastrophic event;
- a review of modeled loss estimates based on information previously reported by customers and brokers, including exposure data obtained during the underwriting process;
- discussions of the impact of the event with our customers and brokers; and
- catastrophe bulletins published by various independent statistical reporting agencies.

We generally use a blend of these information sources to arrive at aggregate estimate of the ultimate losses arising from the catastrophic event. In subsequent reporting periods, we review changes in paid and incurred losses in relation to each significant catastrophe and adjust estimates of ultimate losses for each event if there are developments that are different from previous expectations. Adjustments are recorded in the period in which they are identified.

There are additional risks affecting our ability to accurately estimate ultimate losses for catastrophic events. For example, the estimates of loss reserves related to hurricanes and earthquakes can be affected by factors including, but not limited to, the inability to access portions of impacted areas, infrastructure disruptions, the complexity of factors contributing to losses, legal and regulatory uncertainties, complexities involved in estimating business interruption losses and additional living expenses, the impact of demand surge, fraud and the limited nature of information available. For hurricanes, additional complex coverage factors may include determining whether damage was caused by flooding or wind, evaluating general liability and pollution exposures, and mold damage. The timing of a catastrophe, for example, near the end of a reporting period, can also affect the level of information available to us to estimate loss reserves for that reporting period. Results of operations for 2019 and 2018 were impacted by natural catastrophe activity (refer to '*Underwriting Results – Consolidated – Current Accident Year Loss Ratio*' for further details).

Selection of Reported Reserves – Management's Best Estimate

Our quarterly loss reserving process involves the collaboration of our underwriting, claims, actuarial, legal, ceded reinsurance and finance departments, includes various segmental committee meetings and culminates with the approval of a single point best estimate by our Group Reserving Committee, which comprises senior management. In selecting this best estimate, management considers actuarial estimates and applies informed judgment regarding qualitative factors that may not be fully captured in these actuarial estimates. Such factors include, but are not limited to: the timing of the emergence of claims, volume and complexity of claims, social and judicial trends, potential severity of individual claims and the extent of our historical loss data versus industry information. While these qualitative factors are considered in arriving at the point estimate, no specific provisions for qualitative factors are established.

With regard to establishing the fair value of reserves for losses and loss expenses for Novae at the acquisition date, weight was given to the observable value of these reserves based on the RITC transaction of the 2015 and prior years of account of Syndicate 2007, which was completed prior to the allocation of purchase price. Management made no change to the initial estimate when establishing its best estimate of reserves for losses and loss expenses at December 31, 2017. This is consistent with our general approach of recognizing all or part of the anticipated cost of third-party liability commutations if the transaction has either completed or is considered sufficiently likely to be completed in the near term.

Beginning in 2013, we significantly enhanced the capabilities and resources dedicated to the actuarial reserving function. Consequently, from the first quarter of 2014, management began to rely on its internal actuarial reserving function for its quarterly loss reserving process rather than utilizing the services of an independent actuarial firm. On an annual basis, we use an independent actuarial firm to provide an actuarial opinion on the reasonableness of loss reserves for each of our operating subsidiaries and statutory reporting entities as these actuarial opinions are required to meet various insurance regulatory requirements. The actuarial firm also discusses its conclusions from the annual review with management and presents its findings to our Board of Directors.

Sensitivity Analysis

While we believe that loss reserves at December 31, 2019 are adequate, new information, events or circumstances may result in ultimate losses that are materially greater or less than provided for in our loss reserves. As previously noted, there are many factors that may cause reserves to increase or decrease, particularly those related to catastrophe losses and long-tail lines of business.

Expected loss ratios are a key assumption in estimates of ultimate losses for business at an early stage of development. A higher expected loss ratio results in a higher ultimate loss estimate, and vice versa. Assumed loss development patterns are another significant assumption in estimating loss reserves. Accelerating a loss reporting pattern (i.e. shortening the claim tail) results in lower ultimate losses, as the estimated proportion of losses already incurred would be higher. The uncertainty in the timing of the emergence of claims (i.e. the length of the development pattern) is generally greater for a company with a relatively limited operating history therefore, we rely on industry benchmarks to a certain extent when establishing loss reserve estimates.

The effect on estimates of gross loss reserves of reasonably likely changes in the two key assumptions used to estimate gross loss reserves at December 31, 2019 was as follows:

INSURANCE				
Development pattern	Expected loss ratio			
<i>Property and other</i>	5% lower	Unchanged	5% higher	
3 months shorter	\$ (80,379)	\$ (70,217)	\$ (59,881)	
Unchanged	(12,804)	—	12,805	
3 months longer	57,932	73,149	88,361	
<i>Marine</i>	5% lower	Unchanged	5% higher	
3 months shorter	\$ (43,094)	\$ (46,809)	\$ (33,678)	
Unchanged	(10,820)	—	10,825	
3 months longer	15,156	27,021	38,892	
<i>Aviation</i>	5% lower	Unchanged	5% higher	
3 months shorter	\$ (7,401)	\$ (6,147)	\$ (4,894)	
Unchanged	(1,560)	—	1,560	
3 months longer	6,634	8,625	10,617	
<i>Credit and political risk</i>	10% lower	Unchanged	10% higher	
3 months shorter	\$ (12,747)	\$ (193)	\$ 3,862	
Unchanged	(12,565)	—	4,065	
3 months longer	(12,388)	186	4,260	
<i>Professional lines</i>	10% lower	Unchanged	10% higher	
6 months shorter	\$ (388,752)	\$ (108,463)	\$ 171,829	
Unchanged	(291,965)	—	291,968	
6 months longer	(176,479)	129,385	435,238	
<i>Liability</i>	10% lower	Unchanged	10% higher	
6 months shorter	\$ (225,322)	\$ (36,754)	\$ 151,816	
Unchanged	(191,981)	—	191,983	
6 months longer	(148,320)	48,214	244,739	

REINSURANCE			
Development pattern	Expected loss ratio		
<i>Property and other</i>	5% lower	Unchanged	5% higher
3 months shorter	\$ (112,511)	\$ (48,913)	\$ 16,103
Unchanged	(68,507)	—	60,398
3 months longer	(12,475)	53,585	119,690
<i>Credit and surety</i>	10% lower	Unchanged	10% higher
6 months shorter	\$ (36,316)	\$ (22,032)	\$ (7,748)
Unchanged	(16,067)	—	15,963
6 months longer	26,629	45,346	63,893
<i>Professional lines</i>	10% lower	Unchanged	10% higher
6 months shorter	\$ (115,985)	\$ (44,243)	\$ 32,974
Unchanged	(66,832)	—	78,229
6 months longer	(4,732)	63,176	141,754
<i>Motor</i>	10% lower	Unchanged	10% higher
6 months shorter	\$ (83,391)	\$ (34,992)	\$ 14,148
Unchanged	(50,328)	—	51,278
6 months longer	37,369	90,785	144,452
<i>Liability</i>	10% lower	Unchanged	10% higher
6 months shorter	\$ (192,395)	\$ (61,865)	\$ 82,787
Unchanged	(118,772)	—	131,163
6 months longer	(30,239)	90,135	208,151

The results show the cumulative increase (decrease) in loss reserves across all accident years. For example, if assumed loss development pattern for insurance property and other business was three months shorter with no accompanying change in ELR assumption, loss reserves may decrease by approximately \$70 million. Each of the impacts set forth in the tables is estimated individually, without consideration for any correlation among key assumptions or among reserve classes. Therefore, it would be inappropriate to take each of the amounts and add them together in an attempt to estimate total volatility. While we believe the variations in the expected loss ratios and loss development patterns presented could be reasonably expected, our historical loss data regarding variability is generally limited and actual variations may be greater or less than these amounts. It is also important to note that the variations are not meant to be a "best-case" or "worst-case" series of scenarios and, therefore, it is possible that future variations in loss reserves may be more or less than the amounts presented. While we believe that these are reasonably likely scenarios, we do not believe this sensitivity analysis should be considered an actual reserve range.

Reinsurance Recoverable on Unpaid Losses and Loss Expenses

In the normal course of business, we purchase treaty and facultative reinsurance protection to limit ultimate losses from catastrophic events and to reduce loss aggregation risk. To the extent that reinsurers do not meet their obligations under the reinsurance agreements, we remain liable. Consequently, we are exposed to credit risk associated with reinsurance recoverable balances to the extent that any of our reinsurers are unable or unwilling to pay claims.

The composition of reinsurance recoverable on unpaid losses and loss expenses ("reinsurance recoverable") for each of the reportable segments, segregated between reinsurance recoverable related to case reserves and reinsurance recoverable related to IBNR and by line of business was as follows:

At December 31,	2019			2018		
	Case reserves	IBNR	Total	Case reserves	IBNR	Total
Insurance segment:						
Property and other	\$ 241,028	\$ 117,165	\$ 358,194	\$ 268,834	\$ 213,887	\$ 482,720
Marine	70,927	93,078	164,005	74,440	112,724	187,164
Aviation	34,298	1,796	36,094	8,123	6,187	14,310
Credit and political risk	9,730	24,885	34,615	(313)	24,848	24,536
Professional lines	318,850	786,834	1,105,684	251,817	753,499	1,005,316
Liability	215,203	893,178	1,108,381	188,314	789,892	978,206
Total Insurance	<u>890,036</u>	<u>1,916,936</u>	<u>2,806,973</u>	<u>791,215</u>	<u>1,901,037</u>	<u>2,692,252</u>
Reinsurance segment:						
Property and other	286,994	161,891	448,885	238,029	197,642	435,671
Credit and surety	18,490	45,985	64,475	9,609	26,570	36,180
Professional lines	23,968	111,537	135,505	10,066	71,542	81,608
Motor	99,730	109,765	209,495	48,525	80,051	128,575
Liability	39,722	172,701	212,423	20,838	106,545	127,383
Total Reinsurance	<u>468,904</u>	<u>601,879</u>	<u>1,070,783</u>	<u>327,067</u>	<u>482,350</u>	<u>809,417</u>
Total	<u><u>\$ 1,358,940</u></u>	<u><u>\$ 2,518,815</u></u>	<u><u>\$ 3,877,756</u></u>	<u><u>\$ 1,118,282</u></u>	<u><u>\$ 2,383,387</u></u>	<u><u>\$ 3,501,669</u></u>

At December 31, 2019, reinsurance recoverables as a percentage of loss reserves was 30% (2018: 29%). At December 31, 2019, reinsurance recoverables (excluding the provision for uncollectible amounts) that were collectible from reinsurers rated A- or better by A.M Best were 89.1% (2018: 89.5%). Refer to Item 8, Note 11 to the Consolidated Financial Statements 'Commitments and Contingencies' for an analysis of the credit risk associated with reinsurance recoverable on unpaid and paid losses and loss expenses at December 31, 2019.

The recognition of reinsurance recoverable balances requires two key estimates. The first estimate is the amount of losses reserves to be ceded to our reinsurers. This amount consists of amounts related to case reserves and amounts related to IBNR.

Reinsurance recoverable related to case reserves is estimated on a case-by-case basis by applying the terms of applicable reinsurance cover to individual case reserve estimates. Reinsurance recoverable related to IBNR is generally developed as part of our loss reserving process, therefore, its estimation is subject to similar risks and uncertainties as the estimation of IBNR. Estimates of amounts to be ceded under excess of loss reinsurance contracts also take into account pricing information for those contracts and require greater judgment than estimates for proportional contracts.

The second estimate is the amount of the reinsurance recoverable balance that we believe ultimately will not be collected from reinsurers. We are selective in choosing reinsurers, buying reinsurance principally from reinsurers with a strong financial condition and industry ratings. The amount we ultimately collect may differ from our estimate due to the ability and willingness of reinsurers to pay claims, which may be negatively impacted by factors such as insolvency, contractual disputes over contract language or coverage and/or other reasons. In addition, economic conditions and/or operational performance of a particular reinsurer may deteriorate and this could also affect the ability and willingness of a reinsurer to meet their contractual obligations.

Consequently, we review reinsurance recoverable balances on a quarterly basis to estimate a provision for uncollectible amounts. Any adjustments to the provision for uncollectible amounts are recognized in the period in which they are determined.

We apply case-specific provisions against reinsurance recoverable balances that we deem unlikely to be collected in full. In addition, we use a default analysis to estimate a provision for uncollectible amounts on the remainder of the reinsurance recoverable balance. The principal components of the default analysis are reinsurance recoverable balances by reinsurer and default factors applied to estimate uncollectible amounts based on our reinsurers' credit ratings. The default factors are based on a model developed by a major rating agency.

At December 31, 2019 and 2018, the provision for uncollectible amounts was \$18 million and \$21 million, respectively. We have not written off any significant reinsurance recoverable balances in the last three years.

At December 31, 2019, the use of different assumptions within our approach could have a material effect on the provision for uncollectible amounts. To the extent the creditworthiness of our reinsurers deteriorates due to an adverse event affecting the reinsurance industry, such as a large number of catastrophes, uncollectible amounts could be significantly greater than the provision for uncollectible amounts. Given the various considerations used to estimate the provision for uncollectible amounts, we cannot precisely quantify the effect a specific industry event may have on the provision for uncollectible amounts.

Gross Premiums Written

Revenues primarily relate to premiums generated by our underwriting operations. The basis for recognizing gross premiums written varies by policy or contract type.

Insurance Segment

Insurance premiums written are recorded in accordance with the terms of the underlying policies.

For the majority of our insurance business, a fixed premium which is identified in the policy is recorded at the inception of the policy. This premium is adjusted if underlying insured values change. We actively monitor underlying insured values and any adjustments to premiums are recognized in the period in which they are determined. Gross premiums written on a fixed premium basis accounted for 87% and 88% of the segment's gross premiums written for the years ended December 31, 2019 and 2018, respectively. Some of this business is written through MGAs, third parties granted authority to bind risks on our behalf in accordance with our underwriting guidelines. For this business, premiums are recorded based on monthly statements received from MGAs or best estimates based on historical experience.

A limited amount of our insurance business is written on a line slip or proportional basis, where we assume an agreed proportion of the premiums and losses of a particular risk or group of risks along with other unrelated insurers. As premiums for this business are not identified in the policy, premiums are recognized at the inception of the policy based on estimates provided by clients through brokers (refer to '*Reinsurance Segment*' below for further details). We review these premium estimates on a quarterly basis and any adjustments to premium estimates are recognized in the period in which they are determined. Gross premiums written on a line slip or proportional basis accounted for 13% and 12% of the segment's gross premiums written for the years ended December 31, 2019 and 2018, respectively, therefore the impact of these premium estimates on pre-tax net income was immaterial.

In credit and political risk line of business, we write certain policies on a multi-year basis. Premiums in respect of these policies are recorded at the inception of the policy based on management's best estimate of premiums to be received, including assumptions relating to prepayments/refinancing. At December 31, 2019, the average duration of unearned premiums for credit and political risk line of business was 5.9 years (2018: 5.7 years).

Reinsurance Segment

Reinsurance premiums are recorded at the inception of the contract and are estimated based on information received from ceding companies.

The reinsurance segment provides cover to cedants (i.e. insurance companies) on an excess of loss and proportional basis. In most cases, cedants seek protection from us for business that they have not yet written at the time they enter into agreements with us, therefore, cedants must estimate their underlying premiums when purchasing reinsurance cover from us.

For multi-year contracts premiums are recorded at the inception of the contract based on management's best estimate of premiums to be received. Premiums are recognized on an annual basis for multi-year contracts where the cedant has the ability to unilaterally commute or cancel coverage within the term of the contract.

Excess of loss reinsurance contracts with cedants typically include minimum or deposit premium provisions. For excess of loss reinsurance contracts, minimum or deposit premiums are generally considered to be the best estimate of premiums at the inception of the contract. The minimum or deposit premium is normally adjusted at the end of the contract period to reflect changes in the underlying risks in force during the contract period. Any adjustments to minimum or deposit premiums are recognized in the period in which they are determined. Gross premiums written for excess of loss reinsurance contracts accounted for 48% and 38% of the reinsurance segment's gross premiums written for the years ended December 31, 2019 and 2018, respectively.

Many of our excess of loss reinsurance contracts also include provisions that require an automatic reinstatement of coverage in the event of a loss. In a year of significant loss events, reinstatement premiums will be higher than in a year in which there are no large loss events. Reinstatement premiums are recognized and earned at the time a loss event occurs and losses are recorded. While the reinstatement premium amount is defined by contract terms, recognition of reinstatement premiums is based on estimates of losses and loss expenses, which reflect management's judgment (refer to '*Critical Accounting Estimates – Reserve for Losses and Loss Expenses*' above for further details).

For proportional reinsurance contracts, premiums are recognized at the inception of the contract based on estimates received from ceding companies. We review these premium estimates on a quarterly basis and evaluate their reasonability in light of premiums reported by cedants. Factors contributing to changes in initial premium estimates may include:

- changes in renewal rates or rates of new business accepted by cedants (changes could result from changes in the relevant insurance market that could affect more than one of our cedants or could be a consequence of changes in the marketing strategy or risk appetite of an individual cedant);
- changes in underlying exposure values; and/or
- changes in rates being charged by cedants.

As a result of this review process, any adjustments to premium estimates are recognized in the period in which they are determined. Changes in premium estimates could be material to gross premiums written in the period. Changes in premium estimates could be also material to net premiums earned in the period in which they are determined as any adjustment may be substantially or fully earned. Gross premiums written for proportional reinsurance contracts, including adjustments to premium estimates established in prior years, accounted for 52% and 62% of the reinsurance segment's gross premiums written for the years ended December 31, 2019 and 2018, respectively.

Premiums estimates for proportional reinsurance contracts incepting during the year were as follows:

Year ended December 31,	2019	2018	2017
Catastrophe	\$ 17,149	\$ 12,944	\$ 16,344
Property	184,552	237,527	248,580
Professional lines	159,234	174,126	214,184
Credit and surety	162,948	221,260	223,184
Motor	194,871	361,471	318,494
Liability	251,515	246,554	263,790
Agriculture	194,379	205,116	202,234
Engineering	51,052	48,692	67,221
Accident and health	335,538	284,675	189,567
Other	22,697	11,360	51,211
Total estimated premiums	\$ 1,573,935	\$ 1,803,725	\$ 1,794,809
Gross premiums written (reinsurance segment)	\$ 3,222,927	\$ 3,112,473	\$ 2,741,355
As a % of total gross premiums written	49%	58%	65%

Historical experience has shown that cumulative adjustments to initial premium estimates for proportional reinsurance contracts have ranged from 0% to 4% over the last 5 years. Giving more weight to recent years where premium volume was

comparable to current levels, we believe that a reasonably likely change to 2019 initial premium estimates for proportional reinsurance contracts would be 3% in either direction. A change in initial premium estimates of this magnitude would result in a change in gross premiums written of approximately \$47 million. A change in initial premium estimates of this magnitude would not have a material impact on pre-tax net income after considering current losses and loss expenses ratios. However, larger variations, positive or negative, are possible.

Net Premiums Earned

Premiums are earned over the period during which we are exposed to the underlying risk. Changes in circumstances subsequent to the inception of contracts can impact the earning periods. For example, when exposure limits for a contract are reached, any associated unearned premiums are fully earned. This can have a significant impact on net premiums earned, particularly for multi-year contracts such as those in credit and political risk line of business.

Fixed premium insurance policies and excess of loss reinsurance contracts are generally written on a "losses occurring" or "claims made" basis over the term of the contract. Consequently, premiums are earned evenly over the contract term, which is generally 12 months.

Line slip or proportional insurance policies and proportional reinsurance contracts are generally written on a "risks attaching" basis, covering claims that relate to the underlying policies written during the terms of these contracts. As the underlying business incepts throughout the contract term which is typically one year, and the underlying business typically has a one year coverage period, these premiums are generally earned evenly over a 24-month period.

Fair Value Measurements of Financial Assets and Liabilities

Fair value is defined as the price to sell an asset or transfer a liability (i.e. the "exit price") in an orderly transaction between market participants. U.S. GAAP prescribes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to quoted prices in active markets and the lowest priority to unobservable data. The level in the hierarchy within which a given fair value measurement falls is determined based on the lowest level input that is significant to the measurement. The hierarchy is broken down into three levels as follows:

- Level 1 – Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access. Valuation adjustments and block discounts are not applied to Level 1 instruments.
- Level 2 – Valuations based on quoted prices in active markets for similar assets or liabilities, quoted prices for identical assets or liabilities in inactive markets, or for which significant inputs are observable (e.g. interest rates, yield curves, prepayment speeds, default rates, loss severities, etc.) or can be corroborated by observable market data.
- Level 3 – Valuations based on inputs that are unobservable and significant to the overall fair value measurement. The unobservable inputs reflect our judgments about assumptions that market participants might use.

Refer to Item 8, Note 6 to the Consolidated Financial Statements '*Fair Value Measurements*' for further information on the valuation techniques including significant inputs and assumptions generally used in estimating the fair values of our financial instruments.

Our estimated fair value of a financial instrument may differ from the amount that could be realized if the security was sold in an immediate sale, e.g., a forced transaction. In addition, the valuation of financial instruments is more subjective when markets are less liquid due to the lack of available market based inputs, as was the case during the global financial market crisis in late 2008 and early 2009. This may lead us to change the selection of valuation technique (from market to cash flow approach) or may cause us to use multiple valuation techniques to estimate the fair value of a financial instrument. This circumstance may require significant management judgment and could cause a financial instrument to be reclassified between levels of the fair value hierarchy.

Fixed Maturities and Equity Securities

At December 31, 2019, the fair values of 95% (2018: 92%) of total fixed maturities and equity securities was based on prices provided by globally recognized independent pricing services where we have a current and detailed understanding of how their prices were derived. The remaining securities were priced by either non-binding broker quotes or internal valuation models.

Generally, we obtain quotes directly from broker-dealers who are active in the corresponding markets when prices are unavailable from independent pricing services. This may also be the case if the pricing from pricing services is not reflective of current market levels, as detected by our pricing control tolerance procedures. Generally, broker-dealers value securities through their trading desks based on observable market inputs. Their pricing methodologies include mapping securities based

on trade data, bids or offers, observed spreads and performance on newly issued securities. They may also establish pricing through observing secondary trading of similar securities.

At December 31, 2019 and 2018, we have not adjusted any pricing provided by independent pricing services (refer to 'Management Pricing Validation' below). In addition, total Level 3 fixed maturities and equity securities amounted to \$8 million (2018: \$87 million), less than 1% of total fixed maturities and equity securities (refer to Item 8, Note 6 to the Consolidated Financial Statements 'Fair Value Measurements' for further information).

Management Pricing Validation

While we obtain pricing from pricing services and/or broker-dealers, management is ultimately responsible for determining the fair value measurements of all securities. To ensure fair value measurement is applied consistently and in accordance with U.S. GAAP, we annually update our understanding of the pricing methodologies used by the pricing services and broker-dealers.

We also challenge any prices we believe may not be representative of fair value under current market conditions. Our review process includes, but is not limited to: (i) initial and ongoing evaluation of the pricing methodologies and valuation models used by outside parties to calculate fair value; (ii) quantitative analysis; (iii) a review of multiple quotes obtained in the pricing process and the range of resulting fair values for each security, if available, and (iv) randomly selecting purchased or sold securities and comparing the executed prices to the fair value estimates provided by the independent pricing sources and broker-dealers.

Other Investments

Hedge Funds, Direct Lending Funds, Private Equity Funds and Real Estate Funds

The fair values of hedge funds, direct lending funds, private equity funds and real estate funds are estimated using net asset values (NAVs) as advised by external fund managers or third-party administrators (refer to Item 8, Note 6 to the Consolidated Financial Statements 'Fair Value Measurements' for further information).

CLO-Equity Securities

At December 31, 2019 and 2018, we had invested indirectly, through a fund structure in CLO-Equities, also known as "cash flow CLOs" in the industry. During 2019, the CLO-Equity market continued to be relatively inactive with only a small number of transactions being observed, particularly related to transactions involving our CLO-Equities. Our indirect investment in CLO-Equities is valued using a discounted cash flow model prepared by an external manager. At December 31, 2019 and 2018, the estimated fair value of our indirect investment in CLO-Equities was \$14 million (2018: \$21 million).

Significant inputs used in discounted cash flow models were as follows:

At December 31,	2019	2018
Default rates	3.5%	3.0%
Loss severity rate	35.0%	35.0%
Collateral spreads	3.0%	3.0%
Estimated maturity dates	7 years	7 years

The default and loss severity rates are the most judgmental unobservable market inputs to the discounted cash flow model to which the valuation of our indirect investment in CLO-Equities is most sensitive.

As the significant inputs used to price this security are unobservable, the fair value of the indirect investment in CLO-Equities is classified as Level 3.

Other Privately Held Investments

Other privately held investments include convertible preferred shares, common shares, convertible notes and notes payable. These securities are initially valued at cost which approximates fair value. In subsequent measurement periods, the fair values of these investments are generally determined using capital statements obtained from each investee. In 2018, the fair values of some of these investments were determined using an internally developed discounted cash flow model.

Significant inputs used in discounted cash flow models were as follows:

At December 31,	2019	2018
Discount rate	-	3.0% - 8.0%

As the significant inputs used to price these investments are unobservable, the fair values of other privately held investments are classified as Level 3.

Overseas Deposits

Overseas deposits include investments in private funds held by Syndicate 2007 in which the underlying investments are primarily U.S. government, Non-U.S. government and corporate debt securities. The funds do not trade on an exchange, therefore, are not included in available for sale investments. As the significant inputs used to price the underlying investments are observable market inputs, the fair values of overseas deposits are classified as Level 2.

Other-Than-Temporary Impairments ("OTTI")

A fixed maturity is impaired if the fair value of the investment is below amortized cost.

On a quarterly basis, we review all impaired securities to determine if impairments are other-than-temporary. The OTTI assessment is inherently judgmental, especially when securities have experienced severe declines in fair value over a short period. Our impairment review process begins with a quantitative analysis to identify securities to be evaluated for potential OTTI. For identified securities, fundamental analysis is performed that considers the following quantitative and qualitative factors:

- a. the length of time and extent to which the fair value is less than the amortized cost.
- b. the financial condition, near-term and long-term prospects for the issuer of the security, including relevant industry conditions and trends, and the implications of rating agency actions, and offering prices.
- c. the reason for the decline (e.g. credit spread widening, credit event, foreign exchange rate movements);
- d. the historical and implied volatility of the fair value.
- e. the collateral structure and credit support of the security, if applicable.

The following discussion provides further details regarding our processes for identification of impairments that are other-than-temporary for fixed maturities and the recognition of the related OTTI charges.

During 2019, we recorded an OTTI charge in net income of \$7 million (2018: \$10 million) (refer to '*Net Investment Income and Net Investment Gains (Losses)*' for further details).

Fixed Maturities

Fixed maturities classified as available for sale are reported at fair value at the balance sheet date. Our available for sale ("AFS") investment portfolio is the largest component of consolidated total assets and it is a multiple of shareholders' equity. As a result, an OTTI charge could be material to our financial condition and operating results particularly during periods of dislocation in financial markets.

If a fixed maturity is impaired and we intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, the impairment is considered other-than-temporary. In these instances, the full amount of the impairment (i.e. the difference between the security's fair value and its amortized cost) is charged to net income and is included in net investment gains (losses) in the consolidated statements of operations.

In instances where we intend to hold the impaired fixed maturity, and we do not anticipate to fully recover the amortized cost based on projected cash flows to be collected from the security (i.e. a credit loss exists), the credit loss component of the impairment is charged to net income and is included in net investment gains (losses) in the consolidated statements of operations. On recognition of an OTTI charge, the new cost basis for the security is the amortized cost basis less the OTTI charge recognized in net income. The new cost basis is not adjusted for subsequent increases in fair value. The difference between the new cost basis and the cash flows expected to be collected is accreted or amortized on a quarterly basis to net

investment income over the remaining life of the fixed maturity. The non-credit component (e.g. interest rates, market conditions, etc.) of the OTTI charge is recognized in other comprehensive income.

From time to time, we may sell fixed maturities subsequent to the balance sheet date that we did not intend to sell at the balance sheet date. Conversely, we may not sell fixed maturities that we intended to sell at the balance sheet date. These changes in intent may arise due to events occurring subsequent to the balance sheet date. The types of events that may result in a change in intent include, but are not limited to, significant changes in the economic facts and circumstances related to the specific issuer, changes in liquidity needs, or changes in tax laws or the regulatory environment.

For impaired investment-grade securities (i.e. rated BBB- or above) that we do not intend to sell and it is more likely than not that we will not be required to sell, we have established some parameters for identifying securities with potential credit losses.

Our parameters focus primarily on the duration and the extent of the decline, including but not limited to:

- declines in value greater than 20% for nine consecutive months, and
- declines in value greater than 10% for twelve consecutive months.

For impaired securities in our high yield portfolios that we do not intend to sell and it is more likely than not that we will not be required to sell, we have established separate parameters for credit loss assessment. Due to the additional volatility inherent in high yield securities relative to investment-grade securities, we focus on the severity of the impairment and work closely with our external high yield investment managers to identify securities with significant potential credit losses.

If a security meets one of the above parameters, we perform a fundamental analysis that considers the quantitative and qualitative factors noted above to determine whether an impairment charge should be recognized in the period under review.

Our credit impairment review process excludes fixed maturities guaranteed, either explicitly or implicitly, by the U.S. government and its agencies (*U.S. Government, U.S. Agency and U.S. Agency RMBS*) because we anticipate these securities will not be settled below amortized cost. These securities are evaluated for intention to sell at a loss.

The credit loss component of an OTTI charge recognized in net income is calculated based on the difference between the amortized cost of the security and the net present value of projected future cash flows expected to be collected from the security. The significant inputs and the methodology used to estimate credit losses are disclosed in Item 8, Note 5 (f) to the Consolidated Financial Statements *'Investments'*.

RECENT ACCOUNTING PRONOUNCEMENTS

Refer to Item 8, Note 2(m) to the Consolidated Financial Statements *'Basis of Presentation and Significant Accounting Policies'* for a discussion of recently issued accounting pronouncements that we have not yet adopted.

OFF-BALANCE SHEET AND SPECIAL PURPOSE ENTITY ARRANGEMENTS

At December 31, 2019, we were not party to any off-balance sheet arrangements, as defined by Item 303(a)(4) of Regulation S-K to which an entity unconsolidated with the Company is a party that management believes is reasonably likely to have a current or future effect on its financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that we believe is material to investors.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Market risk represents the potential for an economic loss due to adverse changes in the fair values of financial instruments (refer to Item 1 *'Risk and Capital Management'* for further details).

We own a substantial amount of assets whose fair values are subject to market risks. Our fixed maturities are classified as available for sale, therefore changes in fair values caused by changes in interest rates and foreign currency exchange rates have an immediate impact on comprehensive income, shareholders' equity and book value but may not have an immediate impact on net income. Changes in these market risks impact net income when, and if, securities are sold or an OTTI charge is

recorded. Equity securities are reported at fair value, with changes in fair values recognized in net income. At December 31, 2019 and 2018, we also invested in alternative investments including hedge funds, direct lending funds, private equity funds, real estate funds, CLO-Equities, other privately held investments and overseas deposits. These investments are also exposed to market risks, with the changes in fair values immediately reported in net income.

Sensitivity Analysis

The following is a sensitivity analysis of our primary market risk exposures at December 31, 2019 and 2018.

Our policies to address these risks in 2019 were not materially different from 2018. We do not currently anticipate significant changes in our primary market risk exposures or in how those exposures are managed in future reporting periods based on what is known or expected to be in effect in future reporting periods.

Interest Rate and Credit Spread Risk

Interest rate risk includes fluctuations in interest rates and credit spreads that have a direct impact on the fair values of fixed maturities. As interest rates rise and credit spreads widen, the fair value of fixed maturities falls, and the converse is also true.

We monitor sensitivity to interest rate and credit spread changes by revaluing fixed maturities using a variety of different interest rates (inclusive of credit spreads). We use duration and convexity at the security level to estimate the change in fair value that would result from a change in each security's yield. Duration measures the price sensitivity of an asset to changes in yield rates. Convexity measures how the duration of the security changes with interest rates. The duration and convexity analysis take into account changes in prepayment expectations for MBS and ABS. The analysis is performed at the security level and aggregated to the asset category levels.

The following table presents the estimated pre-tax impact on the fair value of fixed maturities due to an instantaneous increase in the U.S. yield curve of 100 basis points and an additional 100 basis point credit spread widening for corporate debt, non-agency residential and commercial MBS, ABS and municipal bond securities.

	Fair value	Potential adverse change in fair value		
		Increase in interest rate by 100 basis points	Widening of credit spreads by 100 basis points	Total
<u>At December 31, 2019</u>				
U.S. government and agency	\$ 2,112,881	\$ (78,364)	\$ —	\$ (78,364)
Non-U.S. government	576,592	(20,430)	—	(20,430)
Agency RMBS	1,592,584	(54,850)	—	(54,850)
<i>Securities exposed to credit spreads:</i>				
Corporate debt	4,930,254	(154,282)	(162,741)	(317,023)
CMBS	1,365,052	(69,922)	(74,549)	(144,471)
Non agency RMBS	84,922	(1,766)	(3,205)	(4,971)
ABS	1,598,693	(10,951)	(47,745)	(58,696)
Municipals	207,227	(9,045)	(9,399)	(18,444)
	<u>\$ 12,468,205</u>	<u>\$ (399,610)</u>	<u>\$ (297,639)</u>	<u>\$ (697,249)</u>
<u>At December 31, 2018</u>				
U.S. government and agency	\$ 1,515,697	\$ (36,818)	\$ —	\$ (36,818)
Non-U.S. government	493,016	(17,219)	—	(17,219)
Agency RMBS	1,643,308	(63,612)	—	(63,612)
<i>Securities exposed to credit spreads:</i>				
Corporate debt	4,876,921	(149,896)	(167,165)	(317,061)
CMBS	1,092,530	(51,005)	(54,608)	(105,613)
Non agency RMBS	40,687	(315)	(1,321)	(1,636)
ABS	1,637,603	(10,966)	(54,226)	(65,192)
Municipals	135,585	(4,838)	(5,316)	(10,154)
	<u>\$ 11,435,347</u>	<u>\$ (334,669)</u>	<u>\$ (282,636)</u>	<u>\$ (617,305)</u>

U.S. government agencies have a limited range of spread widening, therefore, 100 basis points of spread widening for these securities is highly improbable in normal market conditions. Our non-U.S. government debt obligations are highly-rated and we believe the potential for future widening of credit spreads would also be limited for these securities. Certain of our holdings in non-agency RMBS and ABS have floating interest rates, which mitigate interest rate risk exposure.

The above sensitivity analysis reflects our view of changes that are reasonably possible over a one-year period. Note this should not be construed as our prediction of future market events, but rather an illustration of the impact of such events.

Our investment in CLO-Equities is also exposed to interest rate risk, but an increase in the risk free yield curve of 100 basis points would have an insignificant impact to its fair value.

In addition, our investment in bond mutual funds is exposed to interest rate risk, however, this exposure is largely mitigated by the short duration of the underlying securities.

Equity Price Risk

Our portfolio of equity securities, excluding the bond mutual funds, has exposure to equity price risk. This risk is defined as the potential loss in fair value resulting from adverse changes in stock prices. The global equity portfolio is managed to a benchmark composite index, which consists of a blend of the S&P 500 and MSCI World indices. Changes in the underlying indices have a corresponding impact on the overall portfolio. At December 31, 2019, the fair value of equity securities was

\$298 million (2018: \$237 million). At December 31, 2019, the impact of a 20% decline in the overall market prices of our equity exposures would be \$60 million (2018: \$47 million), on a pre-tax basis.

Our investment in hedge funds has significant exposure to equity strategies with net long positions. At December 31, 2019, the impact of an instantaneous 15% decline in the fair value of our investment in hedge funds would be \$25 million (2018: \$29 million), on a pre-tax basis.

Foreign Currency Risk

The following table presents a sensitivity analysis of total net foreign currency exposures.

	AUD	NZD	CAD	EUR	GBP	JPY	Other	Total
At December 31, 2019								
Net managed assets (liabilities), excluding derivatives	\$ 42,435	\$ (2,247)	\$ 157,512	\$ (442,481)	\$ (198,535)	\$ (160,737)	\$ 114,073	\$ (489,980)
Foreign currency derivatives, net	(23,881)	6,407	(125,019)	356,501	144,866	204,918	4,366	568,158
Net managed foreign currency exposure	18,554	4,160	32,493	(85,980)	(53,669)	44,181	118,439	78,178
Other net foreign currency exposure	1	—	116	(319)	(316)	—	51,323	50,805
Total net foreign currency exposure	\$ 18,555	\$ 4,160	\$ 32,609	\$ (86,299)	\$ (53,985)	\$ 44,181	\$ 169,762	\$ 128,983
Net foreign currency exposure as a percentage of total shareholders' equity	0.3%	0.1%	0.6%	(1.6%)	(1.0%)	0.8%	3.1%	2.3%
Pre-tax impact of net foreign currency exposure on shareholders' equity given a hypothetical 10% rate movement ⁽¹⁾	\$ 1,856	\$ 416	\$ 3,261	\$ (8,630)	\$ (5,399)	\$ 4,418	\$ 16,976	\$ 12,898
At December 31, 2018								
Net managed assets (liabilities), excluding derivatives	\$ 56,992	\$ (5,943)	\$ 110,394	\$ (329,761)	\$ (166,396)	\$ (8,944)	\$ 64,523	\$ (279,135)
Foreign currency derivatives, net	(38,383)	3,020	(128,266)	329,708	20,138	(8,663)	(939)	176,615
Net managed foreign currency exposure	18,609	(2,923)	(17,872)	(53)	(146,258)	(17,607)	63,584	(102,520)
Other net foreign currency exposure	1	—	82	(33)	379	—	52,924	53,353
Total net foreign currency exposure	\$ 18,610	\$ (2,923)	\$ (17,790)	\$ (86)	\$ (145,879)	\$ (17,607)	\$ 116,508	\$ (49,167)
Net foreign currency exposure as a percentage of total shareholders' equity	0.4%	(0.1%)	(0.4%)	—%	(2.9%)	(0.4%)	2.3%	(1.0%)
Pre-tax impact of net foreign currency exposure on shareholders' equity given a hypothetical 10% rate movement ⁽¹⁾	\$ 1,861	\$ (292)	\$ (1,779)	\$ (9)	\$ (14,588)	\$ (1,761)	\$ 11,651	\$ (4,917)

(1) Assumes 10% change in underlying currencies relative to the U.S. dollar.

Net Managed Foreign Currency Exposure

Our net managed foreign currency exposure is subject to internal risk tolerance standards. For significant foreign currency exposures, defined as those where net asset/liability position exceeds the greater of 1% of shareholders' equity or \$55 million, the value of assets denominated in those currencies should fall within a range of 90 - 110% of liabilities denominated in the same currency. In addition, aggregate foreign currency exposure is subject to the same tolerance range. We may use derivative instruments to maintain net managed foreign currency exposures within our risk tolerance levels.

Other Net Foreign Currency Exposure

Other net foreign currency exposure includes those assets managed by specific investment managers who have the discretion to hold foreign currency exposures as part of their total return strategy. At December 31, 2019, other net foreign currency exposure primarily consisted of our emerging market debt securities portfolio (refer to Item 7 'Management's Discussion and Analysis of Financial Condition and Results of Operations – Cash and Investments' for further details).

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of AXIS Capital Holdings Limited

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of AXIS Capital Holdings Limited and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, changes in shareholders' equity, and cash flows, for each of the three years in the period ended December 31, 2019, and the related notes and the schedules listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements 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.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), 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 and our report dated February 27, 2020 expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Reserve for losses and loss expenses - Refer to Notes 2 and 8 to the consolidated financial statements

Critical Audit Matter Description

The Company's estimate of loss and loss expense reserves is derived using expected trends in claim severity and frequency and other factors that may vary significantly as claims are settled. The estimate is sensitive to significant assumptions, including the initial expected loss ratio and loss development factors. The estimate is also sensitive to the selection of actuarial methods and weighting of these methods applied to project the ultimate losses, the estimation of ultimate reserves associated with catastrophic events, and other factors. Further, not all catastrophic events can be modeled using traditional actuarial methodologies, which increases the degree of judgment needed in estimating loss reserves for such events.

Auditing the Company's methods, assumptions and best estimate of the cost of the ultimate settlement and administration of claims represented by the incurred but not reported ("IBNR") claims included in recorded loss and loss adjustment reserves involved especially subjective auditor judgment and an increased extent of effort, including the involvement of our actuarial specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to reserves for losses and loss expenses included the following, among others:

- We tested the effectiveness of controls over the valuation of the recorded loss and loss expense reserves, including the review and approval process that management has in place for significant actuarial methods and assumptions used and the approval of management's best estimate of loss and loss expense reserves.
- We tested the completeness and accuracy of the underlying data that served as the basis for the Company's actuarial analysis, including historical claims data, to test the reasonableness of key inputs to the actuarial estimate.
- With the assistance of our actuarial specialists:
 - We independently developed an estimate of the reserves for selected classes of business, compared our estimates to those booked by the Company, and evaluated the differences.
 - We evaluated the Company's methodologies against recognized actuarial practices for the remaining classes. We also evaluated the assumptions used by the Company using our industry knowledge and experience and other analytical procedures.
 - We compared the results of the reserve study prepared by third party actuaries to management's best estimate and evaluated the differences.

/s/ Deloitte Ltd.

Hamilton, Bermuda
February 27, 2020

We have served as the Company's auditor since 2001.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED BALANCE SHEETS
DECEMBER 31, 2019 AND 2018

	2019	2018
	(in thousands)	
Assets		
Investments:		
Fixed maturities, available for sale, at fair value (Amortized cost 2019: \$12,263,240; 2018: \$11,616,312)	\$ 12,468,205	\$ 11,435,347
Equity securities, at fair value (Cost 2019: \$398,956; 2018: \$365,905)	474,207	381,633
Mortgage loans, held for investment, at fair value	432,748	298,650
Other investments, at fair value	770,923	787,787
Equity method investments	117,821	108,103
Short-term investments, at fair value	38,471	144,040
Total investments	14,302,375	13,155,560
Cash and cash equivalents	1,241,109	1,232,814
Restricted cash and cash equivalents	335,348	597,206
Accrued interest receivable	78,085	80,335
Insurance and reinsurance premium balances receivable	3,071,390	3,007,296
Reinsurance recoverable on unpaid losses and loss expenses	3,877,756	3,501,669
Reinsurance recoverable on paid losses and loss expenses	327,795	280,233
Deferred acquisition costs	492,119	566,622
Prepaid reinsurance premiums	1,101,889	1,013,573
Receivable for investments sold	35,659	32,627
Goodwill	102,003	102,003
Intangible assets	230,550	241,568
Value of business acquired	8,992	35,714
Operating lease right-of-use assets	111,092	—
Other assets	287,892	285,346
Total assets	\$ 25,604,054	\$ 24,132,566
Liabilities		
Reserve for losses and loss expenses	\$ 12,752,081	\$ 12,280,769
Unearned premiums	3,626,246	3,635,758
Insurance and reinsurance balances payable	1,349,082	1,338,991
Debt	1,808,157	1,341,961
Payable for investments purchased	32,985	111,838
Operating lease liabilities	115,584	—
Other liabilities	375,911	393,178
Total liabilities	20,060,046	19,102,495
Commitments and Contingencies		
Shareholders' equity		
Preferred shares	775,000	775,000
Common shares (shares issued 2019: 176,580; 2018: 176,580 shares outstanding 2019: 83,959; 2018: 83,586)	2,206	2,206
Additional paid-in capital	2,317,212	2,308,583
Accumulated other comprehensive income (loss)	171,710	(177,110)
Retained earnings	6,056,686	5,912,812
Treasury shares, at cost (2019: 92,621; 2018: 92,994)	(3,778,806)	(3,791,420)
Total shareholders' equity	5,544,008	5,030,071
Total liabilities and shareholders' equity	\$ 25,604,054	\$ 24,132,566

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, AND 2017

	2019	2018	2017
	(in thousands, except for per share data)		
Revenues			
Net premiums earned	\$ 4,587,178	\$ 4,791,495	\$ 4,148,760
Net investment income	478,572	438,507	400,805
Other insurance related income (losses)	16,444	10,622	(1,240)
Bargain purchase gain	—	—	15,044
Net investment gains (losses):			
Other-than-temporary impairment ("OTTI") losses	(6,984)	(9,733)	(14,493)
Other realized and unrealized investment gains (losses)	98,217	(140,485)	42,719
Total net investment gains (losses)	<u>91,233</u>	<u>(150,218)</u>	<u>28,226</u>
Total revenues	<u>5,173,427</u>	<u>5,090,406</u>	<u>4,591,595</u>
Expenses			
Net losses and loss expenses	3,044,798	3,190,287	3,287,772
Acquisition costs	1,024,582	968,835	823,591
General and administrative expenses	634,831	627,389	579,428
Foreign exchange losses (gains)	(12,041)	(29,165)	134,737
Interest expense and financing costs	68,107	67,432	54,811
Transaction and reorganization expenses	37,384	66,940	26,718
Amortization of value of business acquired	26,722	172,332	50,104
Amortization of intangible assets	11,597	13,814	2,543
Total expenses	<u>4,835,980</u>	<u>5,077,864</u>	<u>4,959,704</u>
Income (loss) before income taxes and interest in income (loss) of equity method investments	337,447	12,542	(368,109)
Income tax (expense) benefit	(23,692)	29,486	7,542
Interest in income (loss) of equity method investments	9,718	993	(8,402)
Net income (loss)	<u>323,473</u>	<u>43,021</u>	<u>(368,969)</u>
Preferred share dividends	41,112	42,625	46,810
Net income (loss) available (attributable) to common shareholders	<u>\$ 282,361</u>	<u>\$ 396</u>	<u>\$ (415,779)</u>
Per share data			
Earnings (loss) per common share:			
Earnings (loss) per common share	\$ 3.37	\$ —	\$ (4.94)
Earnings (loss) per diluted common share	\$ 3.34	\$ —	\$ (4.94)
Weighted average common shares outstanding	83,894	83,501	84,108
Weighted average diluted common shares outstanding	84,473	84,007	84,108

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, AND 2017

	2019	2018	2017
	(in thousands)		
Net income (loss)	\$ 323,473	\$ 43,021	\$ (368,969)
Other comprehensive income (loss), net of tax:			
Available for sale investments:			
Unrealized gains (losses) arising during the year	374,615	(291,731)	205,419
Adjustment for reclassification of net realized (gains) losses and OTTI losses recognized in net income (loss)	(24,729)	100,902	(33,134)
Unrealized gains (losses) arising during the year, net of reclassification adjustment	349,886	(190,829)	172,285
Foreign currency translation adjustment	(1,066)	(11,165)	41,938
Total other comprehensive income (loss), net of tax	348,820	(201,994)	214,223
Comprehensive income (loss)	\$ 672,293	\$ (158,973)	\$ (154,746)

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, AND 2017

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	(in thousands)		
Preferred shares			
Balance at beginning of year	\$ 775,000	\$ 775,000	\$ 1,126,074
Shares repurchased	—	—	(351,074)
Balance at end of year	<u>775,000</u>	<u>775,000</u>	<u>775,000</u>
Common shares (par value)			
Balance at beginning and end of year	<u>2,206</u>	<u>2,206</u>	<u>2,206</u>
Additional paid-in capital			
Balance at beginning of year	2,308,583	2,299,166	2,299,857
Treasury shares reissued	(21,046)	(24,088)	(39,368)
Share-based compensation expense	29,675	33,505	38,677
Balance at end of year	<u>2,317,212</u>	<u>2,308,583</u>	<u>2,299,166</u>
Accumulated other comprehensive income (loss)			
Balance at beginning of year	(177,110)	92,382	(121,841)
Unrealized gains (losses) on available-for-sale investments, net of tax:			
Balance at beginning of year	(168,365)	89,962	(82,323)
Cumulative effect of adoption of ASU No. 2018-02	—	2,106	—
Cumulative effect of adoption of ASU No. 2016-01, net of taxes	—	(69,604)	—
Unrealized gains (losses) arising during the year, net of reclassification adjustment	349,886	(190,829)	172,285
Balance at end of year	<u>181,521</u>	<u>(168,365)</u>	<u>89,962</u>
Cumulative foreign currency translation adjustments, net of tax:			
Balance at beginning of year	(8,745)	2,420	(39,518)
Foreign currency translation adjustment	(1,066)	(11,165)	41,938
Balance at end of year	<u>(9,811)</u>	<u>(8,745)</u>	<u>2,420</u>
Balance at end of year	<u>171,710</u>	<u>(177,110)</u>	<u>92,382</u>
Retained earnings			
Balance at beginning of year	5,912,812	5,979,666	6,527,627
Cumulative effect of adoption of ASU No. 2018-02	—	(2,106)	—
Cumulative effect of adoption of ASU No. 2016-01, net of taxes	—	69,604	—
Net income (loss)	323,473	43,021	(368,969)
Preferred share dividends	(41,112)	(42,625)	(46,810)
Common share dividends	(138,487)	(134,748)	(132,182)
Balance at end of year	<u>6,056,686</u>	<u>5,912,812</u>	<u>5,979,666</u>
Treasury shares, at cost			
Balance at beginning of year	(3,791,420)	(3,807,156)	(3,561,553)
Shares repurchased	(10,165)	(10,080)	(285,858)
Shares reissued	22,779	25,816	40,255
Balance at end of year	<u>(3,778,806)</u>	<u>(3,791,420)</u>	<u>(3,807,156)</u>
Total shareholders' equity	<u>\$ 5,544,008</u>	<u>\$ 5,030,071</u>	<u>\$ 5,341,264</u>

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, AND 2017

	2019	2018	2017
	(in thousands)		
Cash flows from operating activities:			
Net income (loss)	\$ 323,473	\$ 43,021	\$ (368,969)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Net investment (gains) losses	(91,233)	144,297	(28,226)
Net realized and unrealized gains on other investments	(60,038)	(45,153)	(72,763)
Amortization of fixed maturities	18,499	24,663	43,292
Interest in (income) loss of equity method investments	(9,718)	495	8,402
Amortization of value of business acquired	26,722	172,332	50,104
Other amortization and depreciation	75,229	9,795	31,367
Share-based compensation expense, net of cash payments	32,491	34,346	12,667
Non-cash foreign exchange losses (gains)	(6,043)	—	24,149
Bargain purchase gain	—	—	(15,044)
<i>Changes in:</i>			
Accrued interest receivable	2,140	(3,184)	(4,353)
Reinsurance recoverable on unpaid and paid losses and loss expenses	(412,076)	(766,690)	(131,160)
Deferred acquisition costs	74,331	(98,329)	(35,076)
Prepaid reinsurance premiums	(88,789)	(212,654)	(56,377)
Reserve for losses and loss expenses	467,428	442,839	1,004,578
Unearned premiums	(7,958)	29,760	(56,603)
Insurance and reinsurance balances, net	(51,075)	208,783	(81,831)
Other items	(94,379)	26,452	(64,928)
Net cash provided by operating activities	199,004	10,773	259,229
Cash flows from investing activities:			
Purchases of:			
Fixed maturities	(9,994,025)	(8,464,140)	(8,714,990)
Equity securities	(58,022)	(73,107)	(106,136)
Mortgage loans	(194,020)	(106,171)	(31,077)
Other investments	(218,178)	(180,126)	(153,150)
Equity method investments	—	—	(1,000)
Short-term investments	(179,230)	(305,670)	(41,609)
Proceeds from the sale of:			
Fixed maturities	8,018,658	7,586,536	7,004,973
Equity securities	36,016	246,196	448,058
Other investments	249,129	361,030	260,943
Short-term investments	266,057	178,983	49,280
Proceeds from redemption of fixed maturities	1,282,796	1,241,214	2,009,982
Proceeds from redemption of short-term investments	19,366	45,831	119,427
Proceeds from the repayment of mortgage loans	60,244	133,081	56,435
Purchase of other assets	(63,106)	(25,103)	(42,685)
Purchase of subsidiaries, net	—	—	(466,941)
Net cash provided by (used in) investing activities	(774,315)	638,554	391,510
Cash flows from financing activities:			
Net proceeds from issuance of debt	717,509	—	346,362
Repayment of notes payable	(250,000)	—	(67,242)
Repurchase of common shares - open market	—	—	(261,180)
Taxes paid on withholding shares	(10,165)	(10,080)	(24,678)
Dividends paid - common shares	(137,209)	(133,502)	(135,032)
Repurchase of preferred shares	—	—	(351,074)
Dividends paid - preferred shares	(42,625)	(42,625)	(52,844)
Net cash provided by (used in) financing activities	277,510	(186,207)	(545,688)
Effect of exchange rate changes on foreign currency cash, cash equivalents and restricted cash	44,238	3,114	17,228

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, AND 2017

Increase (decrease) in cash, cash equivalents and restricted cash	(253,563)	466,234	122,279
Cash, cash equivalents and restricted cash - beginning of year	1,830,020	1,363,786	1,241,507
Cash, cash equivalents and restricted cash - end of year	\$ 1,576,457	\$ 1,830,020	\$ 1,363,786
Supplemental disclosures of cash flow information:			
Income taxes paid	\$ 39,949	\$ 15,698	\$ —
Interest paid	\$ 59,563	\$ 64,822	\$ 49,945

Supplemental disclosures of cash flow information:

In 2019, non-cash foreign exchange gains were attributable to the reclassification of the cumulative translation adjustment balance related to Aviabel Re S.A. from accumulated other comprehensive income in the consolidated balance sheet to foreign exchange losses (gains) in the consolidated statement of operations due to the liquidation of that entity (refer to Note 8 'Reserve for Losses and Loss Expenses' and Note 20 'Other Comprehensive Income (Loss)').

In 2018, total consideration paid for an agreement for the Reinsurance to Close ("RITC") of the 2015 and prior years of account of Syndicate 2007 was \$819 million of which \$600 million was settled by way of a transfer of securities and was treated as a non-cash activity in the consolidated statement of cash flows (refer to Note 8 'Reserve for Losses and Loss Expenses').

In 2017, non-cash foreign exchange losses were attributable to the reclassification of the cumulative translation adjustment balance related to AXIS Specialty Australia from accumulated other comprehensive income in the consolidated balance sheet to foreign exchange losses (gains) in the consolidated statement of operations due to the wind-down of that operation which was substantially complete at March 31, 2017 (refer to Note 8 'Reserve for Losses and Loss Expenses' and Note 20 'Other Comprehensive Income (Loss)').

See accompanying notes to Consolidated Financial Statements.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

1. HISTORY

AXIS Capital Holdings Limited ("AXIS Capital" and together with its wholly owned subsidiaries the "Company"), was incorporated on December 9, 2002, under the laws of Bermuda. The Company provides a broad range of insurance and reinsurance products on a worldwide basis. The Company's principal operating subsidiaries, located in Bermuda, the United States ("U.S."), Europe, Singapore and Canada are described below:

- AXIS Specialty Limited ("AXIS Specialty Bermuda"), a Bermuda domiciled company is licensed to provide specialty insurance and treaty reinsurance products on a worldwide basis. In addition, AXIS Specialty Bermuda conducts insurance and reinsurance business through its branch in Singapore, AXIS Specialty Limited (Singapore Branch).
- AXIS Insurance Company, domiciled in Illinois and AXIS Reinsurance Company, domiciled in New York, together with AXIS Reinsurance Company (Canadian Branch) are licensed to offer a range of specialty insurance and treaty reinsurance products to a variety of niche markets on a worldwide basis. AXIS Surplus Insurance Company, domiciled in the state of Illinois is eligible to write insurance on a surplus lines basis.
- AXIS Specialty Europe SE ("AXIS Specialty Europe") is a European public limited liability company, incorporated as a non-life insurer under the laws of Ireland. It is a Societas Europaea (SE), or European society company, and has been registered in accordance with company law of the E.U. AXIS Specialty Europe also conducts insurance business through its branch in the United Kingdom, AXIS Specialty Europe SE ("UK Branch"). Effective January 1, 2019, the shares of Compagnie Belge d'Assurances Aviation NV/SA ("Aviabel") were transferred to AXIS Specialty Europe from AXIS Specialty Holdings Ireland Limited and Aviabel was merged into AXIS Specialty Europe by way of merger by absorption and dissolved without going into liquidation (the "Aviabel Merger"). In connection with the Aviabel Merger, AXIS Specialty Europe established new branches in Belgium and the Netherlands, AXIS Specialty Europe SE (Belgium Branch) and AXIS Specialty Europe SE (Netherlands Branch), respectively. Effective January 1, 2019, AXIS Specialty Europe conducts insurance business through its new branches in Belgium and the Netherlands.
- AXIS Re SE is a European public limited liability company, incorporated as a reinsurer under the laws of Ireland. AXIS Re SE is also a Societas Europaea (SE). AXIS Re SE also conducts reinsurance business through its branch in Switzerland, AXIS Re SE, Dublin (Zurich Branch).
- The Company operates in the Lloyd's of London ("Lloyd's") market through its corporate members AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited (formerly Novae Corporate Underwriting Limited), which provide 70% and 30%, respectively of AXIS Syndicate 1686's ("Syndicate 1686") capital support. AXIS Corporate Capital UK Limited was the sole corporate member of Syndicate 1686 until December 31, 2018. AXIS Syndicate 1686 is managed by AXIS Managing Agency Ltd.
- On October 2, 2017, AXIS Specialty UK Holdings Limited, a wholly owned subsidiary of the Company, acquired a 100% ownership interest in Novae Group plc ("Novae"). AXIS Corporate Capital UK II Limited is the sole corporate member of Novae Syndicate 2007 ("Syndicate 2007"). Novae Syndicates Limited ("NSL") managed Syndicate 2007 until January 1, 2018, when the Company received authorization from Lloyd's for AXIS Managing Agency to commence management and oversight of Syndicate 2007. Effective January 1, 2019, Syndicate 2007 ceased accepting new business and was placed into run-off.
- AXIS Ventures Limited ("AXIS Ventures"), regulated by the BMA as an insurance manager, generates fee income from services provided to strategic capital partners.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and the rules and regulations of the U.S. Securities and Exchange Commission ("SEC") and include AXIS Capital and its wholly-owned subsidiaries.

All inter-company accounts and transactions have been eliminated.

During the three months ended March 31, 2018, the Company realigned its accident and health business by integrating this business and its operations into the Company's insurance and reinsurance segments. Through this realignment, the Company's accident and health business benefited from the greater scale and market presence of the Company's property and casualty insurance and reinsurance businesses and operations. Financial results relating to the Company's accident and health lines of business were previously included in the Company's insurance segment. Effective January 1, 2018, accident and health results are included in the results of both the insurance and reinsurance segments of the Company. As a result of the realignment, gross premiums written for the year ended December 31, 2017 of \$313 million and underwriting income for the year ended December 31, 2017 of \$14 million were reclassified from the Company's insurance segment to the Company's reinsurance segment.

At December 31, 2018 the Company represented reinsurance recoverable on unpaid losses separately from reinsurance recoverable on paid losses in the consolidated balance sheets. This presentation was adopted to facilitate comparison to the reconciliation of beginning and ending net reserves for unpaid losses and loss expenses (refer to Note 8 '*Reserve for Losses and Loss Expenses*').

These reclassifications did not impact results of operations, financial condition or liquidity.

Tabular dollar and share amounts are in thousands, with the exception of per share amounts. All amounts are reported in U.S. dollars.

Use of Estimates

The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. While management believes that the amounts included in the consolidated financial statements reflect its best estimates and assumptions, actual results could differ from those estimates. The Company's principal estimates include:

- reserve for losses and loss expenses;
- reinsurance recoverable on unpaid losses and loss expenses, including the provision for uncollectible amounts;
- gross and net premiums written and net premiums earned;
- fair value measurements of financial assets and liabilities; and
- other-than-temporary impairments ("OTTI") in the carrying value of available-for-sale securities.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

The Company's significant accounting policies are as follows:

a) Investments

Fixed Maturities, Available-for-sale, at Fair Value

Fixed maturities classified as available for sale are reported at fair value (refer to Note 6 'Fair Value Measurements'). The change in fair values of fixed maturities, net of tax is recognized in accumulated other comprehensive income (loss) ("AOCI") in the consolidated statement of changes in shareholders' equity.

Net investment income includes interest income and the amortization of market premiums and discounts and is presented net of investment expenses. Investment income is recognized when earned. Purchases and sales of fixed maturities are recorded on a trade-date basis and realized investment gains (losses) on sales of fixed maturities are determined based on the specific identification method. Realized investment gains (losses) on fixed maturities are included in net investment gains (losses) in the consolidated statements of operations.

The Company recognizes investment income from fixed maturities based on the constant effective yield method, which includes an adjustment for estimated principal repayments, if applicable. The effective yield used to determine the amortization of fixed maturities subject to prepayment risk (e.g. asset-backed, mortgage-backed and other structured securities) is recalculated and adjusted periodically based on historical and/or projected future cash flows. Adjustments to the yield for highly rated prepayable fixed maturities are accounted for using the retrospective method. Adjustments to the yield for other prepayable fixed maturities are accounted for using the prospective method.

A fixed maturity is impaired if the fair value of the investment is below amortized cost. On a quarterly basis, the Company assesses whether unrealized losses on fixed maturities represent impairments that are other-than-temporary. The Company's impairment review process begins with a quantitative analysis to identify securities to be evaluated for potential OTTI. For identified securities, fundamental analysis is performed that considers the following quantitative and qualitative factors:

- a. the duration and the extent of the decline;
- b. the financial condition, near-term and long-term prospects of the issuer of the security;
- c. the reason for the decline (e.g. credit spread widening, credit event, foreign exchange rate movements);
- d. the historical and implied future volatility of the fair value; and
- e. the collateral structure and credit support of the security, if applicable.

If a fixed maturity is impaired and the Company intends to sell the security or it is more likely than not that the Company will be required to sell the security before its anticipated recovery, the impairment is considered other-than-temporary. In these instances, the full amount of the impairment is charged to net income and is included in net investment gains (losses) in the consolidated statements of operations.

In instances where the Company intends to hold the impaired fixed maturity, the Company estimates the anticipated credit loss on the security and this component of the impairment is charged to net income and is included in net investment gains (losses) in the consolidated statements of operations. On recognition of an OTTI charge, the new cost basis for the security is the amortized cost basis less the OTTI charge recognized in net income. The new cost basis is not adjusted for subsequent increases in fair value. The difference between the new cost basis and the cash flows expected to be collected is accreted or amortized on a quarterly basis to net investment income over the remaining life of the fixed maturity.

The Company recognizes the non-credit component of the impairment (i.e. related to interest rates, market conditions, etc.) in other comprehensive income.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Equity Securities, at Fair Value

Equity securities are reported at fair value (refer to Note 6 'Fair Value Measurements'). Subsequent to the adoption of Accounting Standards Update ("ASU") 2016-01, "Financial Instruments - Overall (Subtopic 825-10) - *Recognition and Measurement of Financial Assets and Financial Liabilities*," on January 1, 2018, the change in the fair values of equity securities, net of tax is recognized in net investment gains (losses) in the consolidated statements of operations.

Net investment income includes dividend income and is presented net of investment expenses. Investment income is recognized when earned. Purchases and sales of equity securities are recorded on a trade-date basis and realized gains (losses) on sales of equity securities are determined based on the specific identification method. Realized gains (losses) on equity securities are included in net investment gains (losses) in the consolidated statements of operations.

Prior to the Adoption of ASU 2016-01

Equity securities are reported at fair value. Prior to the adoption of ASU 2016-01, the change in the fair values of equity securities, net of tax was recognized in AOCI in the consolidated statement of changes in shareholders' equity. An equity security is impaired if the fair value of the investment is below cost. On a quarterly basis, the Company assessed whether unrealized losses on equity securities represented impairments that were other-than-temporary and recognized impairments on equity securities in an unrealized loss position when the Company did not have the ability and intent to hold the security for a reasonable period of time to allow for a full recovery. The full amount of the impairment was charged to net income and was included in net investment gains (losses) in the consolidated statements of operations. On recognition of an OTTI charge, the new cost basis for the equity security was the cost for an equity security less the OTTI charge recognized in net income. The new cost basis was not adjusted for subsequent increases in fair value.

Mortgage Loans Held-for-investment

Mortgage loans held-for-investment are reported at amortized cost which is calculated as the unpaid principal balance, adjusted for any unamortized premium or discount, deferred fees or expenses, and is net of valuation allowances. Interest income and prepayment fees are recognized when earned. Interest income is recognized based on an effective yield method which gives effect to the amortization of premiums and accretion of discounts.

Other Investments

Other investments are recorded at fair value (refer to Note 6 'Fair Value Measurements'), with changes in fair value and realized gains (losses) reported in net investment income in the consolidated statements of operations.

Equity Method Investments

Investments in which the Company has significant influence over the operating and financial policies of the investee are classified as equity method investments and are accounted for using the equity method of accounting. In applying the equity method of accounting, investments are initially recorded at cost and are subsequently adjusted based on the Company's proportionate share of net income or loss of the investee. Adjustments are based on the most recently available financial information from the investee. Changes in the carrying value of these investments are recorded in net income as interest in income (loss) of equity method investments.

Short-term Investments

Short-term investments primarily comprise highly liquid debt securities with maturities greater than three months but less than one year from the date of purchase. These investments are carried at amortized cost, which approximates fair value.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

b) Cash and Cash Equivalents

Cash equivalents include money-market funds, fixed interest deposits and reverse repurchase agreements with a maturity of under 90 days when purchased. Cash and cash equivalents are recorded at amortized cost, which approximates fair value due to the short-term, liquid nature of these securities. Restricted cash primarily relates to funds held in trust to support of obligations in regulatory jurisdictions where the Company operates as a non-admitted carrier and to support the underwriting activities of Syndicate 1686 and Syndicate 2007 at Lloyd's.

c) Premiums and Acquisition Costs

Premiums

Insurance premiums written are recorded in accordance with the terms of the underlying policies.

Reinsurance premiums are recorded at the inception of the contract and are estimated based on information received from ceding companies. For multi-year contracts insurance and reinsurance premiums are recorded at the inception of the contract based on management's best estimate of total premiums to be received. Premiums are recognized on an annual basis for multi-year contracts where the cedant has the ability to unilaterally commute or cancel coverage within the term of the contract.

Any adjustments to insurance and reinsurance premium estimates are recognized in the period in which they are determined.

Insurance and reinsurance premiums are earned evenly over the period during which the Company is exposed to the underlying risk, which is generally one to two years with the exception of multi-year contracts. Unearned premiums represent the portion of premiums which relate to the unexpired risks under contracts in force.

Reinstatement premiums are recognized and earned at the time a loss event occurs and losses are recorded, where the coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. The recognition of reinstatement premiums is based on estimates of losses and loss expenses, which reflects management's judgment, as described in Note 2(d) '*Losses and Loss Expenses*' below.

Insurance and reinsurance premiums balances receivable are reviewed for impairment at least quarterly and an allowance is established for amounts considered uncollectible.

Acquisition Costs

Acquisition costs vary with and are directly related to the successful acquisition efforts of acquiring new or renewing existing insurance and reinsurance contracts and consist primarily of fees and commissions paid to brokers and premium taxes. Acquisition costs are shown net of commissions on reinsurance purchased. Net acquisition costs are deferred and charged to net income as the related premium is earned. Insurance and reinsurance premiums balance receivable is presented net of acquisition costs when contract terms provide for the right of offset.

Anticipated losses and loss expenses, other costs and investment income related to these premiums are considered in assessing the recoverability of deferred acquisition costs. If deferred amounts are estimated to be unrecoverable, they are expensed. Compensation expenses for personnel involved in contract acquisition, as well as advertising costs, are expensed as incurred.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d) Losses and Loss Expenses

Reserve for losses and loss expenses represents an estimate of the unpaid portion of the ultimate liability for losses and loss expenses for insured and reinsured events that have occurred at or before the balance sheet date. These amounts reflect claims that have been reported ("case reserves") and claims that have been incurred but have not yet been reported ("IBNR") and are reduced for estimated amounts of salvage and subrogation recoveries.

The Company reviews its reserve for losses and loss expenses on a quarterly basis. Case reserves are primarily established based on amounts reported by insureds and/or their brokers. Management estimates IBNR after reviewing detailed actuarial analyses and applying informed judgment regarding qualitative factors that may not be fully captured in the actuarial estimates. A variety of actuarial methods are utilized in this process, including the Expected Loss Ratio, Chain Ladder and Bornhuetter Ferguson methods. The estimate is highly dependent on management's judgment as to which method(s) are most appropriate for a particular accident/underwriting year and line of business. Historical claims data is often supplemented with industry benchmarks when applying these methodologies.

Any adjustments to reserve for losses and loss expenses estimates are recognized in the period in which they are determined. While the Company believes that its reserves for losses and loss expenses are adequate, this estimate requires significant judgment and new information, events or circumstances may result in ultimate losses that are materially greater or less than provided for in the consolidated balance sheets.

e) Reinsurance

In the normal course of business, the Company purchases treaty and facultative reinsurance protection to limit its ultimate losses from catastrophic events and to reduce its loss aggregation risk. The premiums paid to reinsurers (i.e. ceded premiums written) are recognized over the coverage period. Prepaid reinsurance premiums represent the portion of premiums ceded which relate to the unexpired term of the contracts in force. Reinstatement premiums are recognized and earned at the time a loss event occurs and losses are recorded, where the coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms.

Reinsurance recoverable on unpaid and paid losses and loss expenses ("reinsurance recoverable") related to case reserves is estimated on a case-by-case basis by applying the terms of applicable reinsurance cover to individual case reserve estimates. Reinsurance recoverable related to IBNR is generally developed as part of the Company's loss reserving process, therefore, its estimation is subject to similar risks and uncertainties as the estimation of IBNR.

Reinsurance recoverable is presented net of a provision for uncollectible amounts, reflecting the amount the Company believes ultimately will not be recovered from reinsurers due to insolvency, contractual disputes over contract language or coverage and/or some other reason. The Company applies case specific provisions against reinsurance recoverable balances that it deems unlikely to be collected in full. In addition, the Company uses a default analysis to estimate the provision for uncollectible amounts on the remainder of the reinsurance recoverable balance.

The estimates of reinsurance recoverable and the provision for uncollectible amounts require management's judgment and are reviewed in detail on a quarterly basis. Any adjustments to the provision for uncollectible amounts are recognized in the period in which they are determined.

Retroactive Reinsurance

Retroactive reinsurance reimburses a ceding company for liabilities incurred as a result of past insurable events covered under contracts subject to the reinsurance. In certain instances, reinsurance contracts cover losses both on a prospective basis and on a retroactive basis and where practical the Company bifurcates the prospective and retrospective elements of these reinsurance contracts and accounts for each element separately. Initial gains in connection with retroactive reinsurance contracts are deferred and amortized into income over the settlement period while losses are recognized immediately. When changes in the estimated amount recoverable from the reinsurer or in the timing of receipts related to that amount occur, a cumulative amortization adjustment is recognized in net income in the period in which the change is determined so that the

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

deferred gain reflects the balance that would have existed had the revised estimate been available at the inception of the reinsurance transaction.

f) Foreign Exchange

The functional currency of the Company and the majority of its subsidiaries is the U.S. dollar. All foreign currency transactions are initially measured and recorded in functional currency using the rates of exchange prevailing at the transaction date.

Monetary assets and liabilities denominated in foreign currency are remeasured to functional currency at the rates of exchange in effect at the balance sheet date with the resulting foreign exchange losses (gains) generally being recognized in the consolidated statements of operations. Foreign exchange losses (gains) related to available for sale investments denominated in foreign currency represent an unrealized appreciation (depreciation) in the market value of the securities and are included in AOCI. Non-monetary assets and liabilities denominated in foreign currency are not subsequently remeasured.

The Company's reporting currency is the U.S. dollar. Assets and liabilities of the Company's subsidiaries and branches where the functional currency is not the U.S. dollar, are translated into U.S. dollars using the rates of exchange in effect at the balance sheet date, and revenue and expenses are translated using the weighted average foreign exchange rates for the period. The effect of translation adjustments is reported as a separate component of AOCI in the consolidated statements of change shareholders' equity.

g) Share-based Compensation

The Company is authorized to issue restricted shares, restricted stock units, performance units, stock options, stock appreciation rights and other equity-based awards to its employees and directors. The Company's plan includes share-settled and cash-settled service and performance awards.

The fair value of share-settled and cash-settled service and performance awards is based on the market value of the Company's common share measured at the grant date and is expensed over the requisite service period. Compensation expense associated with share-settled and cash-settled performance awards is also subject to periodic adjustment based on the achievement of established performance criteria during the applicable performance period.

The fair value of the cash-settled service and performance awards is recognized as a liability in the consolidated balance sheets and is remeasured at the end of each reporting period.

The Company recognizes forfeitures when they occur.

h) Derivative Instruments

The Company may enter into derivative instruments such as futures, options, interest rate swaps and foreign currency forward contracts as part of its overall foreign currency risk management strategy, to obtain exposure to a particular financial market or for yield enhancement.

During 2013, the Company began to write derivative based risk management products designed to address weather and commodity price risks, with the objective of generating profits on a portfolio basis. Effective July 1, 2017, the Company ceased writing derivative-based risk management products which address weather risks.

From time to time the Company may also enter into insurance and reinsurance contracts that meet the Financial Accounting Standards Board's ("FASB") definition of a derivative contract.

The Company measures all derivative instruments at fair value (refer to Note 6 '*Fair Value Measurements*') and recognizes these instruments as either assets or liabilities in the consolidated balance sheets. Subsequent changes in fair value and any realized gains or losses are recognized in the consolidated statements of operations.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

i) Goodwill and Intangible Assets

The Company recognizes goodwill and other intangible assets in connection with certain acquisitions. Goodwill represents the excess of the purchase price paid over the fair value of the net assets acquired in these acquisitions and is not amortized. Other intangible assets with a finite life are amortized over the estimated useful life of the intangible asset. Other intangible assets with an indefinite life are not amortized.

The Company tests goodwill and indefinite intangible assets for potential impairment during the fourth quarter each year and between annual tests if an event occurs or changes in circumstances indicate that the asset is impaired. Such events or circumstances may include an economic downturn in a geographic market or a change in the assessment of future operations.

For the purpose of evaluating goodwill for impairment, the Company may first perform a qualitative assessment to determine whether it is necessary to perform a quantitative goodwill impairment test. If determined to be necessary, the quantitative test compares the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired. If the carrying amount of the reporting unit exceeds the fair value, an impairment loss is recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

For the purpose of evaluating indefinite lived intangibles for impairment, the Company may first perform a qualitative assessment to determine whether it is necessary to perform the quantitative impairment test. If the Company elects to perform a qualitative assessment, it first assesses qualitative factors to determine whether it is more likely than not that an indefinite lived intangible asset is impaired. If the Company determines that it is not more likely than not that the indefinite lived intangible asset is impaired, the Company performs the quantitative impairment test.

For the purposes of evaluating goodwill and indefinite lived intangible assets for impairment, the Company has an unconditional option to bypass the qualitative assessment in any period and proceed directly to performing the quantitative impairment test. The Company may resume performing the qualitative assessment in any subsequent period.

For other definite lived intangible asset the Company tests for recoverability whenever events or changes in circumstances indicate its carrying amount may not be recoverable. The Company recognizes an impairment loss if the carrying amount of the asset is not recoverable and exceeds its fair value. The carrying amount of a definite lived intangible asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset.

If goodwill or an intangible asset is impaired, the carrying value of the asset is reduced to fair value and a corresponding expense is recorded in the consolidated statements of operations.

j) Income Taxes

Certain subsidiaries and branches of the Company operate in jurisdictions where they are subject to taxation. Current and deferred income taxes are charged or credited to net income, or in certain cases to AOCI, based on enacted tax laws and rates applicable in the relevant jurisdiction in the period in which the tax becomes accruable or realizable. Deferred income taxes are provided for all temporary differences between the bases of assets and liabilities used in the consolidated balance sheets and those used in the various jurisdictional tax returns. When the assessment indicates that it is more likely than not that a portion of a deferred tax asset will not be realized in the foreseeable future, a valuation allowance against deferred tax assets is recorded. The Company recognizes the tax benefits of uncertain tax positions only when the position is more-likely-than-not to be sustained on audit by the relevant taxing authorities.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

k) Treasury Shares

Common shares repurchased by the Company and not subsequently canceled are classified as treasury shares and are recorded at cost. This results in a reduction of shareholders' equity in the consolidated balance sheets. The Company uses the average cost method to determine the cost of shares reissued from treasury.

l) New Accounting Standards Adopted in 2019

Leases

Effective January 1, 2019, the Company adopted ASU 2016-02, "Leases (Topic 842)," which provides a new comprehensive model for lease accounting. Topic 842 requires a lessee to recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. The adoption of this standard resulted in the recognition of lease liabilities and right-of-use assets of \$150 million in the Company's consolidated balance sheet at January 1, 2019, which are related to office property and equipment leases.

In addition, the Company adopted ASU 2018-11, "Leases (Topic 842) - Targeted Improvements," which provides an additional (and optional) transition method to adopt the new lease guidance. Under the alternative transition method, the Company's reporting for the comparative periods presented in its financial statements will be in accordance with the pre-effective date lease accounting requirements (Topic 840).

The Company also elected the package of practical expedients permitted under the transition guidance of Topic 842, which were elected as a package and applied consistently to all leases. At the adoption date, the package of practical expedients permitted the Company to not reassess the following:

1. whether any expired or existing contracts are or contain leases;
2. the lease classification for any expired or existing leases; and
3. initial direct costs for any existing leases.

In addition to electing the package of practical expedients, the Company made an accounting policy election to account for non-lease components separately from lease components. As a result, the non-lease components associated with the Company's leases are not included in the lease liabilities and right-of-use assets in the Company's consolidated balance sheet at December 31, 2019.

Further, the Company made an accounting policy election to not record office property and equipment leases with an initial term of 12 months or less (short-term) in the Company's consolidated balance sheets. For the year ended December 31, 2019, the Company recognized expenses for short-term leases of \$1.1 million in the Company's consolidated statements of operations. The adoption of this guidance did not impact the Company's retained earnings or liquidity and it did not have a material impact on the Company's results of operations.

Premium Amortization on Purchased Callable Debt Securities

Effective January 1, 2019, the Company adopted ASU 2017-08, "Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20) - Premium Amortization on Purchased Callable Debt Securities," which shortens the amortization period for certain purchased callable debt securities held at a premium. The adoption of this guidance did not impact the Company's results of operations, financial condition or liquidity.

Changes to Disclosures on Fair Value Measurement

Effective January 1, 2019, the Company adopted ASU 2018-13, "Fair Value Measurement (Topic 820) - Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement," which aims to improve the effectiveness of fair value measurement disclosures. The adoption of this guidance did not impact the Company's results of operations, financial condition, or liquidity.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

2. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

m) Recently Issued Accounting Standards Not Yet Adopted

Measurement of Credit Losses on Financial Instrument

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments - Credit Losses (Topic 326) - *Measurement of Credit Losses on Financial Instruments*," which replaces the "incurred loss" impairment methodology with an approach based on "expected losses" to estimate credit losses on certain types of financial instruments and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The Company's mortgage loans, held for investment, insurance and reinsurance premium balances receivable and its reinsurance recoverables on unpaid and paid losses and loss expenses are its more significant financial assets within the scope of ASU 2016-13. The guidance requires financial assets to be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the cost of the financial asset to present the net carrying value at the amount expected to be collected on the financial asset. This guidance is effective for interim and annual periods beginning after December 15, 2019. The Company does not anticipate that the adoption of this guidance will have a material impact on its results of operations, financial condition or liquidity.

The Company will also be impacted by the targeted changes to the impairment model for available for sale securities introduced in ASU 2016-13. Credit losses relating to available for sale debt securities will be recorded through an allowance for credit losses. This guidance is effective for interim and annual periods beginning after December 15, 2019. The Company is currently evaluating the impact of this guidance on its results of operations, financial condition and liquidity.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

3. SEGMENT INFORMATION

AXIS Capital's underwriting operations are organized around its global underwriting platforms, AXIS Insurance and AXIS Re. The Company has determined that it has two reportable segments, insurance and reinsurance. The Company does not allocate its assets by segment, with the exception of goodwill and intangible assets, as it evaluates the underwriting results of each segment separately from the results of its investment portfolio.

Insurance

The Company's insurance segment offers specialty insurance products to a variety of niche markets on a worldwide basis. The product lines in this segment are property, marine, terrorism, aviation, credit and political risk, professional lines, liability, accident and health, and discontinued lines - Novae.

Reinsurance

The Company's reinsurance segment provides treaty reinsurance to insurance companies on a worldwide basis. The product lines in this segment are catastrophe, property, professional lines, credit and surety, motor, liability, agriculture, engineering, marine and other, accident and health, and discontinued lines - Novae. The reinsurance segment also wrote derivative based risk management products designed to address weather and commodity price risks until July 1, 2017.

The following tables present the underwriting results of the Company's reportable segments, as well as the carrying amounts of allocated goodwill and intangible assets:

At and year ended December 31, 2019	Insurance	Reinsurance	Total
Gross premiums written	\$ 3,675,931	\$ 3,222,927	\$ 6,898,858
Net premiums written	2,209,155	2,280,460	4,489,615
Net premiums earned	2,190,084	2,397,094	4,587,178
Other insurance related income	2,858	13,586	16,444
Net losses and loss expenses	(1,278,679)	(1,766,119)	(3,044,798)
Acquisition costs	(468,281)	(556,301)	(1,024,582)
General and administrative expenses	(401,963)	(103,772)	(505,735)
Underwriting income (loss)	\$ 44,019	\$ (15,512)	\$ 28,507
Net investment income			478,572
Net investment gains			91,233
Corporate expenses			(129,096)
Foreign exchange gains			12,041
Interest expense and financing costs			(68,107)
Reorganization expenses			(37,384)
Amortization of value of business acquired			(26,722)
Amortization of intangible assets			(11,597)
Income before income taxes and interest in income method investments			\$ 337,447
Net losses and loss expenses ratio	58.4%	73.7%	66.4%
Acquisition cost ratio	21.4%	23.2%	22.3%
General and administrative expense ratio	18.3%	4.3%	13.9%
Combined ratio	98.1%	101.2%	102.6%
Goodwill and intangible assets	\$ 332,553	\$ —	\$ 332,553

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

3. SEGMENT INFORMATION (CONTINUED)

At and year ended December 31, 2018	Insurance	Reinsurance	Total
Gross premiums written	\$ 3,797,592	\$ 3,112,473	\$ 6,910,065
Net premiums written	2,324,747	2,334,215	4,658,962
Net premiums earned	2,362,606	2,428,889	4,791,495
Other insurance related income	3,460	7,162	10,622
Net losses and loss expenses	(1,494,323)	(1,695,964)	(3,190,287)
Acquisition costs	(399,193)	(569,642)	(968,835)
General and administrative expenses	(395,252)	(123,916)	(519,168)
Underwriting income	<u>\$ 77,298</u>	<u>\$ 46,529</u>	<u>\$ 123,827</u>
Net investment income			438,507
Net investment losses			(150,218)
Corporate expenses			(108,221)
Foreign exchange gains			29,165
Interest expense and financing costs			(67,432)
Reorganization expenses			(66,940)
Amortization of value of business acquired			(172,332)
Amortization of intangible assets			(13,814)
Income before income taxes and interest in income (loss) of equity method investments			<u>\$ 12,542</u>
Net losses and loss expenses ratio	63.2%	69.8%	66.6%
Acquisition cost ratio	16.9%	23.5%	20.2%
General and administrative expense ratio	16.8%	5.1%	13.1%
Combined ratio	<u>96.9%</u>	<u>98.4%</u>	<u>99.9%</u>
Goodwill and intangible assets	<u>\$ 343,571</u>	<u>\$ —</u>	<u>\$ 343,571</u>

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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3. SEGMENT INFORMATION (CONTINUED)

At and year ended December 31, 2017	Insurance	Reinsurance	Total
Gross premiums written	\$ 2,814,918	\$ 2,741,355	\$ 5,556,273
Net premiums written	1,775,825	2,251,318	4,027,143
Net premiums earned	1,816,438	2,332,322	4,148,760
Other insurance related income (losses)	2,944	(4,184)	(1,240)
Net losses and loss expenses	(1,465,427)	(1,822,345)	(3,287,772)
Acquisition costs	(270,229)	(553,362)	(823,591)
General and administrative expenses	(325,368)	(124,115)	(449,483)
Underwriting loss	<u>\$ (241,642)</u>	<u>\$ (171,684)</u>	<u>\$ (413,326)</u>
Net investment income			400,805
Net investment gains			28,226
Corporate expenses			(129,945)
Foreign exchange losses			(134,737)
Interest expense and financing costs			(54,811)
Bargain purchase gain			15,044
Transaction and reorganization expenses			(26,718)
Amortization of value of business acquired			(50,104)
Amortization of intangible assets			(2,543)
Loss before income taxes and interest in income (loss) of equity method investments			<u>\$ (368,109)</u>
Net losses and loss expenses ratio	80.7%	78.1%	79.2%
Acquisition cost ratio	14.9%	23.7%	19.9%
General and administrative expense ratio	17.9%	5.3%	14.0%
Combined ratio	<u>113.5%</u>	<u>107.1%</u>	<u>113.1%</u>
Goodwill and intangible assets	<u>\$ 359,990</u>	<u>\$ —</u>	<u>\$ 359,990</u>

The following table presents gross premiums written by the geographical location of the Company's subsidiaries:

Years ended December 31,	2019	2018	2017
Bermuda	\$ 738,258	\$ 606,452	\$ 529,425
Ireland	1,679,646	1,805,882	1,569,956
U.S.	3,090,547	2,811,537	2,814,933
Lloyd's of London	1,390,407	1,686,194	641,959
Gross premiums written	<u>\$ 6,898,858</u>	<u>\$ 6,910,065</u>	<u>\$ 5,556,273</u>

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

3. SEGMENT INFORMATION (CONTINUED)

The following table presents net premiums earned by segment and line of business:

Years ended December 31,	2019	2018	2017
Insurance			
Property	\$ 633,550	\$ 796,945	\$ 543,342
Marine	281,764	300,944	181,533
Terrorism	47,345	49,150	36,084
Aviation	55,028	74,203	75,107
Credit and political risk	91,698	102,825	56,432
Professional lines	661,250	570,241	519,759
Liability	264,667	229,373	188,770
Accident and health	144,499	207,777	199,121
Discontinued lines - Novae	10,283	31,148	16,290
Total Insurance	2,190,084	2,362,606	1,816,438
Reinsurance			
Catastrophe	267,591	250,016	209,470
Property	311,625	317,038	304,376
Professional lines	206,328	220,687	226,622
Credit and surety	208,717	250,276	244,186
Motor	398,565	438,693	371,501
Liability	373,664	363,292	351,940
Agriculture	188,925	176,435	195,391
Engineering	63,899	67,932	66,291
Marine and other	59,209	35,570	64,449
Accident and health	319,619	299,813	289,925
Discontinued lines - Novae	(1,048)	9,137	8,171
Total Reinsurance	2,397,094	2,428,889	2,332,322
Total	\$ 4,587,178	\$ 4,791,495	\$ 4,148,760

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

4. GOODWILL AND INTANGIBLE ASSETS

The table below provides details of goodwill and intangible assets related to the Company's insurance segment:

	Goodwill	Intangible assets with an indefinite life	Intangible assets with a finite life	Total
Balance at December 31, 2017				
Gross amount	\$ 42,237	\$ 26,036	\$ 23,030	\$ 91,303
Accumulated amortization	n/a	n/a	(11,165)	(11,165)
Accumulated translation adjustment	4,911	—	—	4,911
	<u>47,148</u>	<u>26,036</u>	<u>11,865</u>	<u>85,049</u>
Acquired during the year	54,855	94,748	387,545	537,148
Amortization	n/a	n/a	(55,369)	(55,369)
Balance at December 31, 2018				
Gross amount	97,092	120,784	410,575	628,451
Accumulated amortization	n/a	n/a	(66,534)	(66,534)
Accumulated translation adjustment	4,911	—	—	4,911
	<u>102,003</u>	<u>120,784</u>	<u>344,041</u>	<u>566,828</u>
Amortization	n/a	n/a	(184,043)	(184,043)
Impairment charges	—	—	(3,500)	(3,500)
Balance at December 31, 2019				
Gross amount	\$ 97,092	\$ 120,784	\$ 404,304	\$ 622,180
Accumulated amortization	n/a	n/a	(247,804)	(247,804)
Accumulated translation adjustment	4,911	—	—	4,911
	<u>102,003</u>	<u>120,784</u>	<u>156,500</u>	<u>379,287</u>
Amortization	n/a	n/a	(37,742)	(37,742)
	<u>\$ 102,003</u>	<u>\$ 120,784</u>	<u>\$ 118,758</u>	<u>\$ 341,545</u>

n/a – not applicable

Acquisitions in 2017

In connection with the acquisition of Novae, the Company identified finite lived intangible assets of \$385 million, including Value of Business Acquired ("VOBA") which represents the present value of the expected underwriting profit within policies that were in-force at the closing date of the transaction, of \$257 million and other finite lived intangible assets primarily related to distribution networks of \$128 million. In addition, the Company identified indefinite lived intangible assets related to Lloyd's syndicate capacity of \$95 million. The Company also recognized goodwill of \$54 million.

In connection with the acquisition of Contessa Limited, the Company recognized goodwill of \$1 million.

Intangible Assets with an Indefinite Life

Intangible assets with an indefinite life include U.S. state licenses that provide a legal right to transact business indefinitely and the value of Lloyd's syndicate capacity, which represents Novae's right to underwrite a certain allocated limit of premium in the Lloyd's market.

Impairment Review

The Company's impairment review of goodwill and indefinite lived intangibles did not result in the recognition of an impairment loss for the years ended December 31, 2019 and 2017. For the year ended December 31 2018, an impairment loss

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

4. GOODWILL AND INTANGIBLE ASSETS (CONTINUED)

of \$4 million was recognized related to the termination of the Managing General Agent ("MGA") contract intangible asset identified in connection with the acquisition of Novae.

The tables below provide details of the gross amount and accumulated amortization by category of VOBA and intangible assets:

Balance At December 31, 2019	VOBA and intangible assets		
	Gross amount	Accumulated amortization	Total
U.S. state licenses	\$ 26,036	n/a	\$ 26,036
Customer lists, trademark and non-compete - Media Pro ⁽¹⁾	9,700	(9,700)	—
Customer relationships and customers lists - Ternian ⁽²⁾	13,330	(6,333)	6,997
VOBA - Novae	256,942	(247,950)	8,992
Syndicate capacity	94,748	n/a	94,748
Coverholders	63,565	(11,918)	51,647
Large brokers	46,641	(6,996)	39,645
SME brokers	14,126	(2,649)	11,477
	<u>\$ 525,088</u>	<u>\$ (285,546)</u>	<u>\$ 239,542</u>

(1) On May 1, 2007, the Company acquired the assets and operations of Media/Professional Insurance (Media/Pro) and recognized the definite life intangible assets detailed above.

(2) On April 1, 2015, the Company completed its acquisition of Ternian Insurance Group LLC and recognized definite life intangible assets detailed above.

Balance At December 31, 2018	VOBA and intangible assets		
	Gross amount	Accumulated amortization and impairment	Total
U.S. state licenses	\$ 26,036	n/a	\$ 26,036
Customer lists, trademark and non-compete - Media Pro	9,700	(9,598)	102
Customer relationships and customers lists - Ternian	13,330	(4,999)	8,331
VOBA - Aviabel	2,140	(2,140)	—
VOBA - Novae	256,942	(221,228)	35,714
Syndicate capacity	94,748	n/a	94,748
Coverholders	63,565	(6,622)	56,943
Large brokers	46,641	(3,888)	42,753
SME brokers	14,126	(1,471)	12,655
MGA contract ⁽¹⁾	4,131	(4,131)	—
	<u>\$ 531,359</u>	<u>\$ (254,077)</u>	<u>\$ 277,282</u>

(1) During the year ended December 31, 2018, an impairment charge of \$3,500 was recognized related to the termination of the MGA contract intangible asset identified in connection with the acquisition of Novae.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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4. GOODWILL AND INTANGIBLE ASSETS (CONTINUED)

The table below provides details of estimated amortization expense of VOBA and intangible assets with a finite life:

	VOBA	Intangible assets	Total
2020	5,139	10,916	16,055
2021	3,853	10,916	14,769
2022	—	10,916	10,916
2023	—	10,916	10,916
2024	—	10,916	10,916
2025 and thereafter	—	55,186	55,186
Total remaining amortization expense	8,992	109,766	118,758
Indefinite lived intangible assets	—	120,784	120,784
Total intangible assets	\$ 8,992	\$ 230,550	\$ 239,542

The estimated remaining useful lives of finite lived intangible assets range from 2 to 13 years.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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5. INVESTMENTS

a) Fixed Maturities and Equity Securities

Fixed Maturities

The following table provides the amortized cost and fair values of the Company's fixed maturities classified as available for sale:

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
<u>At December 31, 2019</u>				
Fixed maturities				
U.S. government and agency	\$ 2,102,849	\$ 16,345	\$ (6,313)	\$ 2,112,881
Non-U.S. government	564,505	14,535	(2,448)	576,592
Corporate debt	4,797,384	140,426	(7,556)	4,930,254
Agency RMBS ⁽¹⁾	1,570,823	25,215	(3,454)	1,592,584
CMBS ⁽²⁾	1,340,156	29,838	(4,942)	1,365,052
Non-Agency RMBS	84,381	1,393	(852)	84,922
ABS ⁽³⁾	1,599,867	4,706	(5,880)	1,598,693
Municipals ⁽⁴⁾	203,275	4,359	(407)	207,227
Total fixed maturities	\$ 12,263,240	\$ 236,817	\$ (31,852)	\$ 12,468,205
<u>At December 31, 2018</u>				
Fixed maturities				
U.S. government and agency	\$ 1,520,142	\$ 4,232	\$ (8,677)	\$ 1,515,697
Non-U.S. government	507,550	1,586	(16,120)	493,016
Corporate debt	4,990,279	15,086	(128,444)	4,876,921
Agency RMBS ⁽¹⁾	1,666,684	6,508	(29,884)	1,643,308
CMBS ⁽²⁾	1,103,507	2,818	(13,795)	1,092,530
Non-Agency RMBS	40,732	1,237	(1,282)	40,687
ABS ⁽³⁾	1,651,350	1,493	(15,240)	1,637,603
Municipals ⁽⁴⁾	136,068	914	(1,397)	135,585
Total fixed maturities	\$ 11,616,312	\$ 33,874	\$ (214,839)	\$ 11,435,347

(1) Residential mortgage-backed securities ("RMBS") originated by U.S. government-sponsored agencies.

(2) Commercial mortgage-backed securities ("CMBS").

(3) Asset-backed securities ("ABS") include debt tranches collateralized primarily by auto loans, student loans, credit card receivables and collateralized loan obligations ("CLOs").

(4) Municipals include bonds issued by states, municipalities and political subdivisions.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

5. INVESTMENTS (CONTINUED)

Equity Securities

The following table provides the cost and fair values of the Company's equity securities:

	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
<u>At December 31, 2019</u>				
Equity securities				
Common stocks	\$ 504	\$ 77	\$ (388)	\$ 193
Exchange-traded funds	215,986	81,444	(105)	297,325
Bond mutual funds	182,466	—	(5,777)	176,689
Total equity securities	\$ 398,956	\$ 81,521	\$ (6,270)	\$ 474,207
<u>At December 31, 2018</u>				
Equity securities				
Common stocks	\$ 790	\$ 112	\$ (375)	\$ 527
Exchange-traded funds	213,420	33,498	(10,079)	236,839
Bond mutual funds	151,695	—	(7,428)	144,267
Total equity securities	\$ 365,905	\$ 33,610	\$ (17,882)	\$ 381,633

In the normal course of investing activities, the Company actively manages allocations to non-controlling tranches of structured securities which are variable interests issued by Variable Interest Entities ("VIEs"). These structured securities include RMBS, CMBS and ABS.

The Company also invests in limited partnerships which represent 55% of the Company's other investments. The investments in limited partnerships include hedge funds, direct lending funds, private equity funds and real estate funds as well as CLO equity tranch securities, which are variable interests issued by VIEs (refer to Note 5(c) 'Other Investments'). The Company does not have the power to direct the activities that are most significant to the economic performance of these VIEs therefore the Company is not the primary beneficiary of these VIEs.

The maximum exposure to loss on these interests is limited to the amount of investment made by the Company. The Company has not provided financial or other support to these structured securities other than the original investment.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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5. INVESTMENTS (CONTINUED)

Contractual Maturities

Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties. The table below provides the contractual maturities of fixed maturities:

	Amortized cost	Fair value	% of Total fair value
<u>At December 31, 2019</u>			
Maturity			
Due in one year or less	\$ 438,881	\$ 443,228	3.6%
Due after one year through five years	4,810,202	4,884,837	39.2%
Due after five years through ten years	2,091,486	2,157,157	17.3%
Due after ten years	327,444	341,732	2.7%
	<u>7,668,013</u>	<u>7,826,954</u>	<u>62.8%</u>
Agency RMBS	1,570,823	1,592,584	12.8%
CMBS	1,340,156	1,365,052	10.9%
Non-Agency RMBS	84,381	84,922	0.7%
ABS	1,599,867	1,598,693	12.8%
Total	<u>\$ 12,263,240</u>	<u>\$ 12,468,205</u>	<u>100.0%</u>
<u>At December 31, 2018</u>			
Maturity			
Due in one year or less	\$ 430,390	\$ 426,142	3.7%
Due after one year through five years	4,751,064	4,691,263	41.0%
Due after five years through ten years	1,762,452	1,697,737	14.8%
Due after ten years	210,133	206,077	1.8%
	<u>7,154,039</u>	<u>7,021,219</u>	<u>61.3%</u>
Agency RMBS	1,666,684	1,643,308	14.4%
CMBS	1,103,507	1,092,530	9.6%
Non-Agency RMBS	40,732	40,687	0.4%
ABS	1,651,350	1,637,603	14.3%
Total	<u>\$ 11,616,312</u>	<u>\$ 11,435,347</u>	<u>100.0%</u>

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

5. INVESTMENTS (CONTINUED)

Gross Unrealized Losses

The following table summarizes fixed maturities and equity securities in an unrealized loss position and the aggregate fair value and gross unrealized loss by length of time the security has continuously been in an unrealized loss position:

	12 months or greater		Less than 12 months		Total	
	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
At December 31, 2019						
Fixed maturities						
U.S. government and agency	\$ 9,536	\$ (67)	\$ 614,705	\$ (6,246)	\$ 624,241	\$ (6,313)
Non-U.S. government	99,466	(2,036)	18,361	(412)	117,827	(2,448)
Corporate debt	121,635	(3,847)	375,858	(3,709)	497,493	(7,556)
Agency RMBS	195,395	(1,816)	326,402	(1,638)	521,797	(3,454)
CMBS	24,281	(64)	364,641	(4,878)	388,922	(4,942)
Non-Agency RMBS	6,345	(792)	25,816	(60)	32,161	(852)
ABS	535,780	(4,667)	404,641	(1,213)	940,421	(5,880)
Municipals	5,418	(34)	46,684	(373)	52,102	(407)
Total fixed maturities	\$ 997,856	\$ (13,323)	\$ 2,177,108	\$ (18,529)	\$ 3,174,964	\$ (31,852)
At December 31, 2018						
Fixed maturities						
U.S. government and agency	\$ 374,030	\$ (7,659)	\$ 424,439	\$ (1,018)	\$ 798,469	\$ (8,677)
Non-U.S. government	44,339	(2,004)	303,376	(14,116)	347,715	(16,120)
Corporate debt	1,439,378	(58,915)	2,547,135	(69,529)	3,986,513	(128,444)
Agency RMBS	940,645	(29,255)	117,181	(629)	1,057,826	(29,884)
CMBS	455,582	(11,430)	353,802	(2,365)	809,384	(13,795)
Non-Agency RMBS	9,494	(1,170)	11,432	(112)	20,926	(1,282)
ABS	237,237	(2,755)	1,150,692	(12,485)	1,387,929	(15,240)
Municipals	68,814	(1,373)	9,894	(24)	78,708	(1,397)
Total fixed maturities	\$ 3,569,519	\$ (114,561)	\$ 4,917,951	\$ (100,278)	\$ 8,487,470	\$ (214,839)

Fixed Maturities

At December 31, 2019, 1,190 fixed maturities (2018: 3,599) were in an unrealized loss position of \$32 million (2018: \$215 million) of which \$5 million (2018: \$49 million) was related to securities below investment grade or not rated.

At December 31, 2019, 497 fixed maturities (2018: 1,656) had been in a continuous unrealized loss position for twelve months or greater and had a fair value of \$998 million (2018: \$3,570 million). Following a credit impairment review, it was concluded that these securities as well as the remaining securities in an unrealized loss position were temporarily impaired at December 31, 2019, and were expected to recover in value as the securities approach maturity. At December 31, 2019, the Company did not intend to sell the securities in an unrealized loss position and it is more likely than not that the Company will not be required to sell these securities before the anticipated recovery of their amortized costs.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

5. INVESTMENTS (CONTINUED)

b) Mortgage Loans

The following table provides details of the Company's mortgage loans held-for-investment:

	December 31, 2019		December 31, 2018	
	Carrying value	% of Total	Carrying value	% of Total
Mortgage Loans held-for-investment:				
Commercial	\$ 432,748	100%	\$ 298,650	100%
Total Mortgage Loans held-for-investment	\$ 432,748	100%	\$ 298,650	100%

The primary credit quality indicator for commercial mortgage loans is the debt service coverage ratio which compares a property's net operating income to amounts needed to service the principal and interest due under the loan, (generally, the lower the debt service coverage ratio, the higher the risk of experiencing a credit loss) and the loan-to-value ratio which compares the unpaid principal balance of the loan to the estimated fair value of the underlying collateral (generally, the higher the loan-to-value ratio, the higher the risk of experiencing a credit loss). The debt service coverage ratio and loan-to-value ratio, as well as the values utilized in calculating these ratios, are updated annually, on a rolling basis.

The Company has a high quality mortgage loan portfolio with a weighted average debt service coverage ratio of 2.1x and a weighted average loan-to-value ratio of 57%. At December 31, 2019 and 2018, there were no credit losses or past due amounts associated with the commercial mortgage loans held by the Company.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019, 2018 AND 2017

5. INVESTMENTS (CONTINUED)

c) Other Investments

The following table provides a summary of the Company's other investments, together with additional information relating to the liquidity of each category:

	Fair value		Redemption frequency (if currently eligible)	Redemption notice period	
<u>At December 31, 2019</u>					
Long/short equity funds	\$	31,248	4%	Annually	60 days
Multi-strategy funds		136,542	18%	Quarterly, Semi-annually	60-90 days
Direct lending funds		277,395	36%	n/a	n/a
Private equity funds		80,412	10%	n/a	n/a
Real estate funds		130,112	17%	n/a	n/a
CLO-Equities		14,328	2%	n/a	n/a
Other privately held investments		36,934	5%	n/a	n/a
Overseas deposits		63,952	8%	n/a	n/a
Total other investments	\$	770,923	100%		
<u>At December 31, 2018</u>					
Long/short equity funds	\$	26,779	3%	Annually	60 days
Multi-strategy funds		167,819	22%	Quarterly, Semi-annually, Annually	45-95 days
Direct lending funds		274,478	35%	n/a	n/a
Private equity funds		64,566	8%	n/a	n/a
Real estate funds		84,202	11%	n/a	n/a
CLO-Equities		21,271	2%	n/a	n/a
Other privately held investments		44,518	6%	n/a	n/a
Overseas deposits		104,154	13%	n/a	n/a
Total other investments	\$	787,787	100%		

n/a – not applicable

The investment strategies for the above funds are as follows:

- *Long/short equity funds*: Seek to achieve attractive returns primarily by executing an equity trading strategy involving long and short investments in publicly-traded equity securities.
- *Multi-strategy funds*: Seek to achieve above-market returns by pursuing multiple investment strategies to diversify risks and reduce volatility. This category includes funds of hedge funds which invest in a large pool of hedge funds across a diversified range of hedge fund strategies.
- *Direct lending funds*: Seek to achieve attractive risk-adjusted returns, including current income generation, by investing in funds which provide financing directly to borrowers.
- *Private equity funds*: Seek to achieve attractive risk-adjusted returns by investing in private transactions over the course of several years.
- *Real estate funds*: Seek to achieve attractive risk-adjusted returns by making and managing investments in real estate and real estate securities and businesses.

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5. INVESTMENTS (CONTINUED)

Two common redemption restrictions which may impact the Company's ability to redeem hedge funds are gates and lockups. A gate is a suspension of redemptions which may be implemented by the general partner or investment manager of the fund in order to defer, in whole or in part, the redemption request in the event the aggregate amount of redemption requests exceeds a predetermined percentage of the fund's net assets which may otherwise hinder the general partner or investment manager's ability to liquidate holdings in an orderly fashion in order to generate the cash necessary to fund extraordinarily large redemption payouts. A lockup period is the initial amount of time an investor is contractually required to hold the security before having the ability to redeem. During 2019 and 2018, neither of these restrictions impacted the Company's redemption requests. At December 31, 2019, \$69 million (2018: \$27 million), representing 41% (2018: 14%) of total hedge funds, relate to holdings where the Company is still within the lockup period. The expiration of these lockup periods range from October 2020 to March 2022.

At December 31, 2019, the Company had \$170 million (2018: \$210 million) of unfunded commitments as a limited partner in direct lending funds. Once the full amount of committed capital has been called by the General Partner of each of these funds, the assets will not be fully returned until the completion of the fund's investment term. These funds have investment terms ranging from five to ten years and the General Partners of certain funds have the option to extend the term by up to three years.

At December 31, 2019, the Company had \$24 million (2018: \$84 million) of unfunded commitments as a limited partner in multi-strategy hedge funds. Once the full amount of committed capital has been called by the General Partner of each of these funds, the assets will not be fully returned until after the completion of the funds' investment term. These funds have investment terms ranging from two years to the dissolution of the underlying fund.

At December 31, 2019, the Company had \$82 million (2018: \$147 million) of unfunded commitments as a limited partner in funds which invest in real estate and real estate securities and businesses. These funds include an open-ended fund and funds with investment terms ranging from seven years to the dissolution of the underlying fund.

At December 31, 2019, the Company had \$261 million (2018: \$16 million) of unfunded commitments as a limited partner in private equity funds. The life of the funds is subject to the dissolution of the underlying funds. The Company expects the overall holding period to be over five years.

During 2015, the Company made a \$50 million commitment as a limited partner of a bank revolver opportunity fund. The fund has an investment term of seven years and the General Partners have the option to extend the term by up to two years. At December 31, 2019, this commitment remains unfunded. It is not anticipated that the full amount of this fund will be drawn.

Syndicate 2007 holds overseas deposits which include investments in private funds where the underlying investments are primarily U.S. government, non-U.S. government and corporate debt securities. The funds do not trade on an exchange and therefore are not included within available for sale investments.

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5. INVESTMENTS (CONTINUED)

d) Equity Method Investments

During 2016, the Company paid \$108 million including direct transaction costs to acquire 19% of the common equity of Harrington Reinsurance Holdings Limited ("Harrington"), the parent company of Harrington Re Ltd. ("Harrington Re"), an independent reinsurance company jointly sponsored by the Company and The Blackstone Group L.P. ("Blackstone"). Through long-term service agreements, the Company will serve as Harrington Re's reinsurance underwriting manager and Blackstone will serve as exclusive investment management service provider. As an investor, the Company expects to benefit from underwriting profit generated by Harrington Re and the income and capital appreciation Blackstone seeks to deliver through its investment management services. In addition, the Company has entered into an arrangement with Blackstone under which underwriting and investment related fees will be shared equally. Harrington is not a VIE that is required to be included in the Company's consolidated financial statements. The Company accounts for its ownership interest in Harrington under the equity method of accounting. The Company's proportionate share of the underlying equity in net assets resulted in a basis difference of \$5 million which represents initial transactions costs.

For the year ended December 31, 2017, the Company recorded an impairment charge of \$9 million, related to a U.S. based insurance company, which reduced the carrying value of the investment to \$nil. This charge was included in interest in income (loss) of equity method investments in the consolidated statement of operations.

e) Net Investment Income

Net investment income was derived from the following sources:

Year ended December 31,	2019	2018	2017
Fixed maturities	\$ 384,053	\$ 356,273	\$ 312,662
Other investments	60,038	48,959	76,858
Equity securities	10,434	10,077	14,919
Mortgage loans	14,712	13,566	10,780
Cash and cash equivalents	26,882	27,566	10,057
Short-term investments	7,053	9,365	2,718
Gross investment income	503,172	465,806	427,994
Investment expenses	(24,600)	(27,299)	(27,189)
Net investment income	\$ 478,572	\$ 438,507	\$ 400,805

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5. INVESTMENTS (CONTINUED)

f) Net Investment Gains (Losses)

The following table provides an analysis of net investment gains (losses):

Year ended December 31,	2019	2018	2017
Gross realized investment gains			
Fixed maturities and short-term investments	\$ 93,160	\$ 46,067	\$ 72,046
Equity securities	3,449	20,435	78,343
Gross realized investment gains	<u>96,609</u>	<u>66,502</u>	<u>150,389</u>
Gross realized investment losses			
Fixed maturities and short-term investments	(56,515)	(142,153)	(98,442)
Equity securities	(323)	(3,389)	(959)
Gross realized investment losses	<u>(56,838)</u>	<u>(145,542)</u>	<u>(99,401)</u>
Net OTTI charge recognized in net income	(6,984)	(9,733)	(14,493)
Change in fair value of investment derivatives ⁽¹⁾	(1,823)	5,445	(8,269)
Net unrealized gains (losses) on equity securities ⁽²⁾	60,269	(66,890)	—
Net investment gains (losses)	<u>\$ 91,233</u>	<u>\$ (150,218)</u>	<u>\$ 28,226</u>

(1) Refer to Note 7 'Derivative Instruments'

(2) Effective January 1, 2018, the Company adopted ASU No. 2016-01 which requires the change in fair value of equity securities to be recognized in net income.

The following table summarizes the OTTI charge recognized in net income by asset class:

Year ended December 31,	2019	2018	2017
Fixed maturities:			
Non-U.S. government	\$ 90	\$ 4,697	\$ 8,187
Corporate debt	6,894	4,995	6,306
Non-Agency CMBS	—	41	—
Total OTTI recognized in net income	<u>\$ 6,984</u>	<u>\$ 9,733</u>	<u>\$ 14,493</u>

Fixed Maturities

The credit loss component of an OTTI charge recognized in net income is calculated based on the difference between the amortized cost of the security and the net present value of its projected future cash flows. A summary of credit loss activity by asset class, the significant inputs and the methodology used to estimate credit losses are described below.

U.S. Government, U.S. Agency and U.S. Agency RMBS:

Unrealized losses on securities issued or backed, either explicitly or implicitly by the U.S. government are not analyzed for OTTI. The Company has concluded that the possibility of a credit loss on these securities is highly unlikely due to the explicit U.S. government guarantee related to certain securities (e.g. Government National Mortgage Association issuances) and the implicit guarantee related to other securities that has been validated by past actions (e.g. U.S. government bailout of Federal National Mortgage Association and Federal Home Loan Mortgage Corporation during the 2008 credit crisis). Although these securities are not analyzed for credit losses, they are evaluated for intention to sell and likely requirement to sell.

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5. INVESTMENTS (CONTINUED)

Non-U.S. Government:

Non-U.S. government securities are evaluated for credit losses primarily through qualitative assessments of the likelihood of credit losses using information such as duration, severity of unrealized losses, credit ratings and price volatility. At December 31, 2019, the Company's holdings of non-U.S. government securities, including \$37 million (2018: \$29 million) relating to the eurozone countries, were substantially all investment-grade securities. At December 31, 2019, the gross unrealized losses of \$2 million (2018: \$16 million) were mainly due to foreign exchange losses. At December 31, 2019, the Company does not anticipate any credit losses on its non-U.S. government fixed maturities. In 2019, the OTTI charge on non-U.S. government fixed maturities mainly related to unrealized foreign exchange losses on certain securities where the forecasted recovery of the amortized cost of these securities was uncertain.

Corporate Debt:

To estimate credit losses for corporate debt securities, the Company's projected cash flows are primarily driven by assumptions regarding the probability of default and the severity associated with those defaults. The Company's default and loss severity rates are based on credit rating, credit analysis, industry analyst reports and forecasts, Moody's historical default data and any other data relevant to the recoverability of the security. In 2019, the OTTI charge on corporate debt securities mainly related to loss severity, unrealized foreign exchange losses on certain securities where the forecasted recovery of the amortized cost of these securities was uncertain, and instances where the Company intended to sell securities before the forecasted recovery of the amortized cost of these securities.

CMBS:

The Company's investments in CMBS are diversified and primarily rated AA or better. At December 31, 2019, CMBS had a weighted average estimated subordination percentage of 29% (2018: 31%). Based on discounted cash flows at December 31, 2019, the current level of subordination is sufficient to cover the estimated loan losses on the underlying collateral of the CMBS.

Non-agency RMBS:

To estimate credit losses for non-agency RMBS, the Company's projected cash flows incorporated underlying data from widely accepted third-party data sources along with certain internal assumptions and judgments regarding the future performance of the security. These assumptions included default, delinquency, loss severity and prepayment rates. The assumptions used to calculate credit losses in 2019 have not changed significantly since December 31, 2018.

At December 31, 2019, the fair value of the Company's non-agency RMBS was \$85 million (2018: \$41 million), consisting primarily of \$54 million (2018: \$31 million) of Prime and \$11 million (2018: \$5 million) of Alt-A MBS. At December 31, 2019, the Company does not anticipate any credit losses on its non-agency RMBS.

ABS:

The Company's investments in ABS consist mainly of CLO debt tranching securities ("CLO Debt") purchased primarily as new issues during 2017 and 2018. Substantially all of these new issues had credit ratings of AA or better. The Company utilizes a scenario-based approach to review its CLO Debt portfolio based on the current asset market price. The Company also reviews subordination levels of these securities to determine their ability to absorb credit losses of underlying collateral. If losses are forecast to be below the subordination level for a tranche held by the Company, the security is determined not to be impaired. At December 31, 2019, the Company does not anticipate any credit losses on its CLO Debt.

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5. INVESTMENTS (CONTINUED)

g) Restricted Assets

In order to support the Company's obligations in regulatory jurisdictions where it operates as a non-admitted carrier, the Company provides collateral in the form of assets held in trust and, to a lesser extent, letters of credit (refer to Note 10(b) *'Debt and Financing Arrangements'*).

In addition, the Company operates in the Lloyd's market through its corporate members, AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited, which provide 70% and 30%, respectively of Syndicate 1686's capital support. AXIS Corporate Capital UK II Limited is the sole corporate member of Syndicate 2007. Lloyd's sets capital requirements for corporate members annually through the application of a capital model that is based on regulatory rules pursuant to Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking up and pursuit of business of Insurance and Reinsurance (Solvency II) ("Solvency II").

The capital provided to support underwriting, or Funds at Lloyd's ("FAL"), may be satisfied by cash, certain investments and letters of credit provided by approved banks (refer to Note 11 *'Commitments and Contingencies'* and Note 21 *'Statutory Financial Information'*).

At December 31, 2019 collateral held in trust for third-party agreements of \$1,856 million included \$365 million (2018: \$403 million) of fixed maturities and equity securities, and cash of \$16 million (2018: \$39 million) held on deposit to support the underwriting activities of Syndicate 2007, and also included \$169 million (2018: \$nil) of fixed maturities and equity securities, and cash of \$181 million (2018: \$154 million) held on deposit to support the underwriting activities of Syndicate 1686.

The Company's restricted investments and cash primarily consist of high-quality fixed maturity and short-term investment securities.

The table below provides the fair values of the Company's restricted investments and cash:

At December 31,	2019	2018
Collateral in Trust for inter-company agreements	\$ 1,580,689	\$ 2,121,522
Collateral for secured letter of credit facility	473,187	470,051
Funds at Lloyd's	1,314,345	1,307,945
Collateral in Trust for third-party agreements	1,856,327	1,510,416
Securities on deposit with regulatory authorities	76,229	64,360
Total restricted investments	\$ 5,300,777	\$ 5,474,294

h) Reverse Repurchase Agreements

At December 31, 2019, the Company held no (2018: \$189 million) reverse repurchase agreements. These loans are fully collateralized, are generally outstanding for a short period of time and are presented on a gross basis as part of cash and cash equivalents in the Company's consolidated balance sheets. The required collateral for these loans is either cash or U.S. Treasuries at a minimum rate of 102% of the loan principal. At maturity, the Company receives principal and interest income. The Company monitors the estimated fair value of the securities loaned and borrowed on a daily basis with additional collateral obtained as necessary throughout the duration of the transaction.

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6. FAIR VALUE MEASUREMENTS

Fair Value Hierarchy

Fair value is defined as the price to sell an asset or transfer a liability (i.e. the "exit price") in an orderly transaction between market participants. U.S. GAAP prescribes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to quoted prices in active markets and the lowest priority to unobservable data. The level in the hierarchy within which a given fair value measurement falls is determined based on the lowest level input that is significant to the measurement. The hierarchy is broken down into three levels as follows:

- Level 1 - Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access.
- Level 2 - Valuations based on quoted prices in active markets for similar assets or liabilities, quoted prices for identical assets or liabilities in inactive markets, or for which significant inputs are observable (e.g. interest rates, yield curves, prepayment speeds, default rates, loss severities, etc.) or can be corroborated by observable market data.
- Level 3 - Valuations based on inputs that are unobservable and significant to the overall fair value measurement. The unobservable inputs reflect the Company's own judgments about assumptions that market participants might use.

The availability of observable inputs can vary from financial instrument to financial instrument and is affected by a wide variety of factors including, for example, the type of financial instrument, whether the financial instrument is new and not yet established in the marketplace, and other characteristics particular to the transaction. To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires significantly more judgment.

Accordingly, the degree of judgment exercised by management in determining fair value is greatest for financial instruments categorized as Level 3. In periods of market dislocation, the observability of prices and inputs may be reduced for many financial instruments. This may lead the Company to change the selection of valuation technique (from market to cash flow approach) or may cause the Company to use multiple valuation techniques to estimate the fair value of a financial instrument. This circumstance could cause an instrument to be reclassified between levels within the fair value hierarchy.

Valuation Techniques

The valuation techniques, including significant inputs and assumptions generally used to determine the fair values of the Company's financial instruments as well as the classification of the fair values of its financial instruments in the fair value hierarchy are described in detail below.

Fixed Maturities

At each valuation date, the Company uses the market approach valuation technique to estimate the fair value of its fixed maturities portfolio, where possible. The market approach includes, but is not limited to, prices obtained from third-party pricing services for identical or comparable securities and the use of "pricing matrix models" using observable market inputs such as yield curves, credit risks and spreads, measures of volatility, and prepayment speeds. Pricing from third-party pricing services is sourced from multiple vendors, where available, and the Company maintains a vendor hierarchy by asset type based on historical pricing experience and vendor expertise. Where prices are unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers who are active in the corresponding markets. The valuation techniques including significant inputs and assumptions generally used to determine the fair values of the Company's fixed maturities by asset class as well as the classifications of the fair values of these securities in the fair value hierarchy are described in detail below.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

U.S. Government and Agency

U.S. government and agency securities consist primarily of bonds issued by the U.S. Treasury and mortgage pass-through agencies such as the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association. As the fair values of U.S. Treasury securities are based on unadjusted quoted market prices in active markets, the fair values of these securities are classified as Level 1. The fair values of U.S. government agency securities are determined using the spread above the risk-free yield curve. As the yields for the risk-free yield curve and the spreads are observable market inputs, the fair values of U.S. government agency securities are classified as Level 2.

Non-U.S. Government

Non-U.S. government securities include bonds issued by non-U.S. governments and their agencies along with supranational organizations (collectively also known as sovereign debt securities). The fair values of these securities are based on prices obtained from international indices or valuation models that include inputs such as interest rate yield curves, cross-currency basis index spreads and country credit spreads for structures similar to the sovereign bond in terms of issuer, maturity and seniority. As the significant inputs used to price these securities are observable market inputs, the fair values of non-U.S. government securities are classified as Level 2.

Corporate Debt

Corporate debt securities consist primarily of investment-grade debt of a wide variety of corporate issuers and industries. The fair values of these securities are generally determined using the spread above the risk-free yield curve. These spreads are generally obtained from the new issue market, secondary trading and broker-dealer quotes. As the yields for the risk-free yield curve and the spreads are observable market inputs, the fair values of corporate debt securities are generally classified as Level 2. Where pricing is unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers to estimate fair value. This is generally the case when there is a low volume of trading activity and current transactions are not orderly. In this event, the fair values of these securities are classified as Level 3.

Agency RMBS

Agency RMBS consist of bonds issued by the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association. The fair values of these securities are priced using a mortgage pool specific model which uses daily inputs from the active to be announced market and the spread associated with each mortgage pool based on vintage. As the significant inputs used to price these securities are observable market inputs, the fair values of Agency RMBS are classified as Level 2.

CMBS

CMBS mainly include investment-grade bonds originated by non-agencies. The fair values of these securities are determined using a pricing model which uses dealer quotes and other available trade information along with security level characteristics to determine deal specific spreads. As the significant inputs used to price these securities are observable market inputs, the fair values of CMBS are generally classified as Level 2. Where pricing is unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers to estimate fair value. This is generally the case when there is a low volume of trading activity and current transactions are not orderly. In this event, the fair values of these securities are classified as Level 3.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

Non-agency RMBS

Non-agency RMBS mainly include investment-grade bonds originated by non-agencies. The fair values of these securities are determined using an option adjusted spread model or other relevant models, which use inputs including available trade information or broker quotes, prepayment and default projections based on historical statistics of the underlying collateral and current market data. As the significant inputs used to price these securities are observable market inputs, the fair values of non-agency RMBS are generally classified as Level 2. Where pricing is unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers to estimate fair value. This is generally the case when there is a low volume of trading activity and current transactions are not orderly. In this event, the fair values of these securities are classified as Level 3.

ABS

ABS mainly include investment-grade bonds backed by pools of loans with a variety of underlying collateral, including auto loans, student loans, credit card receivables and collateralized loan obligations ("CLOs") originated by a variety of financial institutions. The fair values of these securities are determined using a model which uses prepayment speeds and spreads sourced primarily from the new issue market. As the significant inputs used to price these securities are observable market inputs, the fair values of ABS are generally classified as Level 2. Where pricing is unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers to estimate fair value. This is generally the case when there is a low volume of trading activity and current transactions are not orderly. In this event, the fair values of these securities are classified as Level 3.

Municipals

Municipals comprise revenue and general obligation bonds issued by U.S. domiciled state and municipal entities. The fair values of these securities are determined using spreads obtained from the new issue market, trade prices and broker-dealers quotes. As the significant inputs used to price these securities are observable market inputs, the fair values of municipals are classified as Level 2.

Equity Securities

Equity securities include common stocks, exchange-traded funds and bond mutual funds. As the fair values of common stocks and exchange-traded funds are based on unadjusted quoted market prices in active markets, the fair values of these securities are classified as Level 1. As bond mutual funds have daily liquidity, the fair values of these securities are classified as Level 2.

Other Investments

The fair value of an indirect investment in CLO-Equities is estimated using an income approach valuation technique, specifically an externally developed discounted cash flow model due to the lack of observable and relevant trades in secondary markets. As the significant inputs used to price this security are unobservable, the fair value of the indirect investment in CLO-Equities is classified as Level 3.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

Other privately held investments include convertible preferred shares, common shares, convertible notes and notes payable. These securities are initially valued at cost, which approximates fair value. In subsequent measurement periods, the fair values of these investments are generally determined using capital statements obtained from each investee company. In order to assess the reasonableness of the information received from each investee company, the Company maintains an understanding of current market conditions, historical results, and emerging trends that may impact the results of operations, financial condition or liquidity of investee companies. In addition, the Company engages in regular communication with management at the investee companies. In 2018, the fair values of some of these investments were determined using an internally developed discounted cash flow model. As the significant inputs used to price these securities are unobservable, the fair values of other privately held investments are classified as Level 3.

Overseas deposits include investments in private funds held by Syndicate 2007 where the underlying investments are primarily U.S. government, non-U.S. government and corporate debt securities. The funds do not trade on an exchange, therefore are not included in available for sale investments. As the significant inputs used to price the underlying investments are observable market inputs, the fair values of overseas deposits are classified as Level 2.

Short-term Investments

Short-term investments primarily comprise highly liquid securities with maturities greater than three months but less than one year from the date of purchase. These securities are typically not actively traded due to their approaching maturity, therefore their amortized cost approximates fair value. The fair values of short-term investments are classified as Level 2.

Derivative Instruments

Derivative instruments include foreign exchange forward contracts and exchange traded interest rate swaps that are customized to the Company's economic hedging strategies and trade in the over-the-counter derivative market. The fair values of these derivatives are determined using a market approach valuation technique based on significant observable market inputs from third-party pricing vendors, non-binding broker-dealer quotes and/or recent trading activity. As the significant inputs used to price these securities are observable market inputs, the fair values of these derivatives are classified as Level 2.

Other underwriting-related derivatives include insurance and reinsurance contracts that are accounted for as derivatives. These derivative contracts are initially valued at cost which approximates fair value. In subsequent measurement periods, the fair values of these derivatives are determined using internally developed discounted cash flow models. As the significant inputs used to price these derivatives are unobservable, the fair values of these contracts are classified as Level 3.

Insurance-linked Securities

Insurance-linked securities comprise an investment in a catastrophe bond. As pricing is unavailable from pricing services, the Company obtains non-binding quotes from broker-dealers to estimate the fair value of this security. Pricing is generally unavailable when there is a low volume of trading activity and current transactions are not orderly therefore, the fair value of this security is classified as Level 3.

Cash Settled Awards

Cash settled awards comprise restricted stock units that form part of the Company's compensation program. Although the fair values of these awards are determined using observable quoted market prices in active markets, the restricted stock units are not actively traded. As the significant inputs used to price these securities are observable market inputs, the fair values of these liabilities are classified as Level 2.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

The tables below present the financial instruments measured at fair value on a recurring basis for the periods indicated:

	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Fair value based on NAV practical expedient	Total fair value
At December 31, 2019					
Assets					
Fixed maturities					
U.S. government and agency	\$ 2,053,622	\$ 59,259	\$ —	\$ —	\$ 2,112,881
Non-U.S. government	—	576,592	—	—	576,592
Corporate debt	—	4,927,957	2,297	—	4,930,254
Agency RMBS	—	1,592,584	—	—	1,592,584
CMBS	—	1,359,817	5,235	—	1,365,052
Non-Agency RMBS	—	84,922	—	—	84,922
ABS	—	1,598,204	489	—	1,598,693
Municipals	—	207,227	—	—	207,227
	<u>2,053,622</u>	<u>10,406,562</u>	<u>8,021</u>	<u>—</u>	<u>12,468,205</u>
Equity securities					
Common stocks	193	—	—	—	193
Exchange-traded funds	297,325	—	—	—	297,325
Bond mutual funds	—	176,689	—	—	176,689
	<u>297,518</u>	<u>176,689</u>	<u>—</u>	<u>—</u>	<u>474,207</u>
Other investments					
Hedge funds ⁽¹⁾	—	—	—	167,790	167,790
Direct lending funds	—	—	—	277,395	277,395
Private equity funds	—	—	—	80,412	80,412
Real estate funds	—	—	—	130,112	130,112
Other privately held investments	—	—	36,934	—	36,934
CLO-Equities	—	—	14,328	—	14,328
Overseas deposits	—	63,952	—	—	63,952
	<u>—</u>	<u>63,952</u>	<u>51,262</u>	<u>655,709</u>	<u>770,923</u>
Short-term investments	—	38,471	—	—	38,471
Other assets					
Derivative instruments (refer to Note 7)	—	3,174	—	—	3,174
Total Assets	<u>\$ 2,351,140</u>	<u>\$ 10,688,848</u>	<u>\$ 59,283</u>	<u>\$ 655,709</u>	<u>\$ 13,754,980</u>
Liabilities					
Derivative instruments (refer to Note 7)	\$ —	\$ 3,965	\$ 9,672	\$ —	\$ 13,637
Cash settled awards (refer to Note 16)	—	21,731	—	—	21,731
Total Liabilities	<u>\$ —</u>	<u>\$ 25,696</u>	<u>\$ 9,672</u>	<u>\$ —</u>	<u>\$ 35,368</u>

(1) Includes Long/short equity and Multi-strategy funds.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Fair value based on NAV practical expedient	Total fair value
At December 31, 2018					
Assets					
Fixed maturities					
U.S. government and agency	\$ 1,480,466	\$ 35,231	\$ —	\$ —	\$ 1,515,697
Non-U.S. government	—	493,016	—	—	493,016
Corporate debt	—	4,827,909	49,012	—	4,876,921
Agency RMBS	—	1,643,308	—	—	1,643,308
CMBS	—	1,073,396	19,134	—	1,092,530
Non-Agency RMBS	—	40,687	—	—	40,687
ABS	—	1,619,070	18,533	—	1,637,603
Municipals	—	135,585	—	—	135,585
	<u>1,480,466</u>	<u>9,868,202</u>	<u>86,679</u>	<u>—</u>	<u>11,435,347</u>
Equity securities					
Common stocks	527	—	—	—	527
Exchange-traded funds	236,839	—	—	—	236,839
Bond mutual funds	—	144,267	—	—	144,267
	<u>237,366</u>	<u>144,267</u>	<u>—</u>	<u>—</u>	<u>381,633</u>
Other investments					
Hedge funds ⁽¹⁾	—	—	—	194,598	194,598
Direct lending funds	—	—	—	274,478	274,478
Private equity funds	—	—	—	64,566	64,566
Real estate funds	—	—	—	84,202	84,202
Other privately held investments	—	—	44,518	—	44,518
CLO-Equities	—	—	21,271	—	21,271
Overseas deposits	—	104,154	—	—	104,154
	<u>—</u>	<u>104,154</u>	<u>65,789</u>	<u>617,844</u>	<u>787,787</u>
Short-term investments	—	144,040	—	—	144,040
Other assets					
Derivative instruments (refer to Note 7)	—	8,237	—	—	8,237
Total Assets	<u>\$ 1,717,832</u>	<u>\$ 10,268,900</u>	<u>\$ 152,468</u>	<u>\$ 617,844</u>	<u>\$ 12,757,044</u>
Liabilities					
Derivative instruments (refer to Note 7)	\$ —	\$ 4,223	\$ 10,299	\$ —	\$ 14,522
Cash settled awards (refer to Note 16)	—	20,648	—	—	20,648
Total Liabilities	<u>\$ —</u>	<u>\$ 24,871</u>	<u>\$ 10,299</u>	<u>\$ —</u>	<u>\$ 35,170</u>

(1) Includes Long/short equity and Multi-strategy funds.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

The following table quantifies the significant unobservable inputs used in estimating fair values at December 31, 2019 of investments classified as Level 3 in the fair value hierarchy:

	Fair value	Valuation technique	Unobservable input	Range	Weighted average
Other investments - CLO-Equities	\$ 14,328	Discounted cash flow	Default rates	3.5%	3.5%
			Loss severity rate	35.0%	35.0%
			Collateral spreads	3.0%	3.0%
			Estimated maturity dates	7 years	7 years
Derivatives - Other underwriting-related derivatives	\$ (9,672)	Discounted cash flow	Discount rate	1.8%	1.8%

Note: Fixed maturities and insurance-linked securities that are classified as Level 3 of \$8 million are excluded from the above table as these securities are priced using broker-dealer quotes. In addition, other privately held investments of \$37 million that are classified as Level 3 are excluded from the above table as these investments are priced using capital statements received from investee companies.

Other Investments - CLO-Equities

The CLO-Equities market continues to be relatively inactive with only a small number of transactions being observed, particularly related to transactions involving CLO-Equities held by the Company. Accordingly, the fair value of the Company's indirect investment in CLO-Equities is determined using a discounted cash flow model prepared by an external investment manager.

The default and loss severity rates are the most judgmental unobservable market inputs to the discounted cash flow model to which the valuation of the Company's indirect investment in CLO-Equities is most sensitive. A significant increase (decrease) in either of these significant inputs in isolation would result in a lower (higher) fair value estimate for the investment in CLO-Equities and, in general, a change in default rate assumptions would be accompanied by a directionally similar change in loss severity rate assumptions. Collateral spreads and estimated maturity dates are less judgmental inputs as they are based on the historical average of actual spreads and the weighted average life of the current underlying portfolios, respectively. A significant increase (decrease) in either of these significant inputs in isolation would result in a higher (lower) fair value estimate for the investment in CLO-Equities. In general, these inputs have no significant interrelationship with each other or with default and loss severity rates.

On a quarterly basis, the Company's valuation process for its indirect investment in CLO-Equities includes a review of the underlying cash flows and key assumptions used in the discounted cash flow model. The above significant unobservable inputs are reviewed and updated based on information obtained from secondary markets, including information received from the managers of the Company's CLO-Equities investment. In order to assess the reasonableness of the inputs the Company uses in the discounted cash flow model, the Company maintains an understanding of current market conditions, historical results, and emerging trends that may impact future cash flows. In addition, the assumptions the Company uses in its models are updated through regular communication with industry participants and ongoing monitoring of the deals in which the Company participates.

Derivatives - Other Underwriting-related Derivatives

Other underwriting-related derivatives are initially valued at cost which approximates fair value. In subsequent measurement periods, the fair values of these derivatives are determined using internally developed discounted cash flow models which use appropriate discount rates. The selection of an appropriate discount rate is judgmental and is the most significant unobservable input used in the valuation of these derivatives. A significant increase (decrease) in this input in isolation could result in a significantly lower (higher) fair value measurement for the derivative contracts. In order to assess the

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

reasonableness of the inputs the Company uses in the discounted cash flow model, the Company maintains an understanding of current market conditions, historical results, as well as contract specific information that may impact future cash flows.

The following table presents changes in Level 3 for financial instruments measured at fair value on a recurring basis:

	Opening balance	Transfers into Level 3	Transfers out of Level 3	Included in net income ⁽¹⁾	Included in OCI ⁽²⁾	Purchases	Sales	Settlements/distributions	Closing balance	Change in unrealized gains/losses ⁽³⁾
Year ended December 31, 2019										
Fixed maturities										
Corporate debt	\$ 49,012	\$ —	\$ —	\$ 4,790	\$ (4,168)	\$ —	\$ (6,068)	\$ (41,269)	\$ 2,297	\$ —
CMBS	19,134	—	(7,077)	—	142	—	—	(6,964)	5,235	—
ABS	18,533	—	(18,230)	—	186	—	—	—	489	—
	<u>86,679</u>	<u>—</u>	<u>(25,307)</u>	<u>4,790</u>	<u>(3,840)</u>	<u>—</u>	<u>(6,068)</u>	<u>(48,233)</u>	<u>8,021</u>	<u>—</u>
Other investments										
Other privately held investments	44,518	—	—	18,092	—	22,500	(48,176)	—	36,934	5,150
CLO-Equities	21,271	—	—	(199)	—	—	—	(6,744)	14,328	(199)
	<u>65,789</u>	<u>—</u>	<u>—</u>	<u>17,893</u>	<u>—</u>	<u>22,500</u>	<u>(48,176)</u>	<u>(6,744)</u>	<u>51,262</u>	<u>4,951</u>
Other assets										
Insurance-linked securities	—	—	—	—	—	—	—	—	—	—
	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Total assets	<u>\$152,468</u>	<u>\$ —</u>	<u>\$ (25,307)</u>	<u>\$ 22,683</u>	<u>\$ (3,840)</u>	<u>\$ 22,500</u>	<u>\$ (54,244)</u>	<u>\$ (54,977)</u>	<u>\$ 59,283</u>	<u>\$ 4,951</u>
Other liabilities										
Derivative instruments	10,299	—	—	(627)	—	—	—	—	9,672	(627)
Total liabilities	<u>\$ 10,299</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (627)</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 9,672</u>	<u>\$ (627)</u>
Year ended December 31, 2018										
Fixed maturities										
Corporate debt	\$ 52,897	\$ 2,935	\$ (4,279)	\$ (591)	\$ 6,343	\$ 10,267	\$ (7,446)	\$ (11,114)	\$ 49,012	\$ —
CMBS	—	5,096	—	—	(145)	17,200	—	(3,017)	19,134	—
ABS	—	1,979	—	—	(446)	17,000	—	—	18,533	—
	<u>52,897</u>	<u>10,010</u>	<u>(4,279)</u>	<u>(591)</u>	<u>5,752</u>	<u>44,467</u>	<u>(7,446)</u>	<u>(14,131)</u>	<u>86,679</u>	<u>—</u>
Other investments										
Other privately held investments	46,430	—	—	(913)	—	3,110	(4,109)	—	44,518	(913)
CLO-Equities	31,413	—	—	6,627	—	—	—	(16,769)	21,271	6,627
	<u>77,843</u>	<u>—</u>	<u>—</u>	<u>5,714</u>	<u>—</u>	<u>3,110</u>	<u>(4,109)</u>	<u>(16,769)</u>	<u>65,789</u>	<u>5,714</u>
Other assets										
Insurance-linked securities	25,090	—	—	(90)	—	—	—	(25,000)	—	—
	<u>25,090</u>	<u>—</u>	<u>—</u>	<u>(90)</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>(25,000)</u>	<u>—</u>	<u>—</u>
Total assets	<u>\$155,830</u>	<u>\$ 10,010</u>	<u>\$ (4,279)</u>	<u>\$ 5,033</u>	<u>\$ 5,752</u>	<u>\$ 47,577</u>	<u>\$ (11,555)</u>	<u>\$ (55,900)</u>	<u>\$152,468</u>	<u>\$ 5,714</u>
Other liabilities										
Derivative instruments	11,510	—	—	(1,211)	—	—	—	—	10,299	(1,211)
Total liabilities	<u>\$ 11,510</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (1,211)</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 10,299</u>	<u>\$ (1,211)</u>

(1) Realized gains (losses) on fixed maturities, and realized and unrealized gains (losses) on other assets and other liabilities included in net income are included in net investment gains (losses). Realized and unrealized gains (losses) on other investments included in net income are included in net investment income.

(2) Unrealized gains (losses) on fixed maturities are included in other comprehensive income ("OCI").

(3) Change in unrealized gains (losses) relating to assets held at the reporting date.

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6. FAIR VALUE MEASUREMENTS (CONTINUED)

Transfers into Level 3 from Level 2

There were no transfers into Level 3 from Level 2 during 2019. The transfers into Level 3 from Level 2 made during 2018 were primarily due to the lack of observable market inputs and multiple quotes from pricing vendors and broker-dealers for certain fixed maturities.

Transfers out of Level 3 into Level 2

The transfers out of Level 3 into Level 2 made during 2019 and 2018 were primarily due to the availability of observable market inputs and multiple quotes from pricing vendors for certain fixed maturities.

Measuring the Fair Value of Other Investments Using Net Asset Valuations

The fair values of hedge funds, direct lending funds, private equity funds and real estate funds are estimated using net asset valuations ("NAVs") as advised by external fund managers or third-party administrators. For these funds, NAVs are based on the manager's or administrator's valuation of the underlying holdings in accordance with the fund's governing documents and in accordance with U.S. GAAP.

If there is a reporting lag between the current period end and reporting date of the latest available fund valuation for any hedge fund, the Company estimates fair values by starting with the most recent fund valuation and adjusting for return estimates as well as any subscriptions, redemptions and distributions that took place during the current period. Return estimates are obtained from the relevant fund managers therefore the Company does not typically have a reporting lag in fair value measurements of these funds. Historically, the Company's valuation estimates incorporating these return estimates have not significantly diverged from the subsequently received NAVs.

For direct lending funds, private equity funds, real estate funds and two of the Company's hedge funds, valuation statements are typically released on a reporting lag therefore, the Company estimates the fair value of these funds by starting with the most recent fund valuations and adjusting for capital calls, redemptions, drawdowns and distributions. Return estimates are not available from the relevant fund managers for these funds therefore the Company typically has a reporting lag in its fair value measurements of these funds. In 2019, funds reported on a lag represented 68% (2018: 61%) of the Company's total other investments balance.

The Company often does not have access to financial information relating to the underlying securities held within the funds therefore management is unable to corroborate the fair values placed on the securities underlying the asset valuations provided by fund managers or fund administrators. In order to assess the reasonableness of the NAVs, the Company performs a number of monitoring procedures on a quarterly basis, to assess the quality of the information provided by fund managers and fund administrators. These procedures include, but are not limited to, regular review and discussion of each fund's performance with its manager, regular evaluation of fund performance against applicable benchmarks and the backtesting of the Company's fair value estimates against subsequently received NAVs. Backtesting involves comparing the Company's previously reported fair values for each fund against NAVs per audited financial statements (for year-end values) and final NAVs from fund managers and fund administrators (for interim values).

The fair values of hedge funds, direct lending funds, private equity funds and real estate funds are measured using the NAV practical expedient, therefore the fair values of these funds have not been categorized within the fair value hierarchy.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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6. FAIR VALUE MEASUREMENTS (CONTINUED)

Financial Instruments Disclosed, But Not Carried, at Fair Value

The fair value of financial instruments accounting guidance also applies to financial instruments disclosed, but not carried, at fair value, except for certain financial instruments, including insurance contracts.

At December 31, 2019, the carrying values of cash and cash equivalents including restricted amounts, accrued investment income, receivable for investments sold, certain other assets, payable for investments purchased and certain other liabilities approximated their fair values due to their short maturities. As these financial instruments are not actively traded, their fair values are classified as Level 2.

At December 31, 2019, the carrying value of mortgage loans held-for-investment approximated their fair value. The fair values of mortgage loans are primarily determined by estimating expected future cash flows and discounting them using current interest rates for similar mortgage loans with similar credit risk or are determined from pricing for similar loans. As mortgage loans are not actively traded, their fair values are classified as Level 3.

At December 31, 2019, the Company's debt was recorded at amortized cost with a carrying value of \$1,808 million (2018: \$1,342 million) and a fair value of \$1,896 million (2018: \$1,334 million). The fair value of the Company's debt is based on prices obtained from a third-party pricing service and is determined using the spread above the risk-free yield curve. These spreads are generally obtained from the new issue market, secondary trading and broker-dealer quotes. As the yields for the risk-free yield curve and the spreads are observable market inputs, the fair value of the Company's debt is classified as Level 2.

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7. DERIVATIVE INSTRUMENTS

The following table provides the balance sheet classifications of derivatives recorded at fair value:

	At December 31, 2019			At December 31, 2018		
	Derivative notional amount	Asset derivative fair value ⁽¹⁾	Liability derivative fair value ⁽¹⁾	Derivative notional amount	Asset derivative fair value ⁽¹⁾	Liability derivative fair value ⁽¹⁾
<i>Relating to investment portfolio:</i>						
Foreign exchange forward contracts	\$ 68,998	\$ —	\$ 1,405	\$ 79,336	\$ 262	\$ 531
Interest rate swaps	—	—	—	150,000	—	1,116
<i>Relating to underwriting portfolio:</i>						
Foreign exchange forward contracts	1,038,630	3,174	2,560	737,419	7,975	2,576
Other underwriting-related contracts	85,000	—	9,672	85,000	—	10,299
Total derivatives		<u>\$ 3,174</u>	<u>\$ 13,637</u>		<u>\$ 8,237</u>	<u>\$ 14,522</u>

(1) Asset and liability derivatives are classified within other assets and other liabilities in the consolidated balance sheets.

The notional amounts of derivative contracts represent the basis on which amounts paid or received are calculated and are presented in the above table to quantify the volume of the Company's derivative activities. Notional amounts are not reflective of credit risk.

None of the Company's derivative instruments are designated as hedges under current accounting guidance.

Offsetting Assets and Liabilities

The Company's derivative instruments are generally traded under International Swaps and Derivatives Association master netting agreements which establish terms that apply to all transactions. In the event of a bankruptcy or other stipulated event, master netting agreements provide that individual positions be replaced with a new amount, usually referred to as the termination amount, determined by taking into account market prices and converting into a single currency. Effectively, this contractual close-out netting reduces credit exposure from gross to net exposure.

The following table provides a reconciliation of gross derivative assets and liabilities to the net amounts presented in the consolidated balance sheets, with the difference being attributable to the impact of master netting agreements:

	December 31, 2019			December 31, 2018		
	Gross amounts	Gross amounts offset	Net amounts ⁽¹⁾	Gross amounts	Gross amounts offset	Net amounts ⁽¹⁾
Derivative assets	\$ 7,673	\$ (4,499)	\$ 3,174	\$ 11,967	\$ (3,730)	\$ 8,237
Derivative liabilities	\$ 18,136	\$ (4,499)	\$ 13,637	\$ 18,252	\$ (3,730)	\$ 14,522

(1) Net asset and liability derivatives are classified within other assets and other liabilities in the consolidated balance sheets.

Refer to Note 5 'Investments' for information on reverse repurchase agreements.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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7. DERIVATIVE INSTRUMENTS (CONTINUED)

a) Relating to Investment Portfolio

Foreign Currency Risk

The Company's investment portfolio is exposed to foreign currency risk therefore the fair values of its investments are partially influenced by changes in foreign exchange rates. The Company may enter into foreign exchange forward contracts to manage the effect of this foreign currency risk. These foreign currency hedging activities are not designated as specific hedges for financial reporting purposes.

Interest Rate Risk

The Company's investment portfolio includes a large percentage of fixed maturities which exposes it to significant interest rate risk. As part of overall management of this risk, the Company may use interest rate swaps.

b) Relating to Underwriting Portfolio

Foreign Currency Risk

The Company's insurance and reinsurance subsidiaries and branches operate in various countries. Some of its business is written in currencies other than the U.S. dollar, therefore the underwriting portfolio is exposed to significant foreign currency risk. The Company manages foreign currency risk by seeking to match its foreign-denominated net liabilities under insurance and reinsurance contracts with cash and investments that are denominated in the same currencies. The Company uses derivative instruments, specifically, forward contracts to economically hedge foreign currency exposures.

Weather Risk

During 2013, the Company began to write derivative-based risk management products designed to address weather risks with the objective of generating profits on a portfolio basis. The majority of this business consisted of receiving a payment at contract inception in exchange for bearing the risk of variations in a quantifiable weather-related phenomenon, such as temperature. Where a client wished to minimize the upfront payment, these transactions were structured as swaps or collars. In general, the Company's portfolio of such derivative contracts was of short duration, with contracts being predominantly seasonal in nature. In order to economically hedge a portion of this portfolio, the Company also purchased weather derivatives. Effective July 1, 2017, the Company ceased writing derivative-based risk management products which address weather risks.

Other Underwriting-related Risks

The Company enters into insurance and reinsurance contracts that are accounted for as derivatives. These insurance or reinsurance contracts provide indemnification to an insured or cedant as a result of a change in a variable as opposed to an identifiable insurable event. The Company considers these contracts to be part of its underwriting operations.

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7. DERIVATIVE INSTRUMENTS (CONTINUED)

The following table provides the total unrealized and realized gains (losses) recognized in net income for derivatives not designated as hedges:

		Amount of gain (loss) recognized in net income		
		2019	2018	2017
<i>Relating to investment portfolio:</i>				
Foreign exchange forward contracts	Net investment gains (losses)	\$ 1,854	\$ 3,446	\$ (6,935)
Interest rate swaps	Net investment gains (losses)	(3,677)	1,999	(1,334)
<i>Relating to underwriting portfolio:</i>				
Foreign exchange forward contracts	Foreign exchange gains (losses)	(10,678)	(3,509)	25,383
Weather-related contracts	Other insurance related income (losses)	—	—	(9,629)
Other underwriting-related contracts	Other insurance related income	1,789	2,384	1,476
Total		<u>\$ (10,712)</u>	<u>\$ 4,320</u>	<u>\$ 8,961</u>

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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8. RESERVE FOR LOSSES AND LOSS EXPENSES

Reserving Methodology

Sources of Information

The Company's loss reserving process begins with the collection and analysis of paid and incurred claim data for each of the Company's segments. The segmental data is disaggregated by reserve class and further disaggregated by underwriting year and accident year. Underwriting year or accident year information is used to analyze the Company's business and to estimate reserves for losses and loss expenses. Reserve classes are selected to ensure that the underlying contracts have homogeneous loss development characteristics, while remaining large enough to make the estimation of trends credible. The Company's reserve classes are reviewed on a regular basis and adjusted over time as the Company's business evolves. The paid and incurred claim data, in addition to industry benchmarks, serves as a key input to many of the methods employed by the Company's actuaries. The relative weights assigned to the Company's historical loss data versus industry data vary based on a number of factors including the Company's historical track record and the development profile for the reserve class being evaluated (refer to 'Claim Tail Analysis' and 'Net Incurred and Paid Claims Development Tables By Accident Year' below for further details).

The following tables map the Company's lines of business to reserve classes and the expected claim tails:

Insurance segment	Reserve class and tail					
	Property and other	Marine	Aviation	Credit and political risk	Professional lines	Liability
	Short	Short	Short/Medium	Medium	Medium	Long
Reported lines of business						
Property	X					
Marine		X				
Terrorism	X					
Aviation			X			
Credit and political risk				X		
Professional lines					X	
Liability						X
Accident and health	X					
Discontinued lines - Novae	X				X	X

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance segment	Reserve class and tail				
	Property and other	Credit and surety	Professional lines	Motor	Liability
	Short	Medium	Medium	Long	Long
Reported lines of business					
Catastrophe	X				
Property	X				
Credit and surety		X			
Professional lines			X		
Motor				X	
Liability					X
Engineering	X				
Agriculture	X				
Marine and other	X				
Accident and health	X				
Discontinued lines - Novae	X			X	X

Actuarial Analysis

Multiple actuarial methods are available to estimate ultimate losses. Each method has its own assumptions and its own advantages and disadvantages, with no single estimation method being better than the others in all situations and no one set of assumption variables being meaningful for all reserve classes. The relative strengths and weaknesses of the particular estimation methods when applied to a particular group of claims can also change over time.

The following is a brief description of the reserve estimation methods commonly employed by the Company's actuaries including a discussion of their particular strengths and weaknesses:

- *Expected Loss Ratio Method ("ELR Method")*: This method estimates ultimate losses for an accident year or underwriting year by applying an expected loss ratio to the earned or written premium for that year. Generally, expected loss ratios are based on one or more of (a) an analysis of historical loss experience to date, (b) pricing information and (c) industry data, adjusted as appropriate, to reflect changes in rates, loss and exposure trends, and terms and conditions. This method is insensitive to actual incurred losses for the accident year or underwriting year in question and is, therefore, often useful in the early stages of development when very few losses have been incurred. Conversely, the lack of sensitivity to incurred/paid losses for the accident year or underwriting year in question means that this method is usually inappropriate in later stages of an accident year or underwriting year's development.
- *Loss Development Method (also referred to as the "Chain Ladder Method" or "Link Ratio Method")*: This method assumes that the losses incurred/paid for each accident year or underwriting year at a particular development stage follow a relatively similar pattern. It assumes that on average, every accident year or underwriting year will display the same percentage of ultimate losses incurred/paid at the same point in time after the inception of that year. The percentages incurred/paid are established for each development stage (e.g. 12 months, 24 months, etc.) after examining averages from historical loss development data and/or external industry benchmark information. Ultimate losses are then estimated by multiplying the actual incurred/paid losses by the reciprocal of the established incurred/paid percentage. The strengths of this method are that it reacts to loss emergence/payments and that it makes full use of historical claim emergence/payment experience. However, this method has weaknesses when the underlying assumption of stable loss development/payment patterns is not valid. This could be the consequence of changes in business mix, claim inflation trends or claim reporting practices and/or the presence of large claims, among other things. Furthermore, this method

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

tends to produce volatile estimates of ultimate losses where there is volatility in the underlying incurred/paid patterns. In particular, where the expected percentage of incurred/paid losses is low, small deviations between actual and expected claims can lead to very volatile estimates of ultimate losses. As a result, this method is often unsuitable at early development stages for an accident year or underwriting year.

- *Bornhuetter-Ferguson Method ("BF Method")*: This method can be seen as a combination of the ELR and Loss Development Methods, under which the Loss Development Method is given progressively more weight as an accident year or underwriting year matures. The main advantage of the BF Method is that it provides a more stable estimate of ultimate losses than the Loss Development Method at earlier stages of development, while remaining more responsive to emerging loss development than the ELR Method. In addition, the BF Method allows for the incorporation of external market information through the use of expected loss ratios, whereas the Loss Development Method does not incorporate such information.

As part of the loss reserving process, the Company's actuaries employ the estimation method(s) that they believe will produce the most reliable estimate of ultimate losses, at that particular evaluation date, for each reserve class and accident year or underwriting year combination. Often, this is a blend (i.e. weighted average) of the results of two or more appropriate actuarial methods. These ultimate loss estimates are generally utilized to evaluate the adequacy of ultimate loss estimates for previous accident or underwriting years, established in the prior reporting period. For the initial estimate of the current accident or underwriting year, the available claim data is typically insufficient to produce a reliable estimate of ultimate losses. As a result, initial estimates for an accident or underwriting year are generally based on the ELR Method for longer tailed lines and a BF Method for shorter tailed lines. The initial ELR for each reserve class is established collaboratively by the Company's actuaries, underwriters and management at the start of the year as part of the planning process, taking into consideration prior accident years' or underwriting years' experience and industry benchmarks, adjusted after considering factors such as loss and exposure trends, rate differences, changes in contract terms and conditions, business mix changes and other known differences between the current year and prior accident or underwriting years. The initial expected loss ratios for a given accident or underwriting year may be modified over time if the underlying assumptions, such as loss development or premium rate changes, differ from the original assumptions.

Key Actuarial Assumptions

The use of the above actuarial methods requires the Company to make certain explicit assumptions, the most significant of which are: (1) expected loss ratios and (2) loss development patterns.

In earlier years, significant reliance was placed on industry benchmarks in establishing expected loss ratios and selecting loss development patterns. Over time, more reliance has been placed on historical loss experience in establishing these ratios and selecting these patterns where the Company believes the weight of its experience has become sufficiently credible for consideration. The weight given to the Company's experience differs for each of the three claim tail classes (refer to '*Claim Tail Analysis*' below for further details). In establishing expected loss ratios for the insurance segment, consideration is given to a number of other factors, including exposure trends, rate adequacy on new and renewal business, ceded reinsurance costs, changes in claims emergence and underwriters' view of terms and conditions in the market environment. For the reinsurance segment, expected loss ratios are based on a contract-by-contract review, which considers information provided by clients together with estimates provided by underwriters and actuaries about the impact of changes in pricing, terms and conditions and coverage. Market experience of some classes of business as compiled and analyzed by an independent actuarial firm has also been considered, as appropriate.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Claim Tail Analysis

Short-tail Business

Short-tail business generally includes exposures for which losses are usually known and paid within a relatively short period of time after the underlying loss event has occurred. The key actuarial assumptions for short-tail business in early accident years were primarily developed with reference to industry benchmarks for expected loss ratios and loss development patterns. As the Company's historical loss experience amassed, it gained credibility and became relevant for consideration in establishing these key actuarial assumptions. As a result, the Company gradually increased the weighting assigned to its historical loss experience in selecting the expected loss ratios and loss development patterns utilized to establish estimates of ultimate losses for an accident year. Due to the relatively short reporting and settlement patterns for short-tail business, more weight is generally placed on experience-based methods and other qualitative considerations in establishing reserves for recent and more mature accident years. The majority of development for an accident year or underwriting year is expected to be recognized in the subsequent one to three years.

Medium-tail Business

Medium-tail business generally has claim reporting and settlement periods that are longer than those of short-tail reserve classes. For the Company's earliest accident and underwriting years, initial key actuarial expected loss ratio and loss development assumptions were established utilizing industry benchmarks. Due to the longer claim tail, the length of time required to develop credible loss history for use in the reserve process is greater for medium-tail business than for short-tail business.

Long-tail Business

In contrast to short and medium-tail business, the claim tail for long-tail business is expected to be notably longer, as claims are often reported and ultimately paid or settled years, or even decades, after the related loss events occur. As a general rule, estimates of accident year or underwriting year ultimate losses for long-tail business are notably more uncertain than those for short and medium-tail business. To date, key actuarial assumptions for long-tail business have been derived from a combination of industry benchmarks supplemented with Company historical loss experience. While industry benchmarks that the Company believes reflect the nature and coverage of its business are considered, actual loss experience may differ from the benchmarks based on industry averages. Due to the length of the development tail for this business, reserve estimates for most accident years and underwriting years are predominantly based on the BF Method or ELR Method and the consideration of qualitative factors.

Reserving for Significant Catastrophic Events

The Company cannot estimate losses from widespread catastrophic events, such as hurricanes and earthquakes, using the traditional actuarial methods described above. Loss reserves for such events are estimated by management after a catastrophe occurs by completing an in-depth analysis of individual contracts which may potentially have been impacted by the catastrophic event. This in-depth analysis may rely on several sources of information including:

- estimates of the size of insured industry losses from the catastrophic event and the Company's corresponding market share;
- a review of the Company's portfolio of contracts performed to identify those contracts which may be exposed to the catastrophic event;
- a review of modeled loss estimates based on information previously reported by customers and brokers, including exposure data obtained during the underwriting process;
- discussions of the impact of the event with customers and brokers; and
- catastrophe bulletins published by various independent statistical reporting agencies.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

A blend of these information sources is generally used to arrive at aggregate estimates of the ultimate losses arising from the catastrophic event. In subsequent reporting periods, changes in paid and incurred losses in relation to each significant catastrophe are reviewed and adjustments are made to estimates of ultimate losses for each event if there are developments that are different from previous expectations. Adjustments are recorded in the period in which they are identified.

Selection of Reported Reserves – Management's Best Estimate

The Company's loss reserving process involves the collaboration of its underwriting, claims, actuarial, legal, ceded reinsurance and finance departments, includes various segmental committee meetings and culminates with the approval of a single point best estimate by the Company's Group Reserving Committee, which comprises senior management. In selecting this best estimate, management considers actuarial estimates and applies informed judgment regarding qualitative factors that may not be fully captured in these actuarial estimates. Such factors include, but are not limited to, the timing of the emergence of claims, volume and complexity of claims, social and judicial trends, potential severity of individual claims and the extent of Company historical loss data versus industry information. While these qualitative factors are considered in arriving at the point estimate, no specific provisions for qualitative factors are established.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reserve for Losses and Loss Expenses

Reserve for losses and loss expenses comprise the following:

At December 31,	2019	2018
Reserve for reported losses and loss expenses	\$ 4,860,916	\$ 4,626,204
Reserve for losses incurred but not reported	7,891,165	7,654,565
Reserve for losses and loss expenses	\$ 12,752,081	\$ 12,280,769

Reserve Roll-forward

The following table presents a reconciliation of the Company's beginning and ending gross reserves for losses and loss expenses and net reserves for unpaid losses and loss expenses:

Year ended December 31,	2019	2018	2017
Gross reserve for losses and loss expenses, beginning of year	\$ 12,280,769	\$ 12,997,553	\$ 9,697,827
Less reinsurance recoverable on unpaid losses, beginning of year	(3,501,669)	(3,159,514)	(2,276,109)
Net reserve for unpaid losses and loss expenses, beginning of year	8,779,100	9,838,039	7,421,718
Net incurred losses and loss expenses related to:			
Current year	3,123,698	3,389,949	3,487,826
Prior years	(78,900)	(199,662)	(200,054)
	3,044,798	3,190,287	3,287,772
Net paid losses and loss expenses related to:			
Current year	(598,988)	(724,199)	(703,796)
Prior years	(2,371,637)	(2,368,615)	(1,880,882)
	(2,970,625)	(3,092,814)	(2,584,678)
Foreign exchange and other	21,052	(1,156,412)	1,713,227
Net reserve for unpaid losses and loss expenses, end of year	8,874,325	8,779,100	9,838,039
Reinsurance recoverable on unpaid losses, end of year	3,877,756	3,501,669	3,159,514
Gross reserve for losses and loss expenses, end of year	\$ 12,752,081	\$ 12,280,769	\$ 12,997,553

The Company writes business with loss experience generally characterized as low frequency and high severity in nature, which can result in volatility in its financial results. During 2019, 2018 and 2017, the Company recognized net losses and loss expenses, net of reinstatement premiums, of \$336 million, \$430 million and \$835 million, respectively, attributable to catastrophe and weather-related events.

On December 15, 2019, the Company entered into a quota share retrocessional agreement with Harrington Re, a related party, which was deemed to have met the established criteria for retroactive reinsurance accounting. The Company recognized reinsurance recoverable on unpaid losses of \$59 million related to this reinsurance agreement. This transaction was conducted at market rates consistent with negotiated arms-length contracts.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

On April 16, 2018, the Company entered into a quota share retrocessional agreement with Harrington Re, a related party, which was deemed to have met the established criteria for retroactive reinsurance accounting. The Company recognized reinsurance recoverable on unpaid losses of \$108 million related to this reinsurance agreement. This transaction was conducted at market rates consistent with negotiated arms-length contracts.

AXIS Managing Agency Ltd., the managing agent of Syndicate 2007 entered into an agreement for the Reinsurance to Close ("RITC") of the 2015 and prior years of account of Syndicate 2007, with an effective date of January 1, 2018. This agreement was accounted for as a novation reinsurance contract. At December 31, 2018, foreign exchange and other included a reduction in reserves for losses and loss expenses of \$819 million related to this transaction.

On October 2, 2017, the Company acquired 100% ownership interest in Novae. At December 31, 2017, foreign exchange and other included reserves for losses and loss expenses of \$2,126 million and reinsurance recoverable on unpaid and paid losses of \$788 million related to this acquisition.

On April 1, 2017, the Company acquired 100% ownership interest in Aviabel. At December 31, 2017, foreign exchange and other included reserves for losses and loss expenses of \$79 million and reinsurance recoverable on unpaid and paid losses of \$5 million related to this acquisition.

The transfer of the insurance business of AXIS Specialty Australia to a reinsurer was approved by the Irish High Court on February 1, 2017 and the Federal Court of Australia of February 10, 2017. Consequently, the insurance policies, assets and liabilities of AXIS Specialty Australia were transferred to the reinsurer with effect from February 13, 2017. This resulted in the reduction of reserves for losses and loss expenses by \$223 million and a reduction in reinsurance recoverable on unpaid and paid losses by \$223 million.

Estimates for Significant Catastrophe Events

At December 31, 2019, net reserve for losses and loss expenses included estimated amounts for numerous catastrophe events. The magnitude and/or complexity of losses arising from these events, in particular Japanese Typhoons Hagibis, Faxai and Tapah, Hurricane Dorian and the Australia Wildfires which occurred in 2019 together with Hurricanes Michael and Florence, California Wildfires and Typhoon Jebi which occurred in 2018 as well as Hurricanes Harvey, Irma and Maria, and the California Wildfires which occurred in 2017 inherently increase the level of uncertainty and, therefore, the level of management judgment involved in arriving at estimated net reserves for losses and loss expenses. As a result, actual losses for these events may ultimately differ materially from current estimates.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Prior Year Reserve Development

Net favorable prior year reserve development arises from changes to estimates for losses and loss expenses related to loss events that occurred in previous calendar years. The following table presents net prior year reserve development by segment:

	Insurance	Reinsurance	Total
Year ended December 31, 2019	\$ 53,302	\$ 25,598	\$ 78,900
Year ended December 31, 2018	92,806	106,856	199,662
Year ended December 31, 2017	60,459	139,595	200,054

Short-tail business

Short-tail business includes the underlying exposures in the property and other, marine, and aviation reserve classes in the insurance segment, and the underlying exposures in the property and other reserve class in the reinsurance segment.

These reserve classes recognized net adverse prior year reserve development of \$85 million in 2019 including net adverse prior year reserve development of \$133 million recognized by the reinsurance property and other reserve class, partially offset by net favorable prior year reserve development of \$33 million contributed by the insurance marine reserve class and net favorable prior year reserve development of \$11 million contributed by the insurance property and other reserve class.

The net adverse prior year reserve development of \$133 million recognized by the reinsurance property and other reserve class was due to an increase in loss estimates attributable to Hurricanes Irma and Michael consistent with industry trends, an increase in loss estimates attributable Typhoon Jebi consistent with updated industry insured loss estimates, and reserve strengthening within the U.S. regional and commercial proportional property books of business and the European proportional property book of business.

These reserve classes contributed net favorable prior year reserve development of \$86 million in 2018 reflecting overall better than expected loss emergence related to the 2017 catastrophe events.

These reserve classes contributed \$60 million of net favorable prior year reserve development in 2017 reflecting overall better than expected loss emergence.

Medium-tail business

Medium-tail business consists primarily of insurance and reinsurance professional lines reserve classes, insurance credit and political risk reserve class and reinsurance credit and surety reserve class.

For the year ended December 31, 2019, the insurance professional lines reserve class recorded net favorable prior year reserve development of \$12 million (2018: \$32 million, 2017: \$26 million), reflecting generally favorable experience on older accident years as the Company continued to transition to more experience based actuarial methods.

For the year ended December 31, 2018, the reinsurance professional lines reserve class recorded net favorable prior year reserve development of \$21 million (2017: \$44 million), reflecting generally favorable experience on older accident years as the Company continued to transition to more experienced based actuarial methods.

For the year ended December 31, 2019, the insurance credit and political risk reserve class recorded net favorable prior year reserve development of \$19 million reflecting generally better than expected loss emergence.

For the year ended December 31, 2019, the reinsurance credit and surety reserve class recorded net favorable prior year reserve development of \$53 million (2018: \$33 million, 2017: \$33 million), reflecting generally better than expected loss emergence.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Long-tail business

Long-tail business consists primarily of insurance and reinsurance liability reserve classes and reinsurance motor reserve class.

For the year ended December 31, 2019, the insurance liability reserve class recognized net adverse prior year reserve development of \$25 million (2018: \$22 million, 2017: \$8 million). The net adverse prior year reserve development in 2019 was primarily related to reserve strengthening within the Company's U.S. excess casualty and U.S. primary casualty books of business. The net adverse prior year reserve development in 2018 was primarily related to reserve strengthening within the Company's U.S. excess casualty book of business. The net adverse prior year reserve development in 2017 was primarily attributable to reserve strengthening within the Company's run-off Bermuda excess casualty book of business.

For the year ended December 31, 2019, the reinsurance liability reserve classes recognized net favorable prior year reserve development of \$31 million (2018: \$23 million, 2017: \$43 million). The net favorable prior year reserve development in 2019, 2018 and 2017 was due to progressively increased weight given by management to experience based indications on older accident years.

For the year ended December 31, 2019, the reinsurance motor reserve class recognized net favorable prior year reserve development of \$71 million (2018: \$23 million 2017: \$1 million). The net favorable prior year reserve development in 2019 was impacted by the increase in the Ogden discount rate and changes in related actuarial assumptions. The Ogden Rate which is used to calculate lump sum awards in U.K. bodily injury cases, changed from minus 0.75% to minus 0.25%, effective August 5, 2019. The net favorable prior year reserve development in 2018 was primarily attributable to non proportional treaty business on older accident years. The net favorable prior year development in 2017 was impacted by the decrease in the Ogden Rate, which changed from plus 2.5% to minus 0.75%, effective March 20, 2017.

Net Incurred and Paid Claims Development Tables by Accident Year

The following tables present net incurred and paid claims development by accident year, total incurred-but-not-reported liabilities plus expected development on reported claims, cumulative reported claims frequency and claims duration for each reserve class. The loss development tables are presented on an accident year basis for the insurance and reinsurance segments. The Company does not discount reserves for losses and loss expenses.

Non-U.S. dollar denominated loss data is converted to U.S. dollar at the rates of exchange in effect at the balance sheet date for material underlying currencies. Fluctuations in foreign currency exchange rates may cause material shifts in loss development. Reserves for losses and loss expenses disclosed in the consolidated balance sheets are also remeasured using the rates of exchange in effect at the balance sheet date.

There are many considerations in establishing loss reserves and an attempt to evaluate loss reserves using solely the data presented in these tables could be misleading. The Company cautions against mechanical application of standard actuarial methodologies to project ultimate losses using data presented in this disclosure.

Insurance Segment

The reporting of cumulative claims frequency for the reserve classes within the insurance segment has been measured by counting the number of unique claim references including claim references assigned to nil and nominal case reserves. Claim references are grouped by claimant by loss event for each reserve class. For certain insurance facilities and business produced by managing general agents where underlying data is reported to the Company in an aggregated format, the information necessary to provide cumulative claims frequency is not available therefore reporting of claims frequency is deemed to be impracticable.

Insurance Property and Other

This reserve class includes property, terrorism, accident and health, and discontinued lines - Novae.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

The property line of business provides physical loss or damage, business interruption and machinery breakdown cover for virtually all types of property, including commercial buildings, residential premises, construction projects and onshore energy installations. This line of business includes primary and excess risks, some of which are catastrophe-exposed.

The terrorism line of business provides cover for physical damage and business interruption of an insured following an act of terrorism and includes kidnap and ransom, and crisis management insurance.

The accident and health line of business includes accidental death, travel insurance and specialty health products for employer and affinity groups. The accident and health line of business contributed net premiums earned of \$144 million to this reserve class for the year ended December 31, 2019. A large increase in reported claims related to this line of business was observed from 2012. In particular, an increase in limited benefits medical business written in 2017 resulted in a significant increase in reported claims observed in that year.

The discontinued lines - Novae includes the international direct and facultative property line of business that Novae exited or placed into run-off in the fourth quarter of 2016.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

In general, reporting and payment patterns are relatively short-tailed although they can be volatile due to the incidence of catastrophe events.

Insurance property and other													
<u>Incurring claims and allocated claim adjustment expenses, net of reinsurance</u>											At December 31, 2019		
Accident year	For the years ended December 31,										Total of incurred-but- not-reported liabilities plus expected development on reported claims	Cumulative number of reported claims	
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019			
2010	\$ 173,118	\$ 155,512	\$ 148,126	\$ 122,897	\$ 117,406	\$ 116,477	\$ 116,172	\$ 115,712	\$ 114,614	\$ 114,355	\$	684	4,423
2011		348,001	327,787	307,305	286,896	283,852	282,663	283,096	281,389	280,491		(18)	6,350
2012			391,031	400,995	383,228	363,171	358,598	352,879	352,048	342,017		497	29,931
2013				309,937	299,498	272,642	268,704	268,350	278,790	275,074		1,505	53,191
2014					360,874	355,495	344,878	329,251	328,252	326,638		3,990	62,356
2015						278,554	270,793	259,725	255,392	252,560		4,077	48,424
2016							351,075	377,820	369,508	356,353		6,011	93,717
2017								885,486	829,016	808,602		2,992	697,983
2018									721,266	759,300		41,900	705,592
2019										429,987		113,754	445,460
									Total	<u>\$3,945,377</u>			

Insurance property and other													
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>													
Accident year	For the years ended December 31,												
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019			
2010	\$ 48,995	\$ 87,604	\$ 95,726	\$ 106,531	\$ 110,745	\$ 110,819	\$ 110,612	\$ 110,656	\$ 110,990	\$ 110,970			
2011		85,346	193,949	250,251	272,530	271,483	271,287	271,960	272,402	272,372			
2012			77,461	213,961	277,909	300,845	308,368	313,529	313,602	315,703			
2013				75,831	198,955	237,714	248,746	259,787	262,819	264,607			
2014					132,872	259,679	306,221	313,360	317,697	318,866			
2015						99,120	202,649	227,237	241,586	242,270			
2016							123,640	289,711	329,709	338,243			
2017								253,400	628,364	744,285			
2018									284,651	577,243			
2019										187,430			
									Total	<u>3,371,989</u>			
											All outstanding liabilities before 2010, net of reinsurance		6,225
											Liabilities for claims and claim adjustment expenses, net of reinsurance		<u>\$ 579,613</u>

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance property and other									
<i>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</i>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
35.0%	40.9%	13.7%	5.5%	1.9%	0.6%	0.2%	0.3%	0.2%	—%

Insurance Marine

This reserve class includes the marine line of business which provides cover for traditional marine classes, including offshore energy, cargo, liability, recreational marine, fine art, specie, and hull and war. Offshore energy coverage includes physical damage, business interruption, operators extra expense and liability coverage for all aspects of offshore upstream energy, from exploration and construction through the operation and distribution phases. The complex nature of claims arising under marine policies tends to result in reporting and payment patterns that are longer than those of the property and other reserve class. Exposure to natural perils such as windstorm and earthquake can result in volatility.

Insurance marine												At December 31, 2019	
<i>Incurred claims and allocated claim adjustment expenses, net of reinsurance</i>												<i>Total of incurred-but- not-reported liabilities plus expected development on reported claims</i>	<i>Cumulative number of reported claims</i>
<u>Accident year</u>	<i>For the years ended December 31,</i>										<u>2019</u>		
	<u>2010 unaudited</u>	<u>2011 unaudited</u>	<u>2012 unaudited</u>	<u>2013 unaudited</u>	<u>2014 unaudited</u>	<u>2015 unaudited</u>	<u>2016 unaudited</u>	<u>2017 unaudited</u>	<u>2018 unaudited</u>	<u>2019</u>			
2010	\$ 68,519	\$ 70,314	\$ 66,359	\$ 53,458	\$ 51,482	\$ 48,618	\$ 47,226	\$ 45,482	\$ 45,064	\$ 44,696	\$	262	3,197
2011		90,776	78,807	72,875	65,973	65,921	66,156	68,318	69,011	68,330		976	3,830
2012			89,712	83,138	69,075	71,211	72,238	74,797	73,002	62,447		2,718	4,134
2013				79,578	100,757	96,164	97,250	82,487	82,073	81,070		1,174	2,353
2014					59,686	44,576	48,586	44,420	46,030	47,574		4,249	2,163
2015						160,063	141,317	137,180	129,914	117,587		3,079	2,228
2016							86,386	78,762	76,511	71,161		4,020	2,841
2017								173,222	170,775	166,796		27,726	3,976
2018									182,232	191,005		45,347	4,232
2019										169,381		94,818	3,525
									Total	<u>\$1,020,047</u>			

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance marine												
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>												
For the years ended December 31,												
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 18,017	\$ 28,603	\$ 33,296	\$ 42,325	\$ 45,159	\$ 45,944	\$ 46,918	\$ 43,286	\$ 43,372	\$ 43,377		
2011		26,453	44,274	55,029	58,132	59,976	60,689	65,000	67,046	67,523		
2012			10,708	38,594	44,884	49,631	50,448	52,841	54,863	55,950		
2013				18,856	43,958	54,777	63,034	65,717	76,753	76,900		
2014					6,357	15,179	26,905	26,930	36,020	40,895		
2015						21,433	54,958	108,312	111,212	112,617		
2016							12,487	31,817	57,314	63,333		
2017								14,515	68,411	92,773		
2018									25,153	84,834		
2019										35,449		
										Total	673,651	
											All outstanding liabilities before 2010, net of reinsurance	4,296
											Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 350,692

Insurance marine										
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>										
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>	
21.1%	29.2%	21.3%	7.7%	5.7%	6.1%	3.0%	(1.1)%	0.5%	—%	

Insurance Aviation

This reserve class includes the aviation line of business which provides cover for hull and liability, and specific war cover primarily for passenger airlines but also for cargo operations, general aviation operations, airports, aviation authorities, security firms and product manufacturers. The claims reporting pattern varies by insurance coverage provided. Losses arising from war or terrorism and damage to hulls of aircraft are generally reported quickly compared with liability claims which involve passengers and third parties and generally exhibit longer reporting and payment patterns. To date, the claims reported to the Company have predominantly related to damage to hulls, therefore, reporting and payment patterns have typically exhibited a relatively short tail.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance aviation													
Incurred claims and allocated claim adjustment expenses, net of reinsurance												At December 31, 2019	
Accident year	For the years ended December 31,											Total of incurred-but-not-reported liabilities plus expected development on reported claims	Cumulative number of reported claims
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019	2019		
2010	\$ 12,917	\$ 11,698	\$ 11,420	\$ 9,745	\$ 8,766	\$ 8,695	\$ 8,741	\$ 8,525	\$ 8,868	\$ 8,836	\$	48	663
2011		17,724	15,391	12,781	9,555	8,424	7,277	7,234	7,192	6,952		118	4,202
2012			12,793	10,677	10,801	8,718	7,769	7,712	7,599	7,392		83	2,857
2013				15,652	16,330	15,205	15,249	15,585	15,470	16,763		255	3,017
2014					20,435	23,033	24,349	21,789	21,847	19,088		493	3,529
2015						29,782	28,502	29,833	29,567	27,512		299	4,140
2016							29,173	33,502	33,658	31,723		606	4,062
2017								55,581	62,035	66,896		3,747	4,272
2018									57,990	63,753		6,841	4,258
2019										42,360		11,632	2,305
											Total	\$ 291,275	

Insurance aviation													
Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance													
Accident year	For the years ended December 31,											2019	
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019	2019		
2010	\$ 1,032	\$ 4,126	\$ 6,309	\$ 6,883	\$ 7,548	\$ 7,666	\$ 8,109	\$ 8,198	\$ 8,391	\$ 8,574		8,574	
2011		639	2,822	4,513	5,030	5,564	5,814	6,035	6,177	6,222		6,222	
2012			954	2,861	4,152	5,948	6,831	7,053	7,166	7,102		7,102	
2013				4,400	7,328	9,749	11,450	13,560	14,167	14,487		14,487	
2014					3,988	8,023	11,692	13,849	14,485	14,848		14,848	
2015						8,085	16,159	20,959	23,217	24,676		24,676	
2016							10,412	19,279	26,259	27,820		27,820	
2017								21,105	40,159	50,642		50,642	
2018									21,442	40,368		40,368	
2019										16,856		16,856	
											Total	211,595	
												All outstanding liabilities before 2010, net of reinsurance	7,260
												Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 86,940

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance aviation									
<i>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</i>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
24.8%	27.4%	19.4%	10.4%	8.1%	2.7%	2.9%	0.7%	1.4%	2.1%

Insurance Credit and Political Risk

This reserve class includes the credit and political risk line of business which provides credit and political risk insurance products for banks, commodity traders, corporations and multilateral and export credit agencies. Cover is provided for a range of risks including sovereign default, credit default, political violence, currency inconvertibility and non-transfer, expropriation, aircraft non-repossession and contract frustration due to political events.

The credit insurance coverage is primarily for lenders seeking to mitigate the risk of non-payment from their borrowers. In order to claim compensation under a credit insurance contract, the insured (most often a bank) cannot assign, without the Company's prior agreement, the insured contract (most often a loan) to any third party and is normally obliged to hold a material portion of insured asset on their books, unhedged and uninsured. Claims for this business tend to be characterized by their severity risk, as opposed to their frequency risk. Claim reporting and payment patterns are anticipated to be volatile. Under the notification provisions of credit insurance policies issued by the Company, it anticipates being advised of an insured event within a relatively short time period. Consequently, the Company generally estimates ultimate losses based on a contract-by-contract analysis which considers the contracts' terms, the facts and circumstances of underlying loss events and qualitative input from claims managers.

Insurance credit and political risk											At December 31, 2019	
<i>Incurring claims and allocated claim adjustment expenses, net of reinsurance</i>											<i>Total of incurred-but-not-reported liabilities plus expected development on reported claims</i>	<i>Cumulative number of reported claims</i>
<u>Accident year</u>	<i>For the years ended December 31,</i>											
	<u>2010 unaudited</u>	<u>2011 unaudited</u>	<u>2012 unaudited</u>	<u>2013 unaudited</u>	<u>2014 unaudited</u>	<u>2015 unaudited</u>	<u>2016 unaudited</u>	<u>2017 unaudited</u>	<u>2018 unaudited</u>	<u>2019</u>		
2010	\$ 62,415	\$ 63,179	\$ 63,259	\$ 65,597	\$ 64,980	\$ 65,014	\$ 72,104	\$ 90,888	\$ 99,423	\$ 99,633	\$ 339	6
2011		58,154	48,665	47,706	48,361	48,333	45,036	33,609	27,904	27,904	268	4
2012			32,602	15,672	12,435	12,447	10,322	46	198	198	155	4
2013				26,439	25,684	9,759	9,880	14,942	14,067	12,377	4,070	1
2014					38,825	70,713	67,109	68,324	69,589	71,274	2,822	6
2015						30,329	30,368	27,524	26,012	25,930	2,621	2
2016							45,391	44,891	42,401	42,972	18,275	1
2017								36,751	34,765	28,209	17,808	3
2018									47,215	36,618	12,576	1
2019										50,609	33,702	5
										Total	<u>\$ 395,724</u>	

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance credit and political risk												
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>												
For the years ended December 31,												
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 50,000	\$ 85,418	\$ 90,729	\$ 106,768	\$ 101,789	\$ 101,951	\$ 102,157	\$ 102,203	\$ 102,522	\$ 101,262		
2011		32,788	37,205	27,636	27,636	27,636	27,636	27,636	27,636	27,636		
2012			—	—	—	—	39	41	43	43		
2013				745	2,235	3,726	5,216	11,769	13,828	13,828		
2014					1,924	39,952	61,108	57,858	57,858	64,050		
2015						—	23,309	23,309	23,309	23,309		
2016							—	24,697	24,697	24,697		
2017								1,523	5,593	11,019		
2018									4,937	13,545		
2019										15,528		
										Total	294,917	
											All outstanding liabilities before 2010, net of reinsurance	(2,588)
											Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 98,219

Insurance credit and political risk									
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
22.6%	33.6%	4.0%	3.4%	11.3%	5.3%	0.3%	—%	0.2%	(1.3)%

Insurance Professional Lines

This reserve class includes the professional lines line of business which provides directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity, cyber and privacy insurance, medical malpractice and other financial insurance related covers for public and private commercial enterprises, financial institutions, not-for-profit organizations and other professional service providers. This reserve class also includes discontinued lines - Novae specifically the financial institutions and professional indemnity lines of business that Novae exited or placed into run-off in the first quarter of 2017. This business is predominantly written on a claims-made basis. Typically, this reserve class is anticipated to exhibit medium to long tail claim reporting and payment patterns.

With respect to key actuarial assumptions, the Company relies on its loss experience when establishing expected loss ratios and selected loss development patterns. Loss reporting patterns for professional lines business tend to be volatile, causing instability in actuarial indications based on incurred loss data until an accident year or underwriting year matures. Consequently, initial loss reserves for an accident year or underwriting year are generally based on an ELR Method and the consideration of relevant qualitative factors. As accident years and underwriting years mature, the Company increasingly gives more weight to methods that reflect its experience until its selections are based almost exclusively on experience-based methods. The Company evaluates the appropriateness of the transition to experience-based methods at the reserve class level, commencing this transition when it believes that its incurred loss development is sufficient to produce meaningful actuarial indications. The rate at which the Company transitions fully to sole reliance on experience-based methods can vary by reserve class and by year, depending on its assessment of the stability and relevance of such indications. For some professional lines in the insurance segment, the

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Company also relies on the evaluation of the open claim inventory in addition to the commonly employed actuarial methods when establishing reserves.

Insurance professional lines												At December 31, 2019	
<u>Incurring claims and allocated claim adjustment expenses, net of reinsurance</u>													
Accident year	For the years ended December 31,										Total of incurred-but- not-reported liabilities plus expected development on reported claims	Cumulative number of reported claims	
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019			
2010	\$ 232,002	\$ 237,156	\$ 234,655	\$ 206,406	\$ 183,237	\$ 158,729	\$ 180,704	\$ 167,917	\$ 187,464	\$ 185,116	\$ 17,194	5,698	
2011		313,520	315,326	333,914	326,663	330,773	343,911	352,309	352,792	350,066	28,007	7,229	
2012			328,397	375,164	376,603	375,549	362,534	364,443	353,182	351,283	34,964	8,326	
2013				383,432	396,819	398,059	364,851	354,190	356,261	334,398	49,144	9,439	
2014					412,523	411,232	421,093	391,952	371,407	353,994	76,580	9,802	
2015						377,129	376,865	382,679	357,646	344,239	87,707	10,453	
2016							349,030	351,990	358,368	359,813	105,971	11,763	
2017								378,746	397,760	437,528	197,748	13,418	
2018									361,490	374,683	217,867	15,584	
2019										399,585	348,212	11,747	
									Total	<u>\$3,490,705</u>			

AXIS CAPITAL HOLDINGS LIMITED
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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance professional lines											
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>											
For the years ended December 31,											
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>	
2010	\$ 7,807	\$ 27,806	\$ 53,493	\$ 72,592	\$ 88,558	\$ 99,039	\$ 109,540	\$ 114,520	\$ 136,510	\$ 142,788	
2011		7,402	32,897	74,461	108,598	165,806	238,401	283,510	294,678	302,151	
2012			7,818	41,328	100,089	184,191	230,913	253,958	273,383	281,715	
2013				17,690	73,077	129,671	175,835	213,225	242,860	263,325	
2014					23,529	70,662	130,039	192,405	223,838	242,899	
2015						20,197	67,725	137,738	169,555	203,542	
2016							15,859	71,245	147,370	192,459	
2017								20,946	71,779	139,143	
2018									20,091	81,986	
2019										25,911	
									Total	1,875,919	
										All outstanding liabilities before 2010, net of reinsurance	65,486
										Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 1,680,272

Insurance professional lines									
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
4.7%	12.8%	16.6%	13.9%	11.4%	9.5%	7.6%	2.8%	7.0%	3.4%

Insurance Liability

This reserve class includes the liability line of business which primarily targets primary and low to mid-level excess and umbrella commercial liability risks in the U.S. wholesale markets in addition to primary and excess of loss employers, public and products liability business predominately in the U.K. This reserve class also includes discontinued lines - Novae specifically the international liability line of business that Novae exited or placed into run-off in the fourth quarter of 2016. Target industry sectors include construction, manufacturing, transportation and trucking and other services. The delay between the writing of a contract, notification and subsequent settlement of a claim in respect of that contract results in claim reporting and payment patterns that are typically long-tail in nature. A consequence of the claim development tail is that this line of business is particularly exposed, among a number of uncertainties, to the potential for unanticipated levels of claim inflation relative to that assumed when the contracts were written. Factors influencing claim inflation on this class can include, but are not limited to, underlying economic and medical inflation, judicial inflation, mass tort and changing social trends.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance liability												
<u>Incurred claims and allocated claim adjustment expenses, net of reinsurance</u>											At December 31, 2019	
Accident year	For the years ended December 31,										Total of incurred-but-not-reported liabilities plus expected development on reported claims	Cumulative number of reported claims
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019		
2010	\$ 79,398	\$ 94,222	\$ 98,642	\$ 98,853	\$ 100,133	\$ 98,529	\$ 105,438	\$ 104,465	\$ 104,042	\$ 107,420	\$ 12,287	4,029
2011		72,580	75,329	83,925	87,770	85,792	84,079	82,312	82,657	85,036	14,042	3,571
2012			70,887	71,683	74,134	71,474	68,658	75,697	72,727	67,237	18,015	3,188
2013				93,233	95,306	95,174	88,241	93,681	95,981	91,941	16,997	3,568
2014					107,133	124,303	129,764	130,672	132,019	131,474	22,710	4,865
2015						128,437	127,353	137,568	165,073	183,088	43,822	6,225
2016							124,323	130,188	128,911	127,528	53,401	7,068
2017								162,446	166,573	183,793	76,834	6,710
2018									168,146	167,614	95,288	5,454
2019										191,121	165,431	3,714
									Total	<u>\$1,336,252</u>		

Insurance liability											
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>											
Accident year	For the years ended December 31,										
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019	
2010	\$ 1,030	\$ 15,977	\$ 30,800	\$ 53,594	\$ 61,044	\$ 66,129	\$ 71,803	\$ 86,454	\$ 88,007	\$ 88,476	\$ 88,476
2011		2,761	10,540	20,190	38,377	46,074	54,996	60,261	62,150	67,114	67,114
2012			1,663	5,514	15,411	30,145	37,139	42,740	46,540	48,034	48,034
2013				2,359	23,280	33,319	42,049	60,004	66,963	71,982	71,982
2014					1,414	18,640	49,836	71,595	84,374	93,574	93,574
2015						5,438	22,392	39,637	92,664	120,216	120,216
2016							6,319	23,280	36,385	56,446	56,446
2017								5,439	29,564	59,356	59,356
2018									9,027	35,612	35,612
2019										7,337	7,337
									Total	<u>648,147</u>	
											50,617
											<u>\$ 738,722</u>

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Insurance liability									
<i>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</i>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
3.1%	12.9%	13.8%	19.3%	11.8%	7.6%	5.7%	6.0%	3.6%	0.4%

Reinsurance Segment

The presentation of net incurred and paid claims development tables by accident year for the reinsurance segment is challenging due to the need to allocate loss information related to proportional treaties to the appropriate accident years. Information related to proportional treaty reinsurance contracts is generally submitted to the Company using quarterly bordereau reporting by underwriting year, with a supplemental listing of large losses. Large losses can be allocated to the corresponding accident years accurately. The remaining losses can generally only be allocated to accident years based on estimated premiums earned and loss reporting patterns. To the extent management's assumptions and allocation procedures differ from the actual loss development patterns, the actual loss development may differ materially from the net incurred and paid claims development presented in the tables below.

The reporting of cumulative claims frequency for the reserve classes within the reinsurance segment is deemed to be impracticable as the information necessary to provide cumulative claims frequency for these reserve classes is not available to the Company.

Reinsurance Property and Other

This reserve class includes catastrophe, property, agriculture, engineering, marine and other, accident and health, and discontinued lines - Novae.

The catastrophe line of business provides protection for most catastrophic losses that are covered in the underlying insurance policies written by the Company's cedants. The underlying policies principally cover property-related exposures but other exposures including workers compensation and personal accident are also covered. The principal perils covered by policies in this portfolio include hurricane and windstorm, earthquake, flood, tornado, hail and fire. In some instances, terrorism may be a covered peril or the only peril. This business is written on a proportional and an excess of loss basis.

The property line of business provides protection for property damage and related losses resulting from natural and man-made perils contained in underlying personal and commercial lines insurance policies written by the Company's cedants. The predominant exposure is to property damage, but other risks, including business interruption and other non-property losses, may also be covered when arising from a covered peril. The most significant perils covered by policies in this portfolio include windstorm, tornado and earthquake, but other perils such as freezes, riots, floods, industrial explosions, fires, hail and a number of other loss events are also included. This business is written on a proportional and excess of loss basis.

The agriculture line of business provides protection for risks associated with the production of food and fiber on a global basis for primary insurance companies writing multi-peril crop insurance, crop hail, and named peril covers, as well as custom risk transfer mechanisms for agricultural dependent industries with exposures to crop yield and/or price deviations. This business is written on a proportional and aggregate stop loss reinsurance basis.

The engineering line of business provides protection for all types of construction risks and risks associated with erection, testing and commissioning of machinery and plants during the construction stage. This line of business also includes coverage for losses arising from operational failures of machinery, plant and equipment, and electronic equipment as well as business interruption.

The marine and other line of business includes marine and aviation reinsurance.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

The accident and health line of business includes personal accident, specialty health, accidental death, travel, life and disability reinsurance products which are offered on a proportional and catastrophic or per life excess of events loss basis. .

The discontinued lines - Novae includes the international facultative property line of business that Novae exited or placed into run-off in the fourth quarter of 2016.

In general, reporting and payment patterns are relatively short-tailed and can be volatile due to the incidence of catastrophe events.

Reinsurance property and other											
Incurred claims and allocated claim adjustment expenses, net of reinsurance										At December 31, 2019	
Accident year	For the years ended December 31,										Total of incurred- but-not-reported liabilities plus expected development on reported claims
	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016 unaudited	2017 unaudited	2018 unaudited	2019	
2010	\$ 614,748	\$ 601,243	\$ 570,057	\$ 581,838	\$ 584,942	\$ 578,740	\$ 570,796	\$ 568,725	\$ 567,879	\$ 566,112	\$ 3,070
2011		1,111,563	1,116,669	1,116,042	1,084,197	1,067,100	1,041,136	1,039,379	1,040,759	1,041,771	7,782
2012			555,459	523,208	507,619	476,989	461,152	456,127	457,531	454,281	2,860
2013				578,725	560,658	529,856	509,526	503,539	503,026	499,736	1,904
2014					542,601	560,775	534,618	522,102	520,299	519,529	40,234
2015						477,301	464,588	459,487	454,225	450,182	6,030
2016							616,621	635,164	622,331	618,643	11,017
2017								1,076,967	1,081,415	1,107,597	75,459
2018									882,829	1,008,505	166,887
2019										959,771	729,042
									Total	<u>\$7,226,127</u>	

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance property and other										
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>										
For the years ended December 31,										
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>
2010	\$ 116,132	\$ 311,052	\$ 404,287	\$ 434,908	\$ 480,734	\$ 509,769	\$ 534,590	\$ 540,312	\$ 542,590	\$ 546,691
2011		251,855	587,047	794,575	893,746	923,166	996,481	1,011,283	1,013,858	1,019,917
2012			122,823	294,298	366,968	389,373	403,926	413,594	415,634	428,152
2013				107,628	324,839	441,138	471,380	481,066	482,480	483,105
2014					102,356	352,883	434,769	452,193	458,350	463,342
2015						71,477	265,896	368,698	400,980	413,477
2016							128,126	376,920	520,779	563,781
2017								252,360	723,826	868,458
2018									195,707	648,622
2019										161,293
									Total	5,596,838
										All outstanding liabilities before 2010, net of reinsurance
										14,757
										Liabilities for claims and claim adjustment expenses, net of reinsurance
										\$ 1,644,046

Reinsurance property and other									
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
20.9%	40.8%	18.8%	6.2%	3.3%	3.1%	1.6%	1.3%	0.5%	0.7%

Reinsurance Credit and Surety

This reserve class includes the credit and surety line of business which provides reinsurance of trade credit insurance products and includes proportional and excess of loss structures. The underlying insurance indemnifies sellers of goods and services in the event of a payment default by the buyer of those goods and services. Surety reinsurance provides protection for losses arising from a broad array of surety bonds issued by insurers to satisfy regulatory demands or contract obligations in a variety of jurisdictions around the world. The Company also provides mortgage reinsurance to mortgage guaranty insurers and U.S. government sponsored entities for losses related to credit risk transfer into the private sector.

Initial and most recent underwriting year loss projections are generally based on the ELR Method, with consideration given to qualitative factors. Given that there is a quicker and more stable reporting pattern for trade credit and mortgage business, the Company generally commences the transition to experience-based methods sooner for these lines of business than for surety business.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance credit and surety											
<u>Incurring claims and allocated claim adjustment expenses, net of reinsurance</u>											At December 31, 2019
For the years ended December 31,											<u>Total of incurred-but-not-reported liabilities plus expected development on reported claims</u>
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>	
2010	\$ 119,180	\$ 99,460	\$ 92,848	\$ 90,029	\$ 85,856	\$ 78,247	\$ 76,937	\$ 74,913	\$ 73,672	\$ 71,911	\$ 1,751
2011		120,572	106,495	104,616	111,485	109,662	101,236	99,412	98,885	95,813	2,439
2012			159,507	147,627	150,137	147,406	139,097	131,120	127,576	124,552	3,883
2013				164,207	152,467	143,719	139,886	135,762	124,533	124,674	3,546
2014					136,419	135,525	142,703	139,015	127,683	126,397	6,726
2015						160,132	165,861	160,675	156,635	137,848	8,335
2016							141,639	141,128	148,943	123,366	9,849
2017								135,040	132,618	126,786	22,830
2018									111,692	120,289	38,357
2019										74,689	39,291
									Total	\$ 1,126,325	

Reinsurance credit and surety												
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>												
For the years ended December 31,												
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 28,190	\$ 48,274	\$ 59,074	\$ 59,804	\$ 61,466	\$ 62,585	\$ 64,020	\$ 65,024	\$ 65,346	\$ 65,781		
2011		22,411	53,392	69,851	77,392	81,930	84,106	86,419	87,799	88,615		
2012			49,482	85,228	99,046	104,876	108,391	110,150	111,441	113,402		
2013				32,399	76,743	91,486	98,039	105,692	107,555	112,520		
2014					35,552	61,076	85,984	95,079	102,670	107,082		
2015						32,907	81,685	99,774	116,756	118,670		
2016							42,028	73,201	92,187	101,822		
2017								37,295	73,944	90,495		
2018									38,990	68,505		
2019										19,281		
									Total	886,173		
											All outstanding liabilities before 2010, net of reinsurance	16,847
											Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 256,999

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance credit and surety									
<i>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</i>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
30.2%	28.8%	14.6%	6.6%	3.9%	2.1%	2.4%	1.5%	0.7%	0.6%

Reinsurance Professional Lines

This reserve class includes the professional line of business which provides protection for directors' and officers' liability, employment practices liability, medical malpractice, professional indemnity, environmental liability and miscellaneous errors and omissions insurance risks. The underlying business is predominantly written on a claims-made basis. This business is written on a proportional and excess of loss basis. Typically, this reserve class is anticipated to exhibit medium to long-tail claim reporting and payment patterns.

With respect to key actuarial assumptions, the Company relies on its experience when establishing expected loss ratios and selected loss development patterns. Loss reporting patterns for professional lines business tend to be volatile, causing instability in actuarial indications based on incurred loss data until an underwriting year matures. Consequently, initial loss reserves for an underwriting year are generally based on the ELR Method and the consideration of relevant qualitative factors. As underwriting years mature, the Company increasingly gives more weight to methods that reflect its experience until its selections are based almost exclusively on experience-based methods. The Company evaluates the appropriateness of the transition to experience-based methods at the reserve class level, commencing this transition when it believes that its incurred loss development is sufficient to produce meaningful actuarial indications. The rate at which the Company transitions fully to sole reliance on experience-based methods can vary by reserve class and by year, depending on its assessment of the stability and relevance of such indications.

Reinsurance professional lines											
<i>Incurred claims and allocated claim adjustment expenses, net of reinsurance</i>										At December 31, 2019	
<u>Accident year</u>	<i>For the years ended December 31,</i>										<i>Total of incurred- but-not-reported liabilities plus expected development on reported claims</i>
	<u>2010 unaudited</u>	<u>2011 unaudited</u>	<u>2012 unaudited</u>	<u>2013 unaudited</u>	<u>2014 unaudited</u>	<u>2015 unaudited</u>	<u>2016 unaudited</u>	<u>2017 unaudited</u>	<u>2018 unaudited</u>	<u>2019</u>	
2010	\$ 209,934	\$ 210,173	\$ 211,361	\$ 214,417	\$ 214,185	\$ 196,939	\$ 189,415	\$ 179,762	\$ 166,044	\$ 167,376	\$ 5,701
2011		201,013	201,364	202,620	211,367	209,088	208,219	200,437	177,405	166,951	6,047
2012			209,548	216,088	221,544	223,926	222,626	212,594	213,984	206,791	18,318
2013				209,292	214,396	215,562	213,745	213,182	205,733	181,563	35,871
2014					219,376	219,415	219,345	219,242	233,611	230,042	27,940
2015						212,031	212,024	214,344	225,139	231,980	63,050
2016							195,190	196,293	200,020	227,952	67,496
2017								155,137	155,759	162,116	72,727
2018									146,387	148,921	132,683
2019										139,150	130,571
									Total	<u>\$ 1,862,842</u>	

AXIS CAPITAL HOLDINGS LIMITED
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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance professional lines										
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>										
For the years ended December 31,										
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>
2010	\$ 1,757	\$ 12,026	\$ 31,243	\$ 52,138	\$ 76,798	\$ 107,363	\$ 123,981	\$ 130,610	\$ 138,047	\$ 142,994
2011		1,510	11,822	30,272	57,230	84,845	103,052	119,767	130,059	136,492
2012			778	10,392	29,622	53,629	85,972	107,224	131,853	145,866
2013				1,064	12,073	30,491	64,958	81,630	104,904	123,282
2014					2,019	13,073	48,854	74,577	109,239	147,194
2015						3,134	13,505	41,539	79,296	112,042
2016							1,768	20,534	52,617	95,283
2017								2,813	14,921	39,915
2018									271	2,593
2019										335
									Total	945,996
										All outstanding liabilities before 2010, net of reinsurance
										52,321
										Liabilities for claims and claim adjustment expenses, net of reinsurance
										\$ 969,167

Reinsurance professional lines									
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>									
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
0.8%	5.5%	12.4%	15.1%	14.2%	13.8%	10.5%	5.7%	4.2%	3.0%

Reinsurance Motor

This reserve class includes the motor line of business which provides protection to insurers for motor liability and motor property damage losses arising from any one occurrence. A loss occurrence can involve one or many claimants where the ceding insurer aggregates the claims from the occurrence. This reserve class also includes discontinued lines - Novae specifically the motor reinsurance line of business that Novae exited or placed into run-off in the first quarter of 2017. The Company offers traditional proportional and non-proportional reinsurance as well as structured solutions predominantly relating to European exposures.

The business written on a proportional basis has expanded significantly since 2010 and now represents the majority of the premium in this line of business. Most of the premium relates to a relatively small number of large United Kingdom ("U.K.") quota share reinsurance treaty contracts. The motor proportional class generally has a significantly shorter reported and payment pattern, relative to the motor non-proportional class.

The motor non-proportional business consists of standard excess of loss contracts written for cedants in several European countries with most of the premium related to two major markets, U.K. and France. Since 2009/2010, an increasing number of large bodily injury settlements in the U.K. market were settled using indexed annuities (Periodical Payment Orders "PPOs"). This led to a materially longer development tail on the older accident years for the U.K. non-proportional motor book. This also resulted in the inclusion of capitalization clauses on a number of U.K. motor treaties to help mitigate the lengthening of the development tail on more recent accident years.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

In 2017, the U.K. Ministry of Justice announced a decrease in the discount rate to be used to calculate lump sum awards in U.K. bodily injury cases, known as the Ogden Rate. Effective March 20, 2017, the Ogden rate changed from plus 2.5% to minus 0.75%. This resulted in a trend toward a lower number of claims settlements using PPOs and an increase in projected ultimate losses, particularly related to recent accident years.

Effective August 5, 2019, the Ogden rate changed from minus 0.75% to minus 0.25%. This resulted in a decrease in projected ultimate losses, particularly related to recent accident years.

Reinsurance motor											
<u>Incurring claims and allocated claim adjustment expenses, net of reinsurance</u>											At December 31, 2019
For the years ended December 31,											<u>Total of incurred- but-not-reported liabilities plus expected development on reported claims</u>
<u>Accident year</u>	<u>2010 unaudited</u>	<u>2011 unaudited</u>	<u>2012 unaudited</u>	<u>2013 unaudited</u>	<u>2014 unaudited</u>	<u>2015 unaudited</u>	<u>2016 unaudited</u>	<u>2017 unaudited</u>	<u>2018 unaudited</u>	<u>2019</u>	
2010	\$ 100,219	\$ 107,538	\$ 108,183	\$ 107,264	\$ 101,343	\$ 96,235	\$ 86,803	\$ 83,112	\$ 80,901	\$ 80,028	\$ 21,660
2011		158,475	162,069	166,112	172,062	168,225	159,626	148,536	143,846	136,077	18,030
2012			180,137	170,848	159,446	151,899	147,041	137,585	134,685	126,507	15,534
2013				164,927	162,475	150,620	141,237	137,791	135,003	126,050	13,828
2014					185,279	186,947	182,237	179,510	174,719	171,403	6,302
2015						225,974	222,178	226,319	227,844	216,610	12,291
2016							249,616	268,525	270,264	259,959	21,855
2017								370,778	380,509	362,721	50,597
2018									363,917	363,733	83,024
2019										339,476	165,127
									Total	\$2,182,564	

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance motor												
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>												
For the years ended December 31,												
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 7,201	\$ 12,601	\$ 18,149	\$ 21,713	\$ 25,153	\$ 29,429	\$ 32,717	\$ 33,769	\$ 34,839	\$ 37,041		
2011		23,943	47,991	62,861	73,562	80,349	86,466	91,165	92,201	94,155		
2012			29,381	53,959	68,970	78,880	85,488	89,646	91,982	93,194		
2013				34,133	54,274	68,502	78,744	84,512	90,165	93,234		
2014					43,628	75,543	95,563	103,909	114,300	124,157		
2015						58,231	95,172	115,903	133,528	149,813		
2016							61,321	106,934	131,606	150,004		
2017								72,859	137,217	168,855		
2018									84,564	145,561		
2019										90,291		
									Total		1,146,305	
											All outstanding liabilities before 2010, net of reinsurance	193,345
											Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 1,229,604

Reinsurance motor										
<u>Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)</u>										
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>	
22.3%	16.4%	10.1%	6.9%	5.5%	4.7%	3.0%	1.0%	1.4%	2.8%	

Reinsurance Liability

This reserve class includes the liability line of business which provides protection to insurers of admitted casualty business, excess and surplus lines casualty business and specialty casualty programs. The primary focus of the underlying business is general liability, workers' compensation, auto liability and excess casualty. This reserve class includes discontinued lines - Novae specifically the general liability reinsurance line of business that Novae exited or placed into run-off in the first quarter of 2017.

Claim reporting and payment patterns are typically long-tail in nature and, therefore, subject to increased uncertainty surrounding future loss development. In particular, claims can be subject to inflation from a number of sources including, but not limited to, economic and medical inflation, judicial inflation and changing social trends.

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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance liability												
<u>Incurring claims and allocated claim adjustment expenses, net of reinsurance</u>											At December 31, 2019	
For the years ended December 31,											<u>Total of incurred-but-not-reported liabilities plus expected development on reported claims</u>	
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 172,823	\$ 171,775	\$ 183,347	\$ 183,715	\$ 202,007	\$ 190,921	\$ 181,962	\$ 165,983	\$ 159,230	\$ 156,113	\$	13,119
2011		172,189	172,201	173,984	191,668	197,766	194,604	193,784	191,873	189,014		16,614
2012			166,386	162,945	167,366	172,341	173,501	170,979	164,309	158,342		16,994
2013				171,271	175,174	182,201	184,240	183,915	177,112	157,236		24,545
2014					199,433	202,939	204,657	200,557	199,340	197,187		53,905
2015						214,735	215,099	216,061	215,889	213,662		67,030
2016							240,440	245,820	250,868	254,154		99,784
2017								276,929	270,589	279,172		133,392
2018									264,570	268,506		168,425
2019										263,525		214,542
									Total	\$2,136,911		

Reinsurance liability												
<u>Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance</u>												
For the years ended December 31,												
<u>Accident year</u>	<u>2010</u> <u>unaudited</u>	<u>2011</u> <u>unaudited</u>	<u>2012</u> <u>unaudited</u>	<u>2013</u> <u>unaudited</u>	<u>2014</u> <u>unaudited</u>	<u>2015</u> <u>unaudited</u>	<u>2016</u> <u>unaudited</u>	<u>2017</u> <u>unaudited</u>	<u>2018</u> <u>unaudited</u>	<u>2019</u>		
2010	\$ 2,479	\$ 17,652	\$ 46,199	\$ 62,287	\$ 83,792	\$ 97,430	\$ 108,748	\$ 119,678	\$ 128,386	\$ 130,566		
2011		5,197	21,291	40,009	70,083	92,477	112,347	123,403	135,627	141,483		
2012			3,541	12,800	28,384	58,777	78,235	101,164	115,618	125,979		
2013				5,971	22,235	52,328	69,055	88,262	102,593	113,127		
2014					7,083	28,661	48,420	70,138	89,412	109,974		
2015						7,270	27,455	54,517	80,865	108,961		
2016							11,874	37,703	69,558	111,870		
2017								12,438	42,147	78,477		
2018									19,303	49,795		
2019										19,157		
									Total	989,389		
											All outstanding liabilities before 2010, net of reinsurance	80,768
											Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 1,228,290

AXIS CAPITAL HOLDINGS LIMITED
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8. RESERVE FOR LOSSES AND LOSS EXPENSES (CONTINUED)

Reinsurance liability									
Average annual percentage payout of incurred claims by age, net of reinsurance (unaudited)									
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
4.1%	9.6%	13.2%	13.7%	12.2%	10.6%	7.2%	6.7%	4.4%	1.4%

Reconciliation of Loss Development Tables to Consolidated Balance Sheet

The following table reconciles the reserve for losses and loss expenses at December 31, 2019 included in the loss development tables to the reserve for losses and loss expenses reported in the consolidated balance sheet:

Reconciliation of the disclosure of incurred and paid claims development to the liability for unpaid claims and claim adjustment expenses			
At December 31, 2019			
	Net outstanding liabilities	Reinsurance recoverable on unpaid claims	Gross outstanding liabilities
Insurance segment			
Property and other	\$ 579,613	\$ 358,193	\$ 937,806
Marine	350,692	164,005	514,697
Aviation	86,940	36,094	123,034
Credit and political risk	98,219	34,615	132,834
Professional lines	1,680,272	1,105,684	2,785,956
Liability	738,722	1,108,382	1,847,104
Total insurance segment	3,534,458	2,806,973	6,341,431
Reinsurance segment			
Property and other	1,644,046	448,885	2,092,931
Credit and surety	256,999	64,475	321,474
Professional lines	969,167	135,505	1,104,672
Motor	1,229,604	209,495	1,439,099
Liability	1,228,290	212,423	1,440,713
Total reinsurance segment	5,328,106	1,070,783	6,398,889
Total	\$ 8,862,564	\$ 3,877,756	12,740,320
Unallocated claims adjustment expenses			140,650
Foreign exchange and other ⁽¹⁾			27,202
(Ceded)/assumed reserves related to retroactive transactions			(156,091)
Total liability for unpaid claims and claims adjustment expense			\$ 12,752,081

(1) Non-U.S. dollar denominated loss data is converted to U.S. dollar at the rates of exchange in effect at the balance sheet date for material underlying currencies. Fluctuations in currency exchange rates may cause material shifts in loss development. Reserves for losses and loss expenses disclosed in the consolidated balance sheets are also remeasured using rates of exchange in effect at the balance sheet date.

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9. REINSURANCE

In the normal course of business, the Company purchases treaty and facultative reinsurance protection to limit ultimate losses from catastrophic events and reduce loss aggregation risk.

Facultative reinsurance provides cover for all or a portion of the losses incurred for a single policy and the Company separately negotiates each facultative contract.

Treaty reinsurance provides cover for a specified type or category of risks. The Company's treaty reinsurance agreements provide this cover on either an excess of loss or a proportional basis. Excess of loss covers provide a contractually set amount of coverage after a specified loss amount has been reached. These treaties can provide cover for a number of lines of business within one contract. Under proportional reinsurance, the Company cedes an agreed proportion of the premiums and the losses and loss expenses on the policies it underwrites. These treaties provide the Company with a specified percentage of coverage from the first dollar of loss.

All of these reinsurance contracts provide the Company with the right to recover a specified amount of losses and loss expenses from reinsurers. To the extent that reinsurers do not meet their obligations under these agreements due to solvency issues, contractual disputes over contract language or coverage and/or other reasons, the Company remains liable. The Company predominantly cedes its business to reinsurers rated A- or better by A.M. Best.

The following table presents gross and net premiums written and earned:

Year ended December 31,	2019		2018		2017	
	Premiums written	Premiums earned	Premiums written	Premiums earned	Premiums written	Premiums earned
Gross	\$ 6,898,858	\$ 6,910,677	\$ 6,910,065	\$ 6,882,217	\$ 5,556,273	\$ 5,616,234
Ceded	(2,409,243)	(2,323,499)	(2,251,103)	(2,090,722)	(1,529,130)	(1,467,474)
Net	<u>\$ 4,489,615</u>	<u>\$ 4,587,178</u>	<u>\$ 4,658,962</u>	<u>\$ 4,791,495</u>	<u>\$ 4,027,143</u>	<u>\$ 4,148,760</u>

For the year ended December 31, 2019, the Company recognized ceded losses and loss expenses of \$1,602 million (2018: \$1,565 million; 2017: \$1,010 million).

At December 31, 2019, the Company's provision for uncollectible amounts was \$18 million (2018: \$21 million; 2017: \$17 million).

AXIS CAPITAL HOLDINGS LIMITED
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10. DEBT AND FINANCING ARRANGEMENTS

a) Debt

The following table summarizes the Company's debt:

Year ended December 31,	2019	2018
5.875% Senior Notes	\$ 499,687	\$ 498,967
2.650% Senior Notes ⁽¹⁾	—	249,885
5.150% Senior Notes	246,491	246,425
4.000% Senior Notes	346,997	346,684
3.900% Senior Notes	295,339	—
Junior Subordinated Notes	419,643	—
Total Debt	\$ 1,808,157	\$ 1,341,961

(1) On April 1, 2019, AXIS Specialty Finance PLC, a 100% owned finance subsidiary, repaid \$250 million aggregate principal amount of 2.650% Senior Notes at their stated maturity.

The tables below provide the key terms of the Company's debt:

Description	Issuance Date	Aggregate Principal	Issue Price	Net Proceeds	Maturity Date
5.875% Senior Notes	March 23, 2010	500,000	99.624%	495,000	June 1, 2020
5.150% Senior Notes	March 13, 2014	250,000	99.474%	246,000	April 1, 2045
4.000% Senior Notes	December 6, 2017	350,000	99.780%	347,000	December 6, 2027
3.900% Senior Notes	June 19, 2019	300,000	99.360%	296,000	July 15, 2029
Junior Subordinated Notes	December 10, 2019	425,000	99.000%	420,750	January 15, 2040

Description	Interest Rate	Interest Payments Due
5.875% Senior Notes	5.875%	Semi-annually in arrears on June 1 and December 1 of each year
5.150% Senior Notes	5.150%	Semi-annually in arrears on April 1 and October 1 of each year
4.000% Senior Notes	4.000%	Semi-annually in arrears on June 6 and December 6 of each year
3.900% Senior Notes	3.900%	Semi-annually in arrears on January 15 and July 15 of each year
Junior Subordinated Notes ⁽²⁾	4.900%	Semi-annually on January 15 and July 15 of each year

(2) The Junior Notes accrue interest from the date of issuance to, but excluding, January 15, 2030 (the "Par Call Date") at the fixed rate of 4.900% and from, and including, the Par Call Date, at a rate equal to the Five-Year Treasury Rate as of the Reset Interest Determination Date, plus 3.186%. Interest of the Junior Notes is payable semi-annually on January 15 and July 15 of each year, beginning on July 15, 2020.

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10. DEBT AND FINANCING ARRANGEMENTS (CONTINUED)

5.875% Senior Notes

The 5.875% Senior Notes are ranked as unsecured senior obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary. AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC under the 5.875% Senior Notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.

5.150% Senior Notes

The 5.150% Senior Notes are ranked as unsecured senior obligations of AXIS Specialty Finance PLC, a 100% owned finance subsidiary. AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance PLC under the 5.150% Senior Notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.

On April 3, 2019, AXIS Capital and AXIS Specialty Finance PLC entered into a first supplemental indenture (the "First Supplemental Indenture") among AXIS Specialty Finance PLC, as issuer, AXIS Capital, as guarantor, and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"), to the senior indenture (the "Indenture") relating to the 5.150% Senior Notes.

The changes were made to permit the 5.150% Senior Notes to qualify as Tier 3 ancillary capital under eligible capital requirements of the Bermuda Monetary Authority. Because this amendment does not materially adversely affect the interests of the holders of the 5.150% Senior Notes, the First Supplemental Indenture was entered into without consent of any holders of the 5.150% Senior Notes. The First Supplemental Indenture relates to the 5.150% Senior Notes only and does not affect any other series of securities issued under the Indenture.

4.000% Senior Notes

The 4.000% Senior Notes are ranked as unsecured senior obligations of AXIS Specialty Finance PLC, a 100% owned finance subsidiary. AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance PLC under the 4.000% Senior Notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.

3.900% Senior Notes

The 3.900% Senior Notes are ranked as unsecured senior obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary. AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC under the 3.900% Senior Notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.

The Company has the option to redeem the Senior Notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price, which is equal to the greater of the aggregate principal amount or the sum of the present values of the remaining scheduled payments of principal and interest. The related indentures contain various covenants, including limitations on liens on the stock of restricted subsidiaries, restrictions as to the disposition of the stock of restricted subsidiaries and limitations on mergers and consolidations. The Company was in compliance with all the covenants contained in the indentures at December 31, 2019.

Interest expense recognized in relation to the Senior Notes includes interest payable, amortization of the offering discounts and amortization of debt offering expenses. The offering discounts and debt offering expenses are amortized over the period of time during which the Senior Notes are outstanding. For the year ended December 31, 2019, the Company incurred interest expense of \$67 million (2018: \$64 million, 2017: \$51 million).

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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10. DEBT AND FINANCING ARRANGEMENTS (CONTINUED)

Junior Subordinated Notes

The 4.900% Fixed-Rate Reset Junior Notes are ranked as unsecured junior subordinated obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary. AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC under the Junior Notes. AXIS Capital's obligation under this guarantee is an unsecured junior subordinated obligation and ranks equally with all future unsecured and junior subordinated obligations of AXIS Capital, and junior in right of payment to all outstanding and future senior obligations of AXIS Capital.

Interest expense recognized in relation to the Junior Notes includes interest payable and amortization of debt offering expenses. The debt offering expenses are amortized over the period of time during which the Junior Notes are outstanding. For the year ended December 31, 2019, the Company incurred interest expense of \$1 million.

Dekania Notes

On June 30, 2004, Novae issued \$15 million aggregate principal amount of LIBOR plus 3.50% subordinated unsecured notes (the "\$15 million Dekania Notes") and \$11 million aggregate principal amount of LIBOR plus 4.05% subordinated unsecured notes (the "\$11 million Dekania Notes"). On September 29, 2004, Novae issued \$10 million aggregate principal amount of LIBOR + 3.50% subordinated notes (the "\$10 million Dekania Notes" and together with the "\$15 million Dekania Notes" and the "\$11 million Dekania Notes" the "Dekania Notes"). The net proceeds of the issuance, after consideration of the offering discount and underwriting expenses and commissions, totaled approximately \$35 million. Interest on the Dekania Notes was payable quarterly in arrears on February 15, May 15, August 15 and November 15 of each year. On November 15, 2018, the Company fully redeemed the Dekania Notes at par.

Interest expense recognized in relation to the Dekania Notes included interest payable, amortization of the offering discounts and amortization of debt offering expenses. The offering discounts and debt offering expenses were amortized over the period of time during which the Dekania Notes were outstanding. For the year ended December 31, 2018, the Company incurred interest expense of \$2 million (2017: \$2 million).

Scheduled Debt Maturity

The following table provides the scheduled maturity of the Company's debt obligations at December 31, 2019:

Year ended December 31,	
2020	\$ 500,000
2021	—
2022	—
2023	—
2024	—
After 2024	1,325,000
Unamortized discount and debt issuance expenses	(16,843)
Total senior notes and notes payable	\$ 1,808,157

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10. DEBT AND FINANCING ARRANGEMENTS (CONTINUED)

b) Letter of Credit Facility

On November 20, 2013, certain of AXIS Capital's operating subsidiaries (the "Participating Subsidiaries") entered into an amendment to extend the term of the Company's secured \$750 million letter of credit facility (the "\$750 million Facility") with Citibank Europe plc ("Citibank") pursuant to a Master Reimbursement Agreement and other ancillary documents (together, the "LOC Facility Documents"). Under the terms of the \$750 million Facility, letters of credit to a maximum aggregate amount of \$750 million are available for issuance on behalf of the Participating Subsidiaries. These letters of credit are principally used to support the reinsurance obligations of the Participating Subsidiaries. The \$750 million Facility is subject to certain covenants, including the requirement to maintain sufficient collateral, as defined in the LOC Facility Documents to cover all of the obligations under the \$750 million Facility. Such obligations include contingent reimbursement obligations for outstanding letters of credit and fees payable to Citibank. In the event of default, Citibank may exercise certain remedies, including the exercise of control over pledged collateral and the termination of the availability of the \$750 million Facility to any or all of the Participating Subsidiaries.

On March 31, 2015, the Participating Subsidiaries entered into an amendment to reduce the maximum aggregate utilization capacity of the \$750 million Facility to \$500 million (the "\$500 million Facility"). All other material terms and conditions remained unchanged.

On March 27, 2017, the Participating Subsidiaries amended their existing \$500 million Facility to include an additional \$250 million of secured letter of credit capacity (the "\$250 million Facility") pursuant to a Committed Facility Letter and an amendment to the Master Reimbursement Agreement. Under the terms of the \$250 million Facility, letters of credit to a maximum aggregate amount of \$250 million are available for issuance on behalf of the Participating Subsidiaries once the \$500 million Facility has been fully utilized.

On March 28, 2019, the expiration date of the \$250 million Facility was extended to March 31, 2020.

On December 24, 2019, the expiration date of the \$500 million Facility was extended to December 31, 2023.

At December 31, 2019, letters of credit outstanding under the LOC Facility were \$357 million (2018: \$395 million). At December 31, 2019, the Participating Subsidiaries were in compliance with all LOC Facility covenants.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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11. COMMITMENTS AND CONTINGENCIES

a) Concentrations of Credit Risk

Credit Risk Aggregation

The Company monitors and manages the aggregation of credit risk on a group-wide basis allowing it to consider exposure management strategies for individual companies, countries, regions, sectors and any other relevant inter-dependencies. The Company's credit exposures are aggregated based on the origin of risk. As part of its credit aggregation framework, the Company also assigns aggregate credit limits by single counterparty (a group of companies or country). These limits are based on and adjusted for a variety of factors including the prevailing economic environment and the nature of the underlying credit exposures. The Company's credit aggregation measurement and reporting process is facilitated by its credit risk exposure database, which contains relevant information on counterparty details and credit risk exposures. The Company also licenses third-party tools to provide credit risk assessments.

Credit risk aggregation is also managed through minimizing overlaps in underwriting, financing and investing activities.

The assets that potentially subject the Company to concentrations of credit risk consist principally of cash and investments, reinsurance recoverable on unpaid and paid claims and insurance and reinsurance premiums balances receivable, as described below:

(i) Cash and Investments

In order to mitigate concentration and operational risks related to cash and cash equivalents, the Company limits the maximum amount of cash that can be deposited with a single counterparty and limits acceptable counterparties based on current rating, outlook and other relevant factors.

The Company's investment portfolio is managed by external investment managers in accordance with its investment guidelines. The Company limits credit risk through diversification, issuer exposure limits graded by ratings and, with respect to custodians, through contractual and other legal remedies. Excluding U.S. government and agency securities, the Company limits its concentration of credit risk to any single corporate issuer to 2% or less of its investment grade fixed maturities portfolio for securities rated A- or above and 1% or less of its investment grade fixed maturities portfolio for securities rated below A-.

At December 31, 2019, the Company was in compliance with these limits.

(ii) Reinsurance Recoverable on Unpaid and Paid Losses and Loss Expenses

The Company is exposed to the credit risk associated with reinsurance recoverable on unpaid and paid losses and loss expenses to the extent that any of its reinsurers fail to meet their obligations under reinsurance contracts. To help mitigate this risk, the Company's purchase of reinsurance is subject to financial security requirements specified by its Reinsurance Security Committee. This Committee maintains a list of approved reinsurers, performs credit risk assessments for potential new reinsurers, regularly monitors approved reinsurers with consideration for events which may have a material impact on their creditworthiness, recommends counterparty tolerance levels for different types of ceded business and monitors concentrations of credit risk. This assessment considers a wide range of individual attributes, including a review of the counterparty's financial strength, industry position and other qualitative factors. Generally, the Committee requires that reinsurers who do not meet specified requirements provide collateral.

At December 31, 2019, the three largest balances by reinsurer accounted for 12%, 10% and 9% (2018: 13%, 10% and 10%) of reinsurance recoverable on unpaid and paid losses and loss expenses.

At December 31, 2019, 89.1% (December 31, 2018: 89.5%) of the Company's reinsurance recoverable on unpaid and paid losses and loss expenses, net of collateral were collectible from reinsurers rated the equivalent of A- or better by A.M. Best.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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11. COMMITMENTS AND CONTINGENCIES (CONTINUED)

(iii) Insurance and Reinsurance Premium Balances Receivable

The diversity of the Company's client base limits the credit risk associated with its insurance and reinsurance premium balances receivable. In addition, for insurance contracts the Company has contractual rights to cancel cover for non-payment of premiums and for reinsurance contracts the Company has contractual rights to offset premium balances receivable against corresponding payments for losses and loss expenses.

Brokers and other intermediaries collect premiums from customers on behalf of the Company. The Company has procedures in place to manage and monitor credit risk from intermediaries with a focus on day-to-day monitoring of the largest positions.

These contractual rights contribute to the mitigation of credit risk, together with the monitoring of aged premium balances receivable. In light of these mitigating factors and considering that a significant portion of premium balances receivable are not currently due based on the terms of the underlying contracts, the Company does not utilize specific credit quality indicators to monitor its premium balances receivable.

At December 31, 2019, the Company recorded an allowance for estimated uncollectible premium balances receivable of \$7 million (2018: \$4 million).

For the year ended December 31, 2019, bad debt expense was \$nil (2018: \$nil; 2017: \$nil).

b) Brokers

The Company produces its business through brokers and direct relationships with insurance companies. For the year ended December 31, 2019, three brokers accounted for 47% (2018: 43%; 2017: 49%) of gross premiums written.

Marsh & McLennan Companies Inc. accounted for 18% (2018: 17%; 2017: 20%), Aon plc accounted for 19% (2018: 17%; 2017: 17%), and Willis Tower Watson PLC accounted for 10% (2018: 9%; 2017: 12%).

No other broker and no single insured or reinsured accounted for more than 10% of gross premiums written in any of the last three years.

c) Reinsurance Purchase Commitment

In the normal course of business, the Company purchases reinsurance and retrocessional (collectively referred to as "reinsurance") protection for its insurance and reinsurance business. Minimum reinsurance premiums are contractually due in advance on a quarterly basis. At December 31, 2019, the Company had outstanding reinsurance purchase commitments of \$57 million (2018: \$39 million), all of which is due before June 30, 2023. Actual payments under the reinsurance contracts will depend on the underlying subject premium and may exceed the minimum reinsurance premiums.

d) Legal Proceedings

From time to time, the Company is subject to routine legal proceedings, including arbitrations, arising in the ordinary course of business. These legal proceedings generally relate to claims asserted by or against the Company in the ordinary course of its insurance or reinsurance operations. Estimated amounts payable related to these proceedings are included in reserve for losses and loss expenses in the Company's consolidated balance sheets.

The Company is not party to any material legal proceedings arising outside the ordinary course of business.

e) Investments

At December 31, 2019 the Company has \$588 million (2018: \$507 million) of unfunded investment commitments related to its other investment portfolio, which are callable by investment managers (refer to Note 5(c) 'Investments'). At December 31, 2019 the Company has \$32 million (2018: \$4 million) of unfunded investment commitments to purchase commercial mortgage loans.

AXIS CAPITAL HOLDINGS LIMITED
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11. COMMITMENTS AND CONTINGENCIES (CONTINUED)

f) Funds at Lloyd's

The Company operates in the Lloyd's market through its corporate members, AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited, which provide 70% and 30%, respectively of Syndicate 1686's capital support. AXIS Corporate Capital UK II Limited is the sole corporate member of Syndicate 2007. Lloyd's sets capital requirements for corporate members annually through the application of a capital model that is based on regulatory rules pursuant to Solvency II.

The capital provided to support underwriting or FAL may be satisfied by cash, certain investments and letters of credit provided by approved banks.

At December 31, 2019, investments and cash of \$1.3 billion (2018: \$1.3 billion) were restricted to satisfy the Company's FAL requirements (refer to Note 5 '*Investments*' and Note 21 '*Statutory Financial Information*').

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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12. LEASES

In the ordinary course of business, the Company renews and enters into new leases for office property and equipment, which expire at various dates.

At the lease inception date, the Company assesses whether a contract is or contains a lease. At the commencement date, the Company determines the classification of each separate lease component as either a finance lease or an operating lease. The Company's leases are all currently classified as operating leases. For operating leases that have a lease term of more than 12 months, the Company recognizes a lease liability and a right-of-use asset in the Company's consolidated balance sheets at the present value of the lease payments at the lease commencement date.

At the commencement date, the Company determines lease terms by assuming the exercise of those renewal options that are deemed to be reasonably certain. The exercise of lease renewal options is at the sole discretion of the Company.

As the lease contracts generally do not provide an implicit discount rate, the Company uses its incremental borrowing rate based on the information available at commencement date to determine the present value of lease payments. The incremental borrowing rate is based on a borrowing with a term that is similar to the term of the associated lease. The Company has made an accounting policy election not to include renewal, termination, or purchase options that are not reasonably certain of exercise when determining the term of the borrowing.

The Company's lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Operating lease rentals are expensed on a straight-line basis over the life of the lease beginning on the commencement date. For the year ended December 31, 2019, the total lease expense was \$28 million.

The following table presents the Company's total lease expense and the cash flows arising from lease transactions:

	Year ended December 31, 2019
Lease cost:	
Operating lease expense	\$ 27,549
Short-term lease expense ⁽¹⁾	1,132
Sublease income ⁽²⁾	(1,144)
Total lease expense	\$ 27,537
Other information:	
Operating cash outflows from operating leases	\$ 25,004
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ —
Weighted-average remaining lease term - operating leases ⁽³⁾	9.0 years
Weighted-average discount rate - operating lease ⁽⁴⁾	4.7 %

(1) Short-term lease expense is recognized on a straight-line basis over the lease term.

(2) Sublease income largely relates to office property in London, England.

(3) Weighted-average remaining lease term was calculated on the basis of the remaining lease term and the lease liability balance for each lease at the reporting date.

(4) Weighted-average discount was calculated on the basis of the discount rate for the lease that was used to calculate the lease liability balance for each lease at the reporting date and the remaining balance of the lease payments for each lease at the reporting date.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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12. LEASES (CONTINUED)

The following table presents the scheduled maturity of the Company's operating lease liabilities at December 31, 2019:

Year ended December 31,	Expected Cash Flows
2020	\$ 19,225
2021	19,129
2022	20,049
2023	16,641
2024	11,006
Later years	58,562
Discount	(29,028)
Total discounted operating lease liabilities	\$ 115,584

The Company's lease for its office property in Alpharetta, Georgia, which expired on December 31, 2019 was extended to January 31, 2020. The Company executed a 15 year lease for a new office property in Alpharetta, Georgia. The Company was not involved in the construction or design of this office property and the commencement date of the lease is February 1, 2020. Given that the commencement date is after the balance sheet date, the Company has not reflected this lease in the maturity table above or in the Company's consolidated balance sheets at December 31, 2019. The total contractual lease costs over the 15 year lease is \$40 million.

The following table presents the Company's future minimum lease payments at December 31, 2018:

Year ended December 31,	
2019	\$ 28,240
2020	25,331
2021	27,025
2022	28,012
2023	23,801
Later years	118,497
Total future minimum lease payments	\$ 250,906

For the year ended December 31, 2018, the total lease expense was \$33 million (2017: \$29 million).

AXIS CAPITAL HOLDINGS LIMITED
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13. EARNINGS PER COMMON SHARE

The following table presents a comparison of earnings (loss) per common share and earnings (loss) per diluted common share:

At and year ended December 31,	2019	2018	2017
Earnings (loss) per common share			
Net income (loss)	\$ 323,473	\$ 43,021	\$ (368,969)
Less: Preferred share dividends	41,112	42,625	46,810
Net income (loss) available (attributable) to common shareholders	<u>\$ 282,361</u>	<u>\$ 396</u>	<u>\$ (415,779)</u>
Weighted average common shares outstanding	<u>83,894</u>	<u>83,501</u>	<u>84,108</u>
Earnings (loss) per common share	<u><u>\$ 3.37</u></u>	<u><u>\$ —</u></u>	<u><u>\$ (4.94)</u></u>
Earnings (loss) per diluted common share			
Net income (loss) available (attributable) to common shareholders	<u>\$ 282,361</u>	<u>\$ 396</u>	<u>\$ (415,779)</u>
Weighted average common shares outstanding	<u>83,894</u>	<u>83,501</u>	<u>84,108</u>
Share-based compensation plans ⁽¹⁾	<u>579</u>	<u>506</u>	<u>—</u>
Weighted average diluted common shares outstanding ⁽¹⁾	<u>84,473</u>	<u>84,007</u>	<u>84,108</u>
Earnings (loss) per diluted common share	<u><u>\$ 3.34</u></u>	<u><u>\$ —</u></u>	<u><u>\$ (4.94)</u></u>
Weighted average anti-dilutive shares excluded from the dilutive computation	<u>154</u>	<u>245</u>	<u>702</u>

(1) Due to the net loss recognized for the year ended December 31, 2017, the share equivalents were anti-dilutive.

AXIS CAPITAL HOLDINGS LIMITED
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14. SHAREHOLDERS' EQUITY

a) Common Shares

The Company's authorized share capital is 800,000,000 common shares, par value of \$0.0125 per share.

The following table presents changes in common shares issued and outstanding:

Year ended December 31,	2019	2018	2017
Shares issued, balance at beginning of year	176,580	176,580	176,580
Shares issued	—	—	—
Total shares issued at end of year	176,580	176,580	176,580
Treasury shares, balance at beginning of year	(92,994)	(93,419)	(90,139)
Shares repurchased	(176)	(200)	(4,288)
Shares reissued	549	625	1,008
Total treasury shares at end of year	(92,621)	(92,994)	(93,419)
Total shares outstanding	83,959	83,586	83,161

Treasury Shares

On July 5, 2017, the Company and the board of directors of Novae announced that it had agreed on terms of a recommended offer to be made by the Company to acquire the entire issued and to be issued share capital of Novae. Following the offer, the Company suspended its open market share repurchase plan.

On December 31, 2017, authorization under the Board-authorized share repurchase plan for common share repurchases through 2017 expired. A common share repurchase plan has not been authorized since that date.

The following table presents common shares repurchased from shares held in Treasury:

Year ended December 31,	2019	2018	2017
In the open market:			
Total shares	—	—	3,932
Total cost	\$ —	\$ —	\$ 261,180
Average price per share ⁽¹⁾	\$ —	\$ —	\$ 66.43
From employees:⁽²⁾			
Total shares	176	200	356
Total cost	\$ 10,165	\$ 10,080	\$ 24,678
Average price per share ⁽¹⁾	\$ 57.66	\$ 50.40	\$ 69.36
Total shares repurchased:			
Total shares	176	200	4,288
Total cost	\$ 10,165	\$ 10,080	\$ 285,858
Average price per share ⁽¹⁾	\$ 57.66	\$ 50.40	\$ 66.67

(1) Calculated using whole numbers.

(2) Shares are repurchased from employees to satisfy withholding tax liabilities that arise on the vesting of share-settled restricted stock units.

AXIS CAPITAL HOLDINGS LIMITED
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14. SHAREHOLDERS' EQUITY (CONTINUED)

b) Preferred Shares

Series C Preferred Shares

On March 19, 2012, the Company issued \$400 million of 6.875% Series C preferred shares, par value \$0.0125 per share, with a liquidation preference of \$25.00 per share. The Company could redeem the Series C preferred shares on or after April 15, 2017 at a redemption price of \$25.00 per share. Dividends on the Series C preferred shares were non-cumulative. Holders of the Series C preferred shares were entitled to receive, only when, as and if declared by the board of directors, non-cumulative cash dividends, from the original issue date, quarterly in arrears on the fifteenth day of January, April, July and October of each year, commencing on July 15, 2012. To the extent declared, these dividends accumulated, with respect to each dividend period, in an amount per share equal to 6.875% of the liquidation preference per annum.

During October and November 2016, the Company repurchased 1,957,045 Series C preferred shares at an average purchase price of \$25.67 per share for \$50 million. In connection with the repurchase of these shares, a loss on redemption of \$1 million, was recognized in determining net income available to common shareholders.

On April 17, 2017, the Company redeemed the remaining 14,042,955 Series C preferred shares, for an aggregate liquidation preference of \$351 million.

Series D Preferred Shares

On May 20, 2013, the Company issued \$225 million of 5.50% Series D preferred shares, par value \$0.0125 per share, with a liquidation preference of \$25.00 per share. The Company could redeem the Series D preferred shares on or after June 1, 2018 at a redemption price of \$25.00 per share. Dividends on the Series D preferred shares were non-cumulative. Holders of the Series D preferred shares were entitled to receive, only when, as and if declared by the board of directors, non-cumulative cash dividends from the original issue date, quarterly in arrears on the first day of March, June, September and December of each year, commencing on September 1, 2013. To the extent declared, these dividends accumulated, with respect to each dividend period, in an amount per share equal to 5.50% of the liquidation preference per annum.

On January 17, 2020, the Company redeemed all 9,000,000 Series D preferred shares, for an aggregate liquidation preference of \$225 million (refer to Note 23 'Subsequent Events').

Series E Preferred Shares

On November 7, 2016, the Company issued \$550 million of 5.50% Series E preferred shares, par value \$0.0125 per share, with a liquidation preference of \$2,500 per share. The Company may redeem the Series E preferred shares on or after November 7, 2021 at a redemption price of \$2,500 per share. Dividends on the Series E preferred shares are non-cumulative. Holders of the Series E preferred shares will be entitled to receive, only when, as and if declared by the board of directors, non-cumulative cash dividends from the original issue date, quarterly in arrears on the fifteenth day of January, April, July and October of each year, commencing on January 15, 2017. To the extent declared, these dividends will accumulate, with respect to each dividend period, in an amount per share equal to 5.50% of the liquidation preference per annum.

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14. SHAREHOLDERS' EQUITY (CONTINUED)

Dividends

The following table presents dividends declared and paid related to the Company's common and preferred shares:

	Per share data		
	Dividends declared	Dividends paid in year of declaration	Dividends paid in year following declaration
Year ended December 31, 2017			
Common shares	\$ 1.53	\$ 1.14	\$ 0.39
Series C preferred shares	\$ 0.43	\$ 0.43	\$ —
Series D preferred shares	\$ 1.38	\$ 1.03	\$ 0.34
Series E preferred shares	\$ 137.50	\$ 103.13	\$ 34.38
Year ended December 31, 2018			
Common shares	\$ 1.57	\$ 1.17	\$ 0.40
Series D preferred shares	\$ 1.38	\$ 1.03	\$ 0.34
Series E preferred shares	\$ 137.50	\$ 103.13	\$ 34.38
Year ended December 31, 2019			
Common shares	\$ 1.61	\$ 1.20	\$ 0.41
Series D preferred shares	\$ 1.21	\$ 1.03	\$ 0.18
Series E preferred shares	\$ 137.50	\$ 103.13	\$ 34.38

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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15. RETIREMENT PLANS

The Company maintains defined contribution plans to provide retirement benefits to eligible employees. Contributions to the plans, which are managed externally, are based on eligible compensation.

For eligible U.S. employees, the Company provides a non-qualified deferred compensation plan that enables employees to make contributions to the plan that are in excess of those permitted under the Company's 401(k) Plan. In addition, employees are permitted to make additional contributions from any bonus received and to benefit from discretionary employer contribution to the Plan.

During 2019, total pension expenses were \$28 million (2018: \$27 million and 2017: \$24 million) for the above retirement benefits.

16. SHARE-BASED COMPENSATION

In May 2017, shareholders approved the establishment of the AXIS Capital Holdings Limited 2017 Long-Term Equity Compensation Plan (the "2017 Plan"). The 2017 Plan provides for, among other things, the issuance of restricted shares, restricted stock units (share-settled awards and cash-settled awards), performance units (share-settled awards and cash-settled awards), stock options, stock appreciation rights and other equity-based awards to the Company's employees and directors. The 2017 Plan authorizes the issuance of a total of 3,400,000 common shares. The Company's 2017 Plan replaced its 2007 Long-Term Equity Compensation Plan ("2007 Plan") on expiration of the 2007 Plan in May 2017. All remaining shares available pursuant to the 2007 Plan have been canceled although awards made pursuant to the 2007 Plan prior to its expiration remain in effect in accordance with the terms of the 2007 Plan. At December 31, 2019, 2,565,143 equity-based awards remained available for grant pursuant to the 2017 Plan. The grant date fair value of each award is established at the fair market value of the Company's common shares at the date of grant.

Restricted Shares

Restricted shares granted pursuant to the 2007 Plan generally vest in accordance with a four year graded vesting schedule in four annual installments beginning on the grant date.

Restricted Stock Units - Share-Settled

Share-settled restricted stock units granted pursuant to the 2017 Plan or the 2007 Plan either cliff vest at the end of a three year period, vest in accordance with a three year graded vesting schedule, or vest in accordance with a four year graded vesting schedule in four annual installments beginning on the grant date.

Restricted Stock Units - Cash-Settled

Cash-settled restricted stock units granted pursuant to the 2017 Plan or the 2007 Plan are liability awards and generally cliff vest at the end of a three year period, or vest in accordance with a four year graded vesting schedule in four annual installments beginning on the grant date.

Performance Restricted Stock Units - Share-Settled and Cash-Settled

Performance restricted stock units granted pursuant to the 2017 Plan or the 2007 Plan, represent the right to receive a specified number of common shares in the future, based on the achievement of established performance criteria and continued service during the applicable performance period. Awards granted pursuant to these plans generally cliff vest at the end of a three year period. Compensation expense is recognized on a straight-line basis over the applicable requisite service period and is subject to periodic adjustment based on the achievement of established performance criteria during the applicable performance period. Performance restricted stock units granted are either share-settled awards or cash-settled liability awards.

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16. SHARE-BASED COMPENSATION (CONTINUED)

Acceleration Provisions

Grants provided under the 2017 Plan and the 2007 Plan generally allow for accelerated vesting provisions on the employee's death, permanent disability, or certain terminations following a change in control of the Company occurring within two years of the change in control event. Notwithstanding these vesting provisions, the Compensation Committee of the Company's Board has broad authority to accelerate vesting at its discretion.

Retirement Plan

In 2016, the Company established the AXIS Executive Restricted Stock Unit Retirement Plan (the "Plan") to reward certain eligible long-term employees of the Company for their dedicated service. The Plan was implemented in 2017. Subject to certain conditions being met, eligible employees will not forfeit all of their outstanding share-settled restricted stock units or cash-settled restricted stock units on or following their retirement. Absent the Plan, outstanding restricted stock units are generally forfeited on termination of employment.

a) Share-Settled Awards

The following table provides an activity summary of the Company's share-settled restricted stock units:

	Share-Settled Performance Restricted Stock Units		Share-Settled Service Restricted Stock Units	
	Number of restricted stock units	Weighted average grant date fair value ⁽¹⁾	Number of restricted stock units	Weighted average grant date fair value ⁽¹⁾
Nonvested restricted stock units - December 31, 2017	230	\$ 57.08	1,355	\$ 57.09
Granted	104	48.89	737	49.36
Vested	(87)	54.71	(539)	54.51
Forfeited	(15)	53.80	(142)	55.36
Nonvested restricted stock units - December 31, 2018	232	54.54	1,411	54.12
Granted	127	54.70	523	54.88
Vested	(61)	53.82	(487)	54.29
Forfeited	(40)	64.01	(174)	54.49
Nonvested restricted stock units - December 31, 2019	258	\$ 53.31	1,273	\$ 54.32

(1) Fair value is based on the closing price of the Company's common shares on the grant date.

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16. SHARE-BASED COMPENSATION (CONTINUED)

b) Cash-Settled Awards

The following table provides an activity summary of the Company's cash-settled restricted stock units:

	Cash-Settled Performance Restricted Stock Units	Cash-Settled Service Restricted Stock Units
	Number of restricted stock units	Number of restricted stock units
Nonvested restricted stock units - December 31, 2017	42	988
Granted	—	473
Vested	(12)	(390)
Forfeited	(3)	(139)
Nonvested restricted stock units - December 31, 2018	27	932
Granted	—	364
Vested	(12)	(333)
Forfeited	(9)	(110)
Nonvested restricted stock units - December 31, 2019	6	853

The following table provides additional information related to share-based compensation:

Year ended December 31,	2019	2018	2017
Share-based compensation expense ⁽¹⁾	\$ 52,218	\$ 54,011	\$ 67,697
Tax benefits associated with share-based compensation expense	\$ 8,913	\$ 7,772	\$ 14,937
Liability for cash-settled restricted stock units ⁽²⁾	\$ 21,731	\$ 20,648	\$ 21,535
Fair value of restricted stock units vested ⁽³⁾⁽⁴⁾	\$ 51,206	\$ 50,750	\$ 124,990
Unrecognized share-based compensation expense	\$ 75,770	\$ 87,341	\$ 94,315
Expected weighted average period to recognize unrecognized share-based compensation expense	2.3 years	2.4 years	2.5 years

(1) Related to restricted shares, share-settled stock units, and cash settled restricted stock units.

(2) Included in other liabilities in the consolidated balance sheets.

(3) Fair value is based on the closing price of the Company's common shares on the vest date.

(4) The fair value of share-settled restricted stock units and cash-settled restricted stock units that vested in 2017 included \$44 million attributable to service restricted stock units which were granted in 2014 and were subject to a three year cliff vesting period.

17. RELATED PARTY TRANSACTIONS

A member of the Company's Board of Directors, Mr. Charles Davis, is the Chief Executive Officer of Stone Point Capital, LLC ("Stone Point"). In the ordinary course of business, the Company engages SKY Harbor Capital Management, LLC, an affiliate of Stone Point, to provide asset management services for certain short duration high yield debt portfolios. For the year ended December 31, 2019, total fees paid to SKY Harbor Capital Management, LLC, were \$3 million (2018: \$2 million; 2017: \$2 million).

The Company has invested \$11 million in NXT Capital Senior Loan Fund II, LP and \$19 million in NXT Capital Senior Loan Fund III, LP. The manager of these funds is an indirect subsidiary of NXT Capital Inc. ("NXT Capital"). Investment funds managed by Stone Point indirectly owned approximately 43% of NXT Capital until this ownership interest was sold in August 2018. For the year ended December 31, 2018, fees paid to NXT Capital were \$1 million (2017: \$1 million).

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17. RELATED PARTY TRANSACTIONS (CONTINUED)

In addition, the Company has invested \$52 million in the Freedom Consumer Credit Fund, LLC - Series B. The manager of this fund is Freedom Financial Asset Management, LLC ("Freedom") which is an indirect subsidiary of Pantheon Partners, LLC ("Pantheon"). Investment funds managed by Stone Point own approximately 14.5% of Pantheon. For the year ended December 31, 2019, fees paid to Freedom were \$3 million (2018: \$2 million; 2017: \$1 million).

At December 31, 2019, the Company has committed to invest \$71 million in Stone Point's private equity fund, Trident VIII L.P. ("Trident VIII"), For the year ended December 31, 2019, the Company has not paid any fees to Stone Point in relation to Trident VIII.

The Company's Chairman, Mr. Butt received consulting fees for the year ended December 31, 2019 of \$0.4 million (2018: \$0.5 million; 2017: \$0.5 million) pursuant to the terms of a consulting agreement by and between Mr. Butt and the Company dated May 3, 2012, as amended, most recently on July 18, 2019 to extend the term of the agreement to December 31, 2020.

The Company's investment portfolio includes certain investments where it is considered to have the ability to exercise significant influence over the operating and financial policies of the investee. Significant influence is generally deemed to exist where the Company has an investment of 20% or more in the common stock of a corporation or an investment greater than 3% to 5% in closed end funds, limited partnerships, LLCs or similar investment vehicles. At December 31, 2019, the Company has \$410 million (2018: \$450 million) of investments where it is deemed to have the ability to exercise such significant influence. The Company generally pays management and performance fees to the investment managers of these investments. The Company considers all fees paid to the investment managers to be at market rates consistent with negotiated arms-length contracts.

Harrington and Harrington Re commenced operations in 2016 (refer to Note 5 '*Investments*'). The Company has the ability to exercise significant influence over the operating and financial policies of Harrington and Harrington Re. In the normal course of business, the Company entered into certain reinsurance transactions with Harrington Re. For the year ended December 31, 2019, the Company ceded reinsurance premiums of \$247 million (2018: \$194 million; 2017: \$213 million) and ceded losses of \$157 million (2018: \$142 million; 2017: \$119 million) to Harrington Re. In addition, Harrington Re paid certain acquisition costs and administrative fees to the Company. At December 31, 2019, the amount of reinsurance recoverable on unpaid and paid losses was \$518 million (2018: \$363 million) and the amount of ceded reinsurance payable included in insurance and reinsurance balances payable was \$159 million (2018: \$115 million) in the consolidated balance sheets. All transactions were conducted at market rates consistent with negotiated arms-length contracts.

On November 5, 2013, the Company formed AXIS Ventures Reinsurance Limited ("Ventures Re"), a Bermuda domiciled insurer. With effect from January 1, 2015, Ventures Re is no longer consolidated in the financial statements of the Company. All of Ventures Re's directors are employees of the Company. In the normal course of business, the Company enters into certain reinsurance contracts with Ventures Re. For the year ended December 31, 2019, the Company ceded premiums of \$192 million (2018: \$182 million; 2017: \$107 million) and ceded losses of \$140 million (2018: \$138 million; 2017: \$126 million) to Ventures Re. In addition, Ventures Re paid certain acquisition costs and administrative fees to the Company. At December 31, 2019, the amount of reinsurance recoverable on unpaid and paid losses was \$199 million (2018: \$186 million) and the amount of ceded reinsurance payable included in insurance and reinsurance balances payable was \$46 million (2018: \$67 million) in the consolidated balance sheets. All transactions were conducted at market rates consistent with negotiated arms-length contracts.

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18. TRANSACTION AND REORGANIZATION EXPENSES

For the year ended December 31, 2019, reorganization expenses were \$37 million (2018: \$67 million), respectively, related to the Company's transformation program which was launched in 2017. This program encompasses the integration of Novae which commenced in the fourth quarter of 2017, the realignment of the Company's accident and health business, together with other initiatives designed to increase efficiency and enhance profitability while delivering a customer-centric operating model.

For the year ended December 31, 2017, transaction and reorganization expenses were \$27 million which included transaction costs incurred in connection with the acquisition of Novae, such as due diligence, legal, accounting, investment banking fees and expenses, as well as integration expenses related to the integration of Novae into the Company's operations and compensation-related costs associated with the termination of certain employees.

19. INCOME TAXES

Under current Bermuda law, AXIS Capital's Bermuda domiciled subsidiaries are not required to pay any taxes in Bermuda on income or capital gains. The Company has received an assurance from the Minister of Finance in Bermuda that, in the event of any taxes being imposed, it will be exempt from taxation in Bermuda until March 2035. The Company's primary Bermuda subsidiary has an operating branch in Singapore, which is subject to the relevant taxes in that jurisdiction. The Singapore branch is not under examination in that tax jurisdiction but remains subject to examination for tax years 2016 through 2019.

AXIS Capital's U.S. subsidiaries are subject to federal, state and local corporate income taxes, and other taxes applicable to U.S. corporations. The provision for federal income taxes has been determined under the principles of the consolidated tax provisions of the U.S. Internal Revenue Code and regulations. Should the U.S. subsidiaries pay a dividend outside the U.S. group, withholding taxes will apply. The Company's U.S. subsidiaries are not under examination but remain subject to examination for tax years 2016 through 2019.

In Canada, AXIS Capital's U.S. reinsurance company operates through a branch and its U.S. service company has an unlimited liability company subsidiary based in Canada. The Canadian operations are subject to the relevant taxes in that jurisdiction and remain subject to examination for tax years 2015 through 2019.

AXIS Capital had subsidiaries in Ireland, the U.K., Australia, Belgium, Luxembourg, Brazil and Dubai in 2018 and 2017. The Company ceased operations in Australia in 2017. Effective January 1, 2019, AXIS Capital's subsidiary in Belgium was merged into AXIS Specialty Europe. In addition, the Company ceased operations in Luxembourg in December 2019. Consequently, AXIS Capital had subsidiaries in Ireland, the U.K., Brazil and Dubai in 2019. AXIS Capital's Irish operations had branches in the U.K. and Switzerland in 2018 and 2017. Effective January 1, 2019, following the merger of AXIS Specialty Europe and Aviabel SA., AXIS Capital also has branches in Belgium and the Netherlands. Except for Ireland, with respect to a 2016 and 2017 revenue audit, these subsidiaries and their branches are not under examination, but remain subject to examination in all applicable jurisdictions for tax years 2015 through 2019.

In the U.K., the Company operates through Lloyd's syndicates whose income is subject to tax in the U.K., payable by its corporate members. The income from operations at Lloyd's is also subject to taxes in other jurisdictions in which Lloyd's operates, including the U.S. Under a Closing Agreement between Lloyd's and the IRS, Lloyd's corporate members pay U.S. income tax on U.S. connected income written by Lloyd's syndicates. To the extent that the Lloyd's syndicates suffer taxes outside the U.K., they may claim a credit for foreign taxes suffered, limited to the U.K. equivalent tax on the same income.

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19. INCOME TAXES (CONTINUED)

The following table provides an analysis of income tax expense and net tax assets:

Year ended December 31,	2019	2018	2017
Current income tax expense (benefit)			
U.S.	\$ 12,601	\$ (5,401)	\$ (6,207)
Europe	22,425	10,409	10,249
Other	469	51	—
Deferred income tax expense (benefit)			
U.S.	17,665	15,288	18,495
Europe	(29,468)	(49,833)	(30,079)
Total income tax expense (benefit)	\$ 23,692	\$ (29,486)	\$ (7,542)
Net current tax receivables (payables)	\$ 13,130	\$ 9,683	\$ (639)
Net deferred tax assets	18,621	39,775	4,438
Net tax assets	\$ 31,751	\$ 49,458	\$ 3,799

Deferred income taxes reflect the tax impact of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. The following table provides details of the significant components of deferred tax assets and liabilities:

At December 31,	2019	2018
Deferred tax assets:		
Discounting of net reserves for losses and loss expenses	\$ 40,523	\$ 37,440
Unearned premiums	42,709	40,447
Net unrealized investments losses	—	11,438
Operating and capital loss carryforwards ⁽¹⁾	85,901	83,850
Accruals not currently deductible	29,705	32,589
Tax credits	2,956	8,672
Other deferred tax assets	14,355	9,195
Deferred tax assets before valuation allowance	216,149	223,631
Valuation allowance	(18,560)	(18,955)
Deferred tax assets net of valuation allowance	197,589	204,676
Deferred tax liabilities:		
Deferred acquisition costs	(38,320)	(39,745)
Net unrealized investments gains	(30,434)	—
Intangible assets	(44,199)	(49,097)
Equalization reserves	(2,825)	(22,069)
Other deferred tax liabilities	(63,190)	(53,990)
Deferred tax liabilities	(178,968)	(164,901)
Net deferred tax assets	\$ 18,621	\$ 39,775

(1) At December 31, 2019 and 2018, the total operating loss carryforwards includes Lloyd's deferred year of account losses of \$50 million and \$68 million, respectively.

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19. INCOME TAXES (CONTINUED)

The following table summarizes total operating and capital loss carryforwards and tax credits:

At December 31,	2019	2018
Operating and Capital Loss Carryforwards⁽¹⁾		
Singapore (branch) operating loss carryforward	\$ 103,899	\$ 79,445
U.K. operating loss carryforward ⁽²⁾	431,374	413,504
Ireland operating loss carryforward	9,064	12,756
U.S. operating loss carryforward	—	15,062
Ireland capital loss carryforward	716	716
Tax Credits⁽¹⁾		
Ireland foreign tax credit	\$ 2,092	\$ 2,248
U.S. alternative minimum tax credit	—	6,026
U.K. tax credit	864	398

(1) At December 31, 2019, all remaining operating and capital loss carryforwards and tax credits can be carried forward indefinitely.

(2) At December 31, 2019 and 2018, the U.K. operating loss carryforward includes Lloyd's deferred year of account losses of \$293 million and \$403 million, respectively.

The following table shows an analysis of the movement in the Company's valuation allowance:

At December 31,	2019	2018
Income tax expense:		
Valuation allowance - beginning of year	\$ 13,891	\$ 16,157
Operating loss carryforwards	2,445	198
Foreign tax credit	(114)	(1,359)
U.K. branch assets and other foreign rate differentials	2,338	(205)
U.S. alternative minimum tax credits	—	(900)
Valuation allowance - end of year	\$ 18,560	\$ 13,891
Accumulated other comprehensive income:		
Valuation allowance - beginning of year	5,064	—
Change in investment - related items	(5,064)	5,064
Valuation allowance - end of year	—	5,064
Total valuation allowance - end of year	\$ 18,560	\$ 18,955

At December 31, 2019 and 2018, the Company established a full valuation allowance on: (1) operating loss carryforwards relating to operations in Singapore; (2) un-utilized foreign tax credits available in Ireland and (3) certain other deferred tax assets related to branch operations. At December 31, 2019, the valuation allowance on certain unrealized investment losses was released as the Company was in an unrealized investment gain position.

Although realization is not assured, management believes it is more likely than not that the tax benefit of the recorded net deferred tax assets will be realized. In evaluating the Company's ability to recover these tax assets within the jurisdiction from which they arise, it considered all available positive and negative evidence, including historical results, operating loss carry-back potential and scheduled reversals of deferred tax liabilities. The Company believes its U.S. and U.K. operations

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19. INCOME TAXES (CONTINUED)

will produce significant taxable income in future periods and have deferred tax liabilities that will reverse in future periods, such that the Company believes sufficient ordinary taxable income is available to utilize all remaining ordinary deferred tax assets.

At December 31, 2019 and 2018, there were no unrecognized tax benefits.

The following table presents the distribution of income before income taxes between domestic and foreign jurisdictions as well as a reconciliation of the actual income tax rate to the amount computed by applying the effective tax rate of 0% under Bermuda law to income before income taxes:

Year ended December 31,	2019	2018	2017
Income (loss) before income taxes			
Bermuda (domestic)	\$ 179,418	\$ 181,597	\$ (188,420)
Foreign	167,747	(168,062)	(188,091)
Total income (loss) before income taxes	\$ 347,165	\$ 13,535	\$ (376,511)
Reconciliation of effective tax rate (% of income before income taxes)			
Expected tax rate	0.0 %	0.0 %	0.0 %
Foreign taxes at local expected rates:			
U.S.	8.1 %	65.7 %	6.6 %
Europe	0.4 %	(289.7)%	5.8 %
Other	— %	0.0 %	0.3 %
Valuation allowance	1.3 %	(13.4)%	— %
Net tax exempt income	— %	(3.3)%	0.1 %
Change in U.S. enacted tax rate	— %	0.0 %	(11.1)%
Change in European enacted tax rate	— %	16.9 %	— %
Other	(3.0)%	5.9 %	0.3 %
Actual tax rate	6.8 %	(217.9)%	2.0 %

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20. OTHER COMPREHENSIVE INCOME (LOSS)

The following table presents the tax effects allocated to each component of other comprehensive income (loss):

	Before tax amount	Income tax (expense) benefit	Net of tax amount
Year ended December 31, 2019			
Available for sale investments:			
Unrealized gains (loss) arising during the year	\$ 414,982	\$ (40,367)	\$ 374,615
Adjustment for reclassification of net realized (gains) losses and OTTI losses recognized in net income	(29,618)	4,889	(24,729)
Unrealized gains (losses) arising during the year, net of reclassification adjustment	385,364	(35,478)	349,886
Foreign currency translation adjustment	(1,066)	—	(1,066)
Total other comprehensive income (loss), net of tax	\$ 384,298	\$ (35,478)	\$ 348,820
Year ended December 31, 2018			
Available for sale investments:			
Unrealized gains (losses) arising during the year	\$ (297,259)	\$ 5,528	\$ (291,731)
Adjustment for reclassification of net realized (gains) losses and OTTI losses recognized in net income	105,730	(4,828)	100,902
Unrealized gains (losses) arising during the year, net of reclassification adjustment ⁽¹⁾	(191,529)	700	(190,829)
Foreign currency translation adjustment	(11,165)	—	(11,165)
Total other comprehensive income (loss), net of tax	\$ (202,694)	\$ 700	\$ (201,994)
Year ended December 31, 2017			
Available for sale investments:			
Unrealized gains (losses) arising during the year	\$ 211,151	\$ (5,732)	\$ 205,419
Adjustment for reclassification of net realized (gains) losses and OTTI losses recognized in net loss	(33,892)	758	(33,134)
Unrealized gains (losses) arising during the year, net of reclassification adjustment	177,259	(4,974)	172,285
Foreign currency translation adjustment	41,938	—	41,938
Total other comprehensive income (loss), net of tax	\$ 219,197	\$ (4,974)	\$ 214,223

- (1) Effective January 1, 2018, the Company adopted ASU No. 2016-01. The adoption of this guidance resulted in a cumulative adjustment to reclassify unrealized investment gains on equity securities from accumulated other comprehensive income to retained earnings. Refer to Item 8, Note 2 'Basis of Presentation and Significant Accounting Policies' to the consolidated financial statements for additional information.

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20. OTHER COMPREHENSIVE INCOME (LOSS) (CONTINUED)

The following table presents details of amounts reclassified from accumulated other comprehensive income ("AOCI") to net income (loss):

AOCI components	Consolidated statement of operations line item that includes reclassification adjustment	Amounts reclassified from AOCI ⁽¹⁾		
		Years ended December 31,		
		2019	2018	2017
Unrealized gains (losses) on available for sale investments				
	Other realized gains (losses)	\$ 36,602	\$ (95,997)	\$ 48,385
	OTTI losses	(6,984)	(9,733)	(14,493)
	Total before tax	29,618	(105,730)	33,892
	Income tax (expense) benefit	(4,889)	4,828	(758)
	Net of tax	<u>\$ 24,729</u>	<u>\$ (100,902)</u>	<u>\$ 33,134</u>
Foreign currency translation adjustments				
	Foreign exchange gains (losses)	\$ 6,043	\$ —	\$ (24,149)
	Income tax (expense) benefit	—	—	—
	Net of tax	<u>\$ 6,043</u>	<u>\$ —</u>	<u>\$ (24,149)</u>

(1) Amounts in parentheses are charges to net income (loss)

The Company released the cumulative translation adjustment related to Aviabel Re S.A of \$6 million from AOCI in the consolidation balance sheet to foreign exchange losses (gains) in the consolidated statement of operations associated with the liquidation of that entity on December 18, 2019.

On March 27, 2017, as part of the wind down of the Company's Australia operation, the Australia Prudential Regulation Authority revoked the authorization of AXIS Specialty Australia to carry on insurance business in Australia. As this resulted in the substantial liquidation of AXIS Specialty Australia, the Company released the cumulative translation adjustment related to AXIS Specialty Australia of \$24 million from AOCI in the consolidation balance sheet to foreign exchange losses (gains) in the consolidated statement of operations.

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21. STATUTORY FINANCIAL INFORMATION

The Company's insurance and reinsurance operations are subject to insurance and reinsurance laws and regulations in the jurisdictions in which they operate, the most significant of which include Bermuda, Ireland, and the U.S. In addition, the Company is regulated by Lloyd's. These regulations include certain restrictions on the amount of dividends or other distributions, such as loans or cash advances, available to shareholders without prior approval from insurance regulatory authorities.

The statutory capital and surplus in each of the Company's most significant regulatory jurisdictions is shown in the following table:

At December 31,	Bermuda		Ireland		U.S.	
	2019	2018	2019	2018	2019	2018
Required statutory capital and surplus	\$ 1,502,153	\$ 1,470,375	\$ 719,405	\$ 637,226	\$ 500,750	\$ 489,560
Available statutory capital and surplus	\$ 3,288,752	\$ 3,513,342	\$ 1,069,621	\$ 896,868	\$ 1,713,013	\$ 1,668,847

Bermuda

Under the Insurance Act 1978, amendments thereto and Related Regulations of Bermuda (the "Act"), the Company's Bermuda subsidiary, AXIS Specialty Bermuda is required to maintain minimum statutory capital and surplus equal to the greater of a minimum solvency margin ("MSM") and the Enhanced Capital Requirement ("ECR"). The MSM is the greater of \$100 million, 50% of net premiums written, 15% of net reserve for losses and loss expenses and 25% of the ECR. The Company's ECR is calculated based on a standard risk-based capital model developed by the Bermuda Monetary Authority ("BMA"). In 2016, the BMA implemented an Economic Balance Sheet ("EBS") framework which was used as the basis to determine the ECR. At December 31, 2019 and 2018, the required and available statutory capital and surplus were based on this EBS framework.

Under the Act, AXIS Specialty Bermuda is restricted as to the payment of dividends for amounts greater than 25% of the prior year's statutory capital and surplus, whereby an affidavit signed by at least two members of the Board of Directors is required, attesting that any dividend in excess of this amount would not cause the Company to fail to meet its relevant margins. At December 31, 2019, the maximum dividend AXIS Specialty Bermuda could pay, without a signed affidavit, having met minimum levels of statutory capital and surplus requirements, was approximately \$844 million (2018: \$864 million).

Ireland

Effective January 1, 2016, the Company's Irish subsidiaries, AXIS Specialty Europe and AXIS Re SE, are required to maintain the Minimum Capital Requirement ("MCR") and the Solvency Capital Requirement ("SCR") at all times. The capital requirements are calculated by reference to Solvency II definitions. If an entity falls below the MCR or SCR, the Central Bank of Ireland is authorized to take action to restore the financial position of the Company's Irish subsidiaries. During 2019 and 2018, the Company's Irish subsidiaries were in compliance with these requirements.

The Company's Irish subsidiaries may declare dividends subject to meeting their solvency and capital requirements. The maximum dividend is limited to "excess eligible own funds" which is defined as excess Solvency II capital over the SCR and may also be limited to "profits available for distribution", which is defined as accumulated realized profits less accumulated realized losses and statutory reserves. At December 31, 2019, the maximum dividend the Company's Irish subsidiaries could pay, having met their solvency and capital requirements was approximately \$70 million (2018: \$37 million).

United States

The Company's U.S. operations required statutory capital and surplus is determined using the risk-based capital formula ("RBC"), which is the National Association of Insurance Commissioners' (the "Commissioner") method of measuring the

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21. STATUTORY FINANCIAL INFORMATION (CONTINUED)

minimum capital appropriate for U.S. reporting entities to support its overall business operations in consideration of its size and risk profile. If a company falls below the authorized control level as determined under the RBC, the Commissioner is authorized to take whatever regulatory actions may be considered necessary to protect policyholders and creditors. The maximum dividend that may be paid by the Company's U.S. insurance subsidiaries is restricted by the regulatory requirements of the domiciliary states. Generally, the maximum dividend that may be paid by each of the Company's U.S. insurance subsidiaries is limited to unassigned surplus (statutory equivalent of retained earnings) and may also be limited to statutory net income, net investment income or 10% of total statutory capital and surplus. At December 31, 2019, the maximum dividend that the Company's U.S. insurance operations could pay without regulatory approval was approximately \$141 million (2018: \$130 million).

Lloyd's of London

The Company operates in the Lloyd's market through its corporate members, AXIS Corporate Capital UK Limited and AXIS Corporate Capital UK II Limited, which provide 70% and 30%, respectively, of Syndicate 1686's capital support. AXIS Corporate Capital UK Limited was the sole corporate member of Syndicate 1686 until December 31, 2018. Syndicate 1686 was managed by a third-party managing agency, Asta Managing Agency Limited, until August 2017, when the Company received final authorization from Lloyd's, the Prudential Regulation Authority ("PRA"), and the Financial Conduct Authority ("FCA") for its own Lloyd's managing agent, AXIS Managing Agency Ltd. ("AXIS Managing Agency"). Effective August 4, 2017, AXIS Managing Agency assumed management of Syndicate 1686, replacing the Company's third-party managing agency agreement with Asta Managing Agency Limited, which had been in place since 2014.

AXIS Capital UK II Limited is the sole corporate member of Syndicate 2007. Novae Syndicates Limited ("NSL") managed Syndicate 2007 and SPA 6129, until it was deregistered on January 1, 2018. On January 1, 2018, the Company received authorization from Lloyd's for AXIS Managing Agency to commence management and oversight of Syndicate 2007 and SPA 6129.

SPA 6129 commenced trading on January 1, 2016, as a collaboration between Novae and Securis Investment Partners LLP, an insurance linked securities fund manager. For the three months ended December 31, 2017, NSL received a managing agency fee from SPA 6129. For the year ended December 31, 2018, AXIS Managing Agency received a managing agency fee from SPA 6129. The Company ended its collaboration with SPA 6129 in 2018.

Corporate members of Lloyd's and Lloyd's syndicates are bound by the rules of Lloyd's, which are prescribed by Bye-laws and Requirements made by the Council of Lloyd's under powers conferred by the Lloyd's Act 1982. These rules prescribe members' membership subscription, the level of their contribution to the Lloyd's Central Fund and the assets they must deposit with Lloyd's in support of their underwriting. The Council of Lloyd's has broad powers to sanction breaches of its rules, including the power to restrict or prohibit a member's participation on Lloyd's syndicates.

The capital provided to support underwriting, or FAL, is not available for distribution for the payment of dividends or for working capital requirements. Corporate members may also be required to maintain funds under the control of Lloyd's in excess of their capital requirements and such funds also may not be available for distribution for the payment of dividends. Lloyd's sets the corporate members' required capital annually through the application of a capital model that is based on regulatory rules pursuant to Solvency II.

FAL may be satisfied by cash, certain investments and letters of credit provided by approved banks. At December 31, 2019, fixed maturities and short-term investments with a fair value of \$725 million (2018: \$715 million) and cash of \$22 million (2018: \$8 million), respectively, were restricted to satisfy AXIS Corporate Capital UK Limited FAL requirements. At December 31, 2019, fixed maturities and short-term investments with a fair value of \$513 million (2018: \$528 million), equity securities with a fair value of \$49 million (2018: \$40 million), and cash of \$5 million (2018: \$16 million) were restricted to satisfy AXIS Corporate Capital UK II Limited FAL requirements (refer to Note 5 'Investments').

Each year, corporate members can apply to Lloyd's to release accumulated funds, whether syndicate profits or interest on FAL, which are in excess of the agreed FAL requirements. At December 31, 2019 and 2018, actual capital and assets exceeded the FAL requirements for Syndicates 1686 and 2007.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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21. STATUTORY FINANCIAL INFORMATION (CONTINUED)

During 2019, AXIS Corporate Capital UK II Limited released \$47 million of funds in relation to the projected December 31, 2019 FAL requirement. AXIS Corporate Capital UK Limited did not release any funds during 2019. During 2018, Syndicates 1686 and 2007 did not apply to release funds for the year ended December 31, 2018.

Branch Offices

The Company's operating subsidiaries in Bermuda and the U.S. maintain branch offices in Singapore and Canada, respectively. The Company's Irish operating subsidiaries maintain branch offices in Switzerland, the U.K, Belgium, and the Netherlands. In 2017, the Company ceased operations in Australia. As branch offices are not considered separate entities for regulatory purposes, the required and actual statutory capital and surplus amounts for each jurisdiction in the table above, include amounts related to the applicable branch offices. The Company's branch offices in Singapore and Canada are subject to additional minimum capital or asset requirements in their countries of domicile. At December 31, 2019 and 2018, the actual capital/assets for each of these branches exceeded the relevant local regulatory requirements.

Total statutory net income (loss) of the Company's operating subsidiaries was \$364 million, \$268 million, \$(94) million for 2019, 2018 and 2017, respectively. The differences between statutory financial statements and statements prepared in accordance with U.S. GAAP vary by jurisdiction, however, the primary differences are that statutory financial statements may not reflect deferred acquisition costs, certain net deferred tax assets, goodwill and intangible assets, unrealized gains (losses) on fixed maturities or certain unauthorized reinsurance recoverable balances.

AXIS CAPITAL HOLDINGS LIMITED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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22. UNAUDITED CONDENSED QUARTERLY FINANCIAL DATA

An unaudited summary of quarterly financial results is shown in the following table:

Quarters ended	Mar 31	Jun 30	Sep 30	Dec 31
<u>2019</u>				
Net premiums earned	\$ 1,134,212	\$ 1,123,607	\$ 1,157,307	\$ 1,172,051
Net investment income	107,303	137,949	115,763	117,557
Net investment gains	12,767	21,225	14,527	42,712
Underwriting income (loss) ⁽¹⁾⁽²⁾	77,822	78,659	(78,718)	(49,254)
Net income (loss) available (attributable) to common shareholders	98,125	166,387	27,745	(9,897)
Earnings (loss) per common share	\$ 1.17	\$ 1.98	\$ 0.33	\$ (0.12)
Earnings (loss) per diluted common share	\$ 1.16	\$ 1.97	\$ 0.33	\$ (0.12)
<u>2018</u>				
Net premiums earned	\$ 1,167,402	\$ 1,185,548	\$ 1,224,075	\$ 1,214,469
Net investment income	100,999	109,960	114,421	113,128
Net investment losses	(14,830)	(45,093)	(17,628)	(72,667)
Underwriting income (loss)	143,737	115,726	59,026	(194,664)
Net income (loss) available (attributable) to common shareholders	62,546	92,858	43,439	(198,448)
Earnings (loss) per common share	\$ 0.75	\$ 1.11	\$ 0.52	\$ (2.37)
Earnings (loss) per diluted common share	\$ 0.75	\$ 1.11	\$ 0.52	\$ (2.37)

- (1) Consolidated underwriting income is a pre-tax measure of underwriting profitability that takes into account net premiums earned and other insurance related income (loss) as revenues and net losses and loss expenses, acquisition costs and underwriting-related general and administrative expenses as expenses. Consolidated underwriting income (loss) is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to income (loss) before income taxes and interest in income (loss) of equity method investments, the most comparable GAAP financial measure, is provided in Note 3 'Segment Information'.
- (2) Underwriting-related general and administrative expenses includes those general and administrative expenses that are incremental and/or directly attributable to the Company's underwriting operations. Underwriting-related general and administrative expenses is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to general and administrative expenses, the most comparable GAAP financial measure, also included corporate expenses of \$129 million, \$108 million and \$130 million for the years ended December 31, 2019, 2018 and 2017, respectively. Corporate expenses include holding company costs necessary to support our worldwide insurance and reinsurance operations and costs associated with operating as a publicly-traded company. As these costs are not incremental and/or directly attributable to the Company's underwriting operations, these expenses are excluded from underwriting-related general and administrative expenses.
- (3) During the quarters ended March 31, June 30, September 30 and December 31, 2019, the Company recognized reorganization expenses of \$15 million, \$3 million, \$11 million and \$8 million, respectively, related to its transformation program which was launched in 2017. This program encompasses the integration of Novae which commenced in the fourth quarter of 2017, the realignment of the accident and health business, together with other initiatives designed to increase the Company's efficiency and enhance the Company's profitability while delivering a customer-centric operating model. During the quarters ended March 31, June 30, September 30 and December 31, 2018, the Company recognized reorganization expenses of \$13 million, \$19 million, \$16 million and \$19 million, respectively (refer to Note 18 'Transaction and Reorganization Expense').
- (4) During the quarters ended March 31, June 30, September 30 and December 31, 2019, the Company recognized amortization of VOBA of \$13 million, \$7 million, \$4 million, \$2 million, respectively, related to the acquisition of Novae. During the quarters ended March 31, June 30, September 30 and December 31, 2018, the Company recognized amortization of VOBA of \$57 million, \$53 million, \$39 million and \$23 million (refer to Note 4 'Goodwill and Intangible Assets').

23. SUBSEQUENT EVENTS

Series D Preferred Shares

On January 17, 2020, the Company redeemed all 9,000,000 Series D preferred shares, for an aggregate liquidation preference of \$225 million (refer to Note 14 'Shareholder's Equity').

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

The Company's management has performed an evaluation, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (the "Exchange Act")) at December 31, 2019. Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that, at December 31, 2019, the Company's disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and is accumulated and communicated to management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosures.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act). The Company's management has performed an assessment, with the participation of the Company's Chief Executive Officer and the Company's Chief Financial Officer, of the Company's internal control over financial reporting at December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013).

Based on that assessment, the Company's management believes that, at December 31, 2019, the Company's internal control over financial reporting is effective 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.

The Company's independent registered public accounting firm has issued an audit report on management's assessment of the Company's internal control over financial reporting at December 31, 2019. This report appears below.

All internal control systems, no matter how well designed, have inherent limitations. As a result, even those internal control systems determined to be effective can provide only reasonable assurance with respect to financial reporting and the preparation of financial statements.

Changes in Internal Control Over Financial Reporting

The Company's management has performed an evaluation, with the participation of the Company's Chief Executive Officer and the Company's Chief Financial Officer, of changes in the Company's internal control over financial reporting that occurred during the quarter ended December 31, 2019. Based on that evaluation, there were no changes in the Company's internal control over financial reporting that occurred during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of AXIS Capital Holdings Limited

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of AXIS Capital Holdings Limited and subsidiaries (the “Company”) 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 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 COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019, of the Company and our report dated February 27, 2020 expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Controls Over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (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 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 (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.

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.

/s/ Deloitte Ltd.

Hamilton, Bermuda

February 27, 2020

ITEM 9B. OTHER INFORMATION

Disclosure of Certain Activities Under Section 13(r) of the Securities Exchange Act of 1934

Section 13(r) of the Securities Exchange Act of 1934, as amended, requires issuers to disclose in their annual and quarterly reports whether they or any of their affiliates knowingly engaged in certain activities with Iran or with individuals or entities that are subject to certain sanctions under U.S. law. Issuers are required to provide this disclosure even where the activities, transactions or dealings are conducted outside of the U.S. in compliance with applicable law.

As and when allowed by the applicable law and regulations, certain of our non-U.S. subsidiaries provide treaty reinsurance coverage to non-U.S. insurers on a worldwide basis, including insurers of liability, marine, aviation and energy risks, and as a result, these underlying reinsurance portfolios may have some exposure to Iran. In addition, we underwrite insurance and facultative reinsurance on a global basis to non-U.S. insureds and insurers, including for liability, marine, aviation and energy risks. Coverage provided to non-Iranian business may indirectly cover an exposure in Iran. For example, certain of our operations underwrite global marine hull and cargo policies that provide coverage for vessels navigating into and out of ports worldwide, including Iran. For the quarter ended December 31, 2019, there has been no material amount of premium allocated or apportioned to activities relating to Iran. As we believe these activities are permitted under applicable laws and regulations, we intend for our non-U.S. subsidiaries to continue to provide such coverage to the extent permitted by applicable law.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference from the sections captioned "*Proposal No. 1 – Election of Directors*", "*Corporate Governance*", and "*Executive Officers*" in the definitive proxy statement that will be filed with the Securities and Exchange Commission not later than 120 days after the close of the fiscal year ended December 31, 2019 pursuant to Regulation 14A.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference from the sections captioned "*Executive Compensation*", "*Compensation Discussion and Analysis*", "*Director Compensation*", "*Compensation Committee Report*" and "*Compensation Committee Interlocks and Insider Participation*" in the definitive proxy statement that will be filed with the Securities and Exchange Commission not later than 120 days after the close of the fiscal year ended December 31, 2019 pursuant to Regulation 14A.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated by reference from the sections captioned "*Principal Shareholders*" and "*Equity Compensation Plan Information*" in the definitive proxy statement that will be filed with the Securities and Exchange Commission not later than 120 days after the close of the fiscal year ended December 31, 2019 pursuant to Regulation 14A.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated by reference from the sections captioned "*Certain Relationships and Related Transactions*", and "*Corporate Governance*" in the definitive proxy statement that will be filed with the Securities and Exchange Commission not later than 120 days after the close of the fiscal year ended December 31, 2019 pursuant to Regulation 14A.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference from the section captioned "*Principal Accounting Fees and Services*" in the definitive proxy statement that will be filed with the Securities and Exchange Commission not later than 120 days after the close of the fiscal year ended December 31, 2019 pursuant to Regulation 14A.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Financial Statements, Financial Statement Schedules and Exhibits

1. Financial Statements

Included in Part II –Refer to Item 8 of this report.

2. Financial Statement Schedules

Report of Independent Registered Public Accounting Firm

Schedule I – Summary of Investments - Other than Investments in Related Parties

Schedule II – Condensed Financial Information of Registrant

Schedule III – Supplementary Insurance Information

Schedule IV – Supplementary Reinsurance Information

Schedules V and VI have been omitted as the information is provided in Item 8, Consolidated Financial Statements, or in the above schedules.

3. Exhibits

Exhibit Number	Description of Document
2.1	Termination Agreement dated August 2, 2015 by and between PartnerRe Ltd. and AXIS Capital Holdings Limited (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 3, 2015.)
2.2	Rule 2.7 Announcement dated July 5, 2017 in connection with acquisition of Novae Group plc (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on July 6, 2017).
2.3	Rule 2.7 Announcement dated August 24, 2017 in connection with acquisition of Novae Group plc (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on August 25, 2017).
3.1	Certificate of Incorporation and Memorandum of Association of AXIS Capital Holdings Limited (incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1 (Amendment No. 1) (No. 333-103620) filed on April 16, 2003).
3.2	Amended and Restated Bye-laws of AXIS Capital Holdings Limited (incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-8 filed on May 15, 2009).
4.1	Specimen Common Share Certificate (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1 (Amendment No. 3) (No. 333-103620) filed on June 10, 2003).
4.2	Senior Indenture among AXIS Specialty Finance LLC, AXIS Capital Holdings Limited and The Bank of New York Mellon Trust Company, N.A., as trustee, dated as of March 23, 2010 (incorporated by reference to Exhibit 4.4 to the Company's Quarterly Report on Form 10-Q filed on April 27, 2010).
4.3	Senior Indenture among AXIS Specialty Finance PLC, as issuer, the Company, as guarantor, and The Bank of New York Mellon Trust Company, N.A., as trustee, dated as of March 13, 2014 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 13, 2014).
4.4	First Supplemental Indenture, dated as of April 3, 2019, among AXIS Specialty Finance PLC, AXIS Capital Holdings Limited and The Bank of New York Mellon Trust Company, N.A., relating to the 5.150% Senior Notes due 2045 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on April 4, 2019).

- [4.5](#) Junior Subordinated Indenture dated as of December 10, 2019, among AXIS Specialty Finance LLC, AXIS Capital Holdings Limited and The Bank of New York Mellon Trust Company, N.A. (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 11, 2019).
- [4.6](#) First Supplemental Indenture dated as of December 10, 2019, among AXIS Specialty Finance LLC, AXIS Capital Holdings Limited and The Bank of New York Mellon Trust Company, N.A., relating to the 4.900% Junior Subordinated Notes due 2040 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on December 11, 2019).
- [4.7](#) Form of 5.875% Senior Notes due 2020 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 23, 2010).
- [4.8](#) Form of 2.650% Senior Notes due 2019 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on March 13, 2014).
- [4.9](#) Form of 5.150% Senior Notes due 2045 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on March 13, 2014).
- [4.10](#) Form of 4.000% Senior Notes due 2027 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 6, 2017).
- [4.11](#) Form of 3.900% Senior Notes due 2029 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 19, 2019).
- [4.12](#) Form of 4.900% Junior Subordinated Notes due 2040 (incorporated by reference to Exhibit 4.3 [included as part of Exhibit 4.2] to the Company's Current Report on Form 8-K filed on December 11, 2019).
- [4.13](#) Certificate of Designations setting forth the specific rights, preferences, limitations and other terms of the 5.50% Series D Preferred Shares (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on May 20, 2013).
- [4.14](#) Certificate of Designations setting forth the specific rights, preferences, limitations and other terms of the 5.50% Series E Preferred Shares (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on November 7, 2016).
- †[4.15](#) Description of AXIS Capital Holdings Limited's Securities Registered under Section 12 of the Exchange Act.
- [10.1](#) Amended and Restated Shareholders Agreement dated December 31, 2002, among AXIS Capital Holdings Limited and each of the persons listed on Schedule A thereto (incorporated by reference to Exhibit 10.1 to the Company's Registration Statement on Form S-1 (Amendment No. 3) (No. 333-103620) filed on June 10, 2003).
- *[10.2](#) Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated May 3, 2012 (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K/A filed on May 9, 2012).
- *[10.3](#) Amendment No. 1 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated December 5, 2013 (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on December 9, 2013).
- *[10.4](#) Amendment No. 2 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated December 5, 2014 (incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K filed on February 23, 2015).
- *[10.5](#) Amendment No. 3 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated January 15, 2016 (incorporated by reference to Exhibit 10.5 to the Company's Annual Report on Form 10-K filed on February 25, 2016).
- *[10.6](#) Amendment No. 4 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated December 8, 2016 (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.7](#) Amendment No. 5 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated December 7, 2017 (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K filed on February 28, 2018).
- *[10.8](#) Amendment No. 6 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated December 5, 2018 (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K filed on February 26, 2019).

- *[10.9](#) Amendment No. 7 to Consulting Agreement by and between Michael A. Butt and AXIS Specialty Limited dated July 18, 2019 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 7, 2019).
- *[10.10](#) Employment Agreement by and among Albert Benchimol, AXIS Capital Holdings Limited and AXIS Specialty U.S. Services, Inc. dated May 3, 2012 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K/A filed on May 9, 2012).
- *[10.11](#) Amendment No. 1 to Employment Agreement dated May 3, 2012 by and among Albert Benchimol, AXIS Capital Holdings Limited and AXIS Specialty U.S. Services, Inc. effective as of March 9, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 11, 2015).
- *[10.12](#) Amendment No. 2 to Employment Agreement dated May 3, 2012 by and among Albert Benchimol, AXIS Capital Holdings Limited and AXIS Specialty U.S. Services, Inc. effective as of January 19, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 25, 2016).
- *[10.13](#) Amendment No. 3 to Employment Agreement dated May 3, 2012 by and among Albert Benchimol, AXIS Capital Holdings Limited, AXIS Specialty U.S. Services, Inc. and AXIS Specialty Limited effective as of January 1, 2017 (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.14](#) Amendment No. 4 to Employment Agreement dated May 3, 2012 by and among Albert Benchimol, AXIS Capital Holdings Limited, AXIS Specialty U.S. Services, Inc. and AXIS Specialty Limited effective as of December 6, 2018 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 11, 2018).
- *[10.15](#) Separation Agreement by and between Christopher DiSipio and AXIS Specialty U.S. Services, Inc. dated March 14, 2018 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 9, 2018).
- *[10.16](#) Employment Agreement by and between Peter W. Wilson and AXIS Specialty U.S. Services, Inc. dated June 23, 2014 (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K filed on February 23, 2015).
- *[10.17](#) Amendment No. 1 to Employment Agreement by and between Peter W. Wilson and AXIS Specialty U.S. Services, Inc. dated September 21, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 27, 2016).
- *[10.18](#) Amendment No. 2 to Employment Agreement by and between Peter W. Wilson and AXIS Specialty U.S. Services, Inc. dated September 19, 2019 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 24, 2019).
- *[10.19](#) Employment Agreement by and between Peter Vogt and AXIS Specialty U.S. Services, Inc. dated December 11, 2017 (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on February 28, 2018).
- *[10.20](#) Employment Agreement by and between Steve K. Arora and AXIS Specialty U.S. Services, Inc. dated July 5, 2017 (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- *[10.21](#) Letter Agreement by and between Steve K. Arora and AXIS Specialty U.S. Services, Inc. dated July 5, 2017 (incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- *[10.22](#) Employment Agreement by and between David Phillips and AXIS Specialty U.S. Services, Inc. dated March 21, 2014 (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- *[10.23](#) 2007 Long-Term Equity Compensation Plan, as amended (incorporated by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8 filed on May 15, 2012).
- *[10.24](#) 2017 Long-Term Equity Compensation Plan (incorporated by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8 filed on May 8, 2017).
- *[10.25](#) 2013 Executive Long-Term Equity Compensation Program (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 9, 2013).
- *[10.26](#) 2018 Executive Long-Term Equity Compensation Program (incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K filed on February 28, 2018).

- *[10.27](#) Executive Long-Term Equity Compensation Program (incorporated by reference to Exhibit 10.27 to the Company's Annual Report on form 10-K filed on February 26, 2019).
- *[10.28](#) 2014 Executive Annual Incentive Plan (incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- †*[10.29](#) Executive Annual Incentive Plan.
- *[10.30](#) AXIS Executive RSU Retirement Plan (incorporated by reference to Exhibit 10.26 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.31](#) Form of Employee Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K filed on February 21, 2014).
- *[10.32](#) Form of Employee Restricted Stock Unit Award Agreement (Performance Vesting) (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.33](#) Form of Employee Restricted Stock Unit Award Agreement (Retirement Eligible/Performance Vesting) (incorporated by reference to Exhibit 10.27 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.34](#) Form of Employee Restricted Stock Unit Award Agreement (Retirement Eligible) (incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K filed on February 27, 2017).
- *[10.35](#) Form of Employee Restricted Stock Unit Award Agreement (Performance Vesting) (incorporated by reference to Exhibit 10.37 to the Company's Annual Report on Form 10-K filed on February 28, 2018).
- *[10.36](#) Form of Employee Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.38 to the Company's Annual Report on Form 10-K filed on February 28, 2018).
- *[10.37](#) Form of Employee Restricted Stock Unit Award Agreement (Performance Vesting) (incorporated by reference to Exhibit 10.36 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- *[10.38](#) Form of Employee Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.37 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- †*[10.39](#) Form of Employee Restricted Stock Unit Award Agreement (Performance Vesting).
- *[10.40](#) AXIS Specialty U.S. Services, Inc. Supplemental Retirement Plan (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K filed on February 26, 2008).
- *[10.41](#) Directors Annual Compensation Program (incorporated by reference to Exhibit 10.40 to the Company's Annual Report on Form 10-K filed on February 26, 2019).
- †*[10.42](#) Directors Annual Compensation Program.
- [10.43](#) Master Reimbursement Agreement, dated as of May 14, 2010, by and among AXIS Specialty Limited, AXIS Re Limited, AXIS Specialty Europe Limited, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Specialty Insurance Company, AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 19, 2010).
- [10.44](#) Amendment to Master Reimbursement Agreement dated January 27, 2012 by and among AXIS Specialty Limited, AXIS Re Limited, AXIS Specialty Europe Limited, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Specialty Insurance Company and AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 30, 2012).
- [10.45](#) Amendment to Committed Facility Letter dated November 20, 2013 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company and AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 21, 2013).
- [10.46](#) Amendment to Committed Facility Letter dated March 31, 2015 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Reinsurance Company, AXIS Surplus Insurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 1, 2015).

- [10.47](#) Amendment to Facility Fee Letter dated March 31, 2015 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Reinsurance Company, AXIS Surplus Insurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 1, 2015).
- [10.48](#) Committed Facility Letter dated December 18, 2015 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company and AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 22, 2015).
- [10.49](#) Committed Facility Letter dated March 27, 2017 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company and AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 31, 2017).
- [10.50](#) Amendment to Master Reimbursement Agreement dated March 27, 2017 by and among AXIS Specialty Limited, AXIS Re Limited, AXIS Specialty Europe Limited, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 31, 2017).
- [10.51](#) Amendment to Committed Facility Letter dated March 28, 2018 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 3, 2018).
- [10.52](#) Deed of Amendment to \$250 million secured letter of credit facility dated March 28, 2019 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 3, 2019).
- [10.53](#) Deed of Amendment to \$500 million secured letter of credit facility dated December 24, 2019 by and among AXIS Specialty Limited, AXIS Re SE, AXIS Specialty Europe SE, AXIS Insurance Company, AXIS Surplus Insurance Company, AXIS Reinsurance Company and Citibank Europe plc (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 30, 2019).
- [†21.1](#) Subsidiaries of the registrant.
- [†23.1](#) Consent of Deloitte Ltd.
- [†24.1](#) Power of Attorney (included as part of signature pages hereto).
- [†31.1](#) Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- [†31.2](#) Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- [†32.1](#) Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- [†32.2](#) Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- [†101](#) The following financial information from AXIS Capital Holdings Limited's Annual Report on Form 10-K for the year ended December 31, 2019 formatted in Inline XBRL: (i) Consolidated Balance Sheets at December 31, 2019 and 2018; (ii) Consolidated Statements of Operations for the years ended December 31, 2019, 2018 and 2017; (iii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017; (iv) Consolidated Statements of Changes in Shareholders' Equity for the years ended December 31, 2019, 2018 and 2017; (v) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017; and (vi) Notes to Consolidated Financial Statements, tagged as blocks of text and in detail.
- [†104](#) Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Exhibits 10.2 through 10.42 represent a management contract, compensatory plan or arrangement in which directors and/or executive officers are eligible to participate.

† Filed herewith.

The agreements and other documents filed as exhibits to this report are not intended to provide factual information or other disclosure other than with respect to the terms of the agreements or other documents themselves, and you should not rely on them for that purpose. In particular, any representations and warranties made by us in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs as of the date they were made or at any other time.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on February 27, 2020.

AXIS CAPITAL HOLDINGS LIMITED

By: /s/ ALBERT BENCHIMOL
Albert Benchimol
President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned directors and executive officers of AXIS Capital Holdings Limited, hereby appoint Peter Vogt and Conrad D. Brooks, and each of them singly, as our true and lawful attorneys with full power to them and each of them to sign for us, and in our names in the capacities indicated below, any and all amendments to the Annual Report on Form 10-K filed with the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys to any and all amendments to said Annual Report on Form 10-K.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on February 27, 2020.

<u>Signature</u>	<u>Title</u>
<u>/s/ ALBERT BENCHIMOL</u> Albert Benchimol	Chief Executive Officer, President and Director (Principal Executive Officer)
<u>/s/ PETER VOGT</u> Peter Vogt	Chief Financial Officer (Principal Financial Officer)
<u>/s/ KENT ZIEGLER</u> Kent Ziegler	Global Corporate Controller (Principal Accounting Officer)
<u>/s/ MICHAEL A. BUTT</u> Michael A. Butt	Director
<u>/s/ CHARLES A. DAVIS</u> Charles A. Davis	Director
<u>/s/ ANNE MELISSA DOWLING</u> Anne Melissa Dowling	Director
<u>/s/ ROBERT L. FRIEDMAN</u> Robert L. Friedman	Director

<u>Signature</u>	<u>Title</u>
<u>/s/ CHRISTOPHER V. GREETHAM</u> Christopher V. Greetham	Director
<u>/s/ ELANOR R. HARDWICK</u> Elanor R. Hardwick	Director
<u>/s/ MAURICE KEANE</u> Maurice Keane	Director
<u>/s/ THOMAS C. RAMEY</u> Thomas C. Ramey	Director
<u>/s/ HENRY B. SMITH</u> Henry B. Smith	Director
<u>/s/ BARBARA A. YASTINE</u> Barbara A. Yastine	Director
<u>/s/ WILHELM ZELLER</u> Wilhelm Zeller	Director
<u>/s/ LIZABETH H. ZLATKUS</u> Lizabeth H. Zlatkus	Director

AXIS CAPITAL HOLDINGS LIMITED
SUMMARY OF INVESTMENTS - OTHER THAN INVESTMENTS IN RELATED PARTIES

At December 31, 2019

(in thousands)	Amortized cost	Fair value	Amount shown on the balance sheet
<u>Type of investment:</u>			
Fixed maturities, available for sale, at fair value			
U.S. government and agency	\$ 2,102,849	\$ 2,112,881	\$ 2,112,881
Non-U.S. government	564,505	576,592	576,592
Corporate debt	4,797,384	4,930,254	4,930,254
Agency RMBS	1,570,823	1,592,584	1,592,584
CMBS	1,340,156	1,365,052	1,365,052
Non-Agency RMBS	84,381	84,922	84,922
ABS	1,599,867	1,598,693	1,598,693
Municipals	203,275	207,227	207,227
Total fixed maturities	\$ 12,263,240	12,468,205	12,468,205
Mortgage loans, held for investment, at fair value		432,748	432,748
Short-term investments, at fair value		38,471	38,471
Equity securities, at fair value		474,207	474,207
Other investments, at fair value ⁽¹⁾		478,810	770,923
Equity method investments ⁽²⁾		—	117,821
Total investments		\$ 13,892,441	\$ 14,302,375

(1) Other investments exclude investments where the Company is considered to have the ability to exercise significant influence over the operating and financial policies of the investees.

(2) Equity method investments are excluded as the Company has the ability to exercise significant influence over the operating and financial policies of the investees.

AXIS CAPITAL HOLDINGS LIMITED
CONDENSED BALANCE SHEETS – PARENT COMPANY
DECEMBER 31, 2019 AND 2018

	2019	2018
	(in thousands)	
Assets		
Investments in subsidiaries	\$ 5,807,851	\$ 5,320,828
Cash and cash equivalents	3,103	3,099
Other assets	5,540	9,647
Total assets	\$ 5,816,494	\$ 5,333,574
Liabilities		
Intercompany payable	\$ 215,911	\$ 247,992
Dividends payable	50,927	51,157
Other liabilities	5,648	4,354
Total liabilities	272,486	303,503
Shareholders' equity		
Preferred shares	775,000	775,000
Common shares (<i>shares issued 2019: 176,580; 2018: 176,580</i> <i>shares outstanding 2019: 83,959; 2018: 83,586</i>)	2,206	2,206
Additional paid-in capital	2,317,212	2,308,583
Accumulated other comprehensive income (loss)	171,710	(177,110)
Retained earnings	6,056,686	5,912,812
Treasury shares, at cost (<i>2019: 92,621; 2018: 92,994</i>)	(3,778,806)	(3,791,420)
Total shareholders' equity	5,544,008	5,030,071
Total liabilities and shareholders' equity	\$ 5,816,494	\$ 5,333,574

- (1) AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary, related to the issuance of \$500 million aggregate principal amount of 5.875% senior unsecured notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.
- (2) AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance PLC, a 100% owned finance subsidiary, related to the issuance of \$250 million aggregate principal amount of 5.15% senior unsecured notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.
- (3) AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance PLC, a 100% owned finance subsidiary, related to the issuance of \$350 million aggregate principal amount of 4.0% senior unsecured notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.
- (4) On February 15, 2018, AXIS Capital contributed \$105 million to AXIS Specialty Global Holdings Limited to support the capital requirements of its U.S. subsidiaries.
- (5) AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary, related to the issuance of \$300 million aggregate principal amount of 3.9% senior unsecured notes. AXIS Capital's obligations under this guarantee are unsecured senior obligations and rank equally with all other senior obligations of AXIS Capital.
- (6) AXIS Capital has fully and unconditionally guaranteed all obligations of AXIS Specialty Finance LLC, a 100% owned finance subsidiary, related to the issuance of \$425 million aggregate principal amount of 4.9% fixed-rate reset junior unsecured notes. AXIS Capital's obligation under this guarantee is an unsecured junior subordinated obligation and ranks equally with all future unsecured and junior subordinated obligations of AXIS Capital, and junior in right of payment to all outstanding and future senior obligations of AXIS Capital.

AXIS CAPITAL HOLDINGS LIMITED
CONDENSED STATEMENTS OF OPERATIONS – PARENT COMPANY
YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	(in thousands)		
Revenues			
Net investment income ⁽¹⁾	\$ 1,800	\$ 900	\$ 2,116
Total revenues	1,800	900	2,116
Expenses			
General and administrative expenses	53,335	29,250	34,933
Total expenses	53,335	29,250	34,933
Income (loss) before equity in net income (loss) of subsidiaries	(51,535)	(28,350)	(32,817)
Equity in net income (loss) of subsidiaries	375,008	71,371	(336,152)
Net income (loss)	323,473	43,021	(368,969)
Preferred share dividends	41,112	42,625	46,810
Net income (loss) available (attributable) to common shareholders	\$ 282,361	\$ 396	\$ (415,779)
Comprehensive income (loss)	\$ 672,293	\$ (158,973)	\$ (154,746)

- (1) On April 15, 2017 a promissory note of \$368 million advanced by AXIS Capital Holdings Limited to AXIS Specialty Limited on November 7, 2016, matured. For the year ended December 31, 2017, interest earned at an annual rate of 1.132% and was recorded in net investment income.

AXIS CAPITAL HOLDINGS LIMITED
CONDENSED STATEMENTS OF CASH FLOWS – PARENT COMPANY
YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017

	<u>2019</u>	<u>2018</u>	<u>2017</u>
		(in thousands)	
Cash flows from operating activities:			
Net income (loss)	\$ 323,473	\$ 43,021	\$ (368,969)
Adjustments to reconcile net income (loss) to net cash provided by operating			
Equity in net income (loss) of subsidiaries	(375,008)	(71,371)	336,152
Change in intercompany payable	(32,081)	87,042	94,827
Dividends received from subsidiaries	250,000	200,000	400,000
Other items	23,619	(79,927)	4,988
Net cash provided by operating activities	<u>190,003</u>	<u>178,765</u>	<u>466,998</u>
Cash flows from investing activities:			
Capital returned by subsidiary	—	—	368,252
Net cash provided by investing activities	<u>—</u>	<u>—</u>	<u>368,252</u>
Cash flows from financing activities:			
Repurchase of common shares - open market	—	—	(261,180)
Taxes paid on withholding shares	(10,165)	(10,080)	(24,678)
Dividends paid - common shares	(137,209)	(133,502)	(135,032)
Repurchase of preferred shares	—	—	(351,074)
Dividends paid - preferred shares	(42,625)	(42,625)	(52,844)
Net cash used in financing activities	<u>(189,999)</u>	<u>(186,207)</u>	<u>(824,808)</u>
Increase (decrease) in cash, cash equivalents and restricted cash	4	(7,442)	10,442
Cash, cash equivalents and restricted cash - beginning of year	3,099	10,541	99
Cash, cash equivalents and restricted cash - end of year	<u>\$ 3,103</u>	<u>\$ 3,099</u>	<u>\$ 10,541</u>

AXIS CAPITAL HOLDINGS LIMITED
SUPPLEMENTARY INSURANCE INFORMATION

At and year ended December 31, 2019

(in thousands)	Deferred acquisition costs	Reserve for losses and loss expenses	Unearned premiums	Net premiums earned	Net investment income ⁽¹⁾	Net losses and loss expenses	Acquisition costs	Other operating expenses ⁽²⁾	Net premiums written
Insurance	\$ 191,925	\$ 6,496,568	\$ 2,115,664	\$ 2,190,084	\$ —	\$ 1,278,679	\$ 468,281	\$ 401,963	\$ 2,209,155
Reinsurance	300,194	6,255,513	1,510,582	2,397,094	—	1,766,119	556,301	103,772	2,280,460
Corporate	—	—	—	—	478,572	—	—	129,096	—
Total	<u>\$ 492,119</u>	<u>\$12,752,081</u>	<u>\$ 3,626,246</u>	<u>\$ 4,587,178</u>	<u>\$ 478,572</u>	<u>\$3,044,798</u>	<u>\$ 1,024,582</u>	<u>\$ 634,831</u>	<u>\$ 4,489,615</u>

At and year ended December 31, 2018

(in thousands)	Deferred acquisition costs	Reserve for losses and loss expenses	Unearned premiums	Net premiums earned	Net investment income ⁽¹⁾	Net losses and loss expenses	Acquisition costs	Other operating expenses ⁽²⁾	Net premiums written
Insurance	\$ 209,622	\$ 6,426,309	\$ 2,061,123	\$ 2,362,606	\$ —	\$ 1,494,323	\$ 399,193	\$ 395,252	\$ 2,324,747
Reinsurance	357,000	5,854,460	1,574,635	2,428,889	—	1,695,964	569,642	123,916	2,334,215
Corporate	—	—	—	—	438,507	—	—	108,221	—
Total	<u>\$ 566,622</u>	<u>\$12,280,769</u>	<u>\$ 3,635,758</u>	<u>\$ 4,791,495</u>	<u>\$ 438,507</u>	<u>\$3,190,287</u>	<u>\$ 968,835</u>	<u>\$ 627,389</u>	<u>\$ 4,658,962</u>

At and year ended December 31, 2017

(in thousands)	Deferred acquisition costs	Reserve for losses and loss expenses	Unearned premiums	Net premiums earned	Net investment income ⁽¹⁾	Net losses and loss expenses	Acquisition costs	Other operating expenses ⁽²⁾	Net premiums written
Insurance	\$ 115,332	\$ 7,011,805	\$ 2,053,422	\$ 1,816,438	\$ —	\$ 1,465,427	\$ 270,229	\$ 325,368	\$ 1,775,825
Reinsurance	358,729	5,985,748	1,587,977	2,332,322	—	1,822,345	553,362	124,115	2,251,318
Corporate	—	—	—	—	400,805	—	—	129,945	—
Total	<u>\$ 474,061</u>	<u>\$12,997,553</u>	<u>\$ 3,641,399</u>	<u>\$ 4,148,760</u>	<u>\$ 400,805</u>	<u>\$3,287,772</u>	<u>\$ 823,591</u>	<u>\$ 579,428</u>	<u>\$ 4,027,143</u>

- (1) The Company evaluates underwriting results of its reportable segments separately from the performance of its investment portfolio therefore, the Company believes it is appropriate to exclude net investment income from its underwriting profitability measure.
- (2) Amounts related to the Company's reportable segments reflect underwriting-related general and administrative expenses, which includes those general and administrative expenses that are incremental and/or directly attributable to the Company's underwriting operations. Underwriting-related general and administrative expenses is a non-GAAP financial measure as defined in Item 10(e) of SEC Regulation S-K. The reconciliation to general and administrative expenses, the most comparable GAAP financial measure, presented in the table above, also included corporate expenses of \$129 million, \$108 million and \$130 million for the years ended December 31, 2019, 2018 and 2017, respectively. Corporate expenses include holding company costs necessary to support our worldwide insurance and reinsurance operations and costs associated with operating as a publicly-traded company. As these costs are not incremental and/or directly attributable to the Company's underwriting operations, these expenses are excluded from underwriting-related general and administrative expenses.

SCHEDULE IV

AXIS CAPITAL HOLDINGS LIMITED
SUPPLEMENTARY REINSURANCE INFORMATION
YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017

(in thousands)	GROSS AMOUNT	CEDED TO OTHER COMPANIES	ASSUMED FROM OTHER COMPANIES	NET AMOUNT	PERCENTAGE OF AMOUNT ASSUMED TO NET
2019					
Property and Casualty	\$ 3,134,462	\$ 2,311,001	\$ 3,187,623	\$ 4,011,084	79.5%
Accident and Health	141,535	98,242	435,238	478,531	91.0%
Total	\$ 3,275,997	\$ 2,409,243	\$ 3,622,861	\$ 4,489,615	80.7%
2018					
Property and Casualty	\$ 3,258,999	\$ 2,163,417	\$ 3,074,906	\$ 4,170,488	73.7%
Accident and Health	209,041	87,686	367,119	488,474	75.2%
Total	\$ 3,468,040	\$ 2,251,103	\$ 3,442,025	\$ 4,658,962	73.9%
2017					
Property and Casualty	\$ 2,228,022	\$ 1,523,662	\$ 2,814,173	\$ 3,518,533	80.0%
Accident and Health	195,104	5,468	318,974	508,610	62.7%
Total	\$ 2,423,126	\$ 1,529,130	\$ 3,133,147	\$ 4,027,143	77.8%

