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

FORM 20-F

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

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

For the fiscal year ended December 31, 2018

OR

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

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-14536

PartnerRe Ltd.
(Exact name of registrant as specified in its charter)

Bermuda
(Jurisdiction of incorporation or organization)

90 Pitts Bay Road, Pembroke, Bermuda
(Address of principal executive offices)

Mario Bonaccorso
Executive Vice President and Chief Financial Officer
90 Pitts Bay Road, Pembroke, HM 08, Bermuda Telephone: +1 441-292-0888, Email: mario.bonaccorso@partnerre.com
(Name, Telephone, E-mail and/or Facsimile Number and Address of Company Contact Person)

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

Title of each class	Name of each exchange on which registered
5.875% Series F Non-Cumulative Preferred Shares, $1.00 par value	**New York Stock Exchange**
6.50% Series G Cumulative Preferred Shares, $1.00 par value	**New York Stock Exchange**
7.25% Series H Cumulative Preferred Shares, $1.00 par value	**New York Stock Exchange**
5.875% Series I Non-Cumulative Preferred Shares, $1.00 par value	**New York Stock Exchange**

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

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None

Indicate the number of outstanding shares of each of the issuer’s classes of capital or common stock as of the close of the period covered by the annual report: 100,000,000 common shares and 345,644 Class B common shares

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

If this report is an annual or transition report, 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒

Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, 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. ☐

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☒ International Financial Reporting Standards as issued by the International Accounting Standards Board ☐ Other ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act.) Yes ☐ No ☒

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PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

The selected consolidated financial data of PartnerRe Ltd. and its subsidiaries (the Company or PartnerRe) below should be read in conjunction with the Consolidated Financial Statements, and the accompanying Notes to the Consolidated Financial Statements in Item 18 and with other information contained in this report, including Operating and Financial Review and Prospects in Item 5 of this report.

The selected consolidated financial data for 2018, 2017, 2016, 2015 and 2014 (in millions of United States (U.S.) dollars) is as follows:

	For the years ended December 31,				
Statement of Operations Data	**2018**	**2017**	**2016**	**2015**	**2014**
Net premiums earned	**$ 5,514**	$ 5,025	$ 4,970	$ 5,269	$ 5,609
Net investment income	**416**	402	411	450	480
Net realized and unrealized investment (losses) gains	**(390)**	232	26	(297)	372
Other income	**50**	15	15	9	16
Total revenues	**$ 5,590**	$ 5,675	$ 5,422	$ 5,431	$ 6,477
Net (loss) income	**$ (86)**	$ 264	$ 447	$ 107	$ 1,068
Net (loss) income attributable to common shareholder	**$ (132)**	$ 218	$ 387	$ 47	$ 998

	At December 31,				
Balance Sheet Data	**2018**	**2017**	**2016**	**2015**	**2014**
Total assets	**$ 22,760**	$ 22,981	$ 21,939	$ 21,406	$ 22,270
Total shareholders' equity	**$ 6,517**	$ 6,745	$ 6,688	$ 6,901	$ 7,049
Common shareholder's equity[(1)]	**$ 5,812**	$ 6,041	$ 5,984	$ 6,047	$ 6,195

(1) Common shareholder's equity is calculated as Total shareholders' equity less preferred shareholders' equity of $704 million, the liquidation value of preferred shares.

On March 18, 2016, the Company's common shares were acquired by Exor N.V. (subsequently renamed EXOR Nederland N.V.). As a result, all of the Company's publicly traded common shares and all treasury shares were canceled. At December 31, 2018 and 2017, EXOR Nederland N.V. held 100% of the 100 million common shares of $0.00000001 par value each (Class A shares) for a total share capital of $1.00, included in Share capital in the Consolidated Balance Sheets. Accordingly, per share data is no longer meaningful and is no longer presented by the Company.

In 2017 and 2018, the Company issued Class B shares to certain executives of the Company (see also Share Ownership section in Item 6 and Note 14 to the Consolidated Financial Statements in Item 18 of this report).

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

We expose ourselves to significant risks that can impact our financial strength as measured by United States generally accepted accounting principles ("U.S. GAAP") or regulatory and rating agencies' capital requirements. Risk sources for which management has established key risk limits approved by the Board of Directors (the "Board"), and the related approved limits and actual limits deployed, at December 31, 2018 and 2017 are presented in the Risk Management section below in Item 4B.

The following risks should be read in conjunction with the Safe Harbor Statement and the Operating and Financial Review and Prospects section in Item 5, and the Notes to the Consolidated Financial Statements in Item 18 of this report. These risks may affect our financial condition and operating results and, individually or in the aggregate, could cause our actual results to differ materially from past and projected future results. Some of these risks and uncertainties could affect particular business operations or segments, while others could affect all of our businesses. Although risks are discussed separately, many are interrelated.

Except as may be required by law, we undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events, or otherwise. It is impossible to predict or identify all risk factors and, consequently, the following factors should not be construed as a complete discussion of risks and uncertainties that may affect us.

As used in these Risk Factors, the terms "the Company", "PartnerRe", "we", "our" or "us" may, depending upon the context, refer solely to the Company, to one or more of the Company's consolidated subsidiaries or to all of them taken as a whole. The terms EXOR and Exor Group relate to the Company's ultimate parent, EXOR N.V. and its affiliated companies (see Information on the Company in Item 4 of this report).

Risks Related to Our Company

The catastrophe business that we underwrite will result in volatility of our earnings and could impair our financial condition.

Catastrophic losses result from events such as windstorms, hurricanes, tsunamis, earthquakes, floods, hailstorms, tornadoes, severe winter weather, fires, drought, explosions and other natural and man-made disasters, the incidence and severity of which are inherently unpredictable. We also have substantial exposure to unexpected, large losses resulting from future man-made catastrophic events, such as acts of terrorism, acts of war, nuclear accidents and political instability, or from other perils. Because catastrophe reinsurance accumulates large aggregate exposures to both man-made and natural disasters, our loss experience in this line of business could be characterized as low frequency and high severity. Although we may attempt to exclude losses from terrorism and certain other similar risks from some coverage we write, we continue to have exposure to such unforeseen or unpredictable events. Irrespective of the clarity and inclusiveness of policy language, there can be no assurance that a court or arbitration panel will not limit enforceability of policy language or otherwise issue a ruling adverse to us.

This is likely to result in substantial volatility in our financial results and potentially significant net losses from time to time, and may also result in a material decline of our book value or impairment of our financial condition that may limit our ability to make dividend payments and payments of interest and principal on our debt securities and limit the funds available to make payments on policyholder claims.

Should we incur a very large catastrophic loss or a series of catastrophic losses, our ability to write future business may be adversely impacted if we are unable to replenish our capital.

If actual losses exceed our estimated loss reserves, our net income and capital position will be reduced.

Our success depends upon our ability to accurately assess the risks associated with the businesses that we reinsure. We establish loss reserves to cover our estimated liability for the payment of all losses and loss expenses incurred with respect to premiums earned on the reinsurance contracts that we write. Loss reserves are estimates involving actuarial and statistical projections at a given time to reflect our expectation of the costs of the ultimate settlement and administration of claims. Although we use actuarial models as well as historical reinsurance and insurance industry loss statistics, we also rely heavily on data provided by counterparties and on management's experience and judgment to assist in the establishment of appropriate claims and claim expense reserves. Because of the many assumptions and estimates involved in establishing reserves, the reserving process is inherently uncertain. Our estimates and judgments are based on numerous factors, and may be revised as additional experience and other data become available and are reviewed as new or improved methodologies are developed, as loss trends and claims inflation impact future payments, or as current laws or interpretations thereof change.

Estimates of losses are based on, among other things, a review of potentially exposed contracts, information reported by and discussions with counterparties, and our estimate of losses related to those contracts and are subject to change as more information is reported and becomes available. Losses for casualty and liability lines often take a long time to be reported, and frequently can be impacted by lengthy, unpredictable litigation and by the inflation of loss costs over time. Changes in the level of inflation also result in an increased level of uncertainty in our estimation of loss reserves, particularly for long-tail lines of business. As a consequence, actual losses and loss expenses paid may deviate substantially from the reserve estimates reflected in our financial statements.

Through various acquisitions, we assumed certain asbestos and environmental exposures. Our non-life reserves include an estimate of our ultimate liability for asbestos and environmental claims for which we cannot estimate the ultimate value using traditional reserving techniques, and for which there are significant uncertainties in estimating the amount of our potential losses. These liabilities are especially hard to estimate for many reasons, including the long delays between exposure and manifestation of any bodily injury or property damage, difficulty in identifying the source of the asbestos or environmental contamination, long reporting delays and difficulty in properly allocating liability for the asbestos or environmental damage. Certain of our subsidiaries have received and continue to receive notices of potential reinsurance claims from ceding insurance companies, which have in turn received claims asserting asbestos and environmental losses under primary insurance policies, in part reinsured by us. Such claims notices are often precautionary in nature and are generally unspecific, and the primary insurers often do not attempt to quantify the amount, timing or nature of the exposure. Given the lack of specificity in some of these notices, and the legal and tort environment that affects the development of claims reserves, the uncertainties inherent in valuing asbestos and environmental claims are not likely to be resolved in the near future. As of December 31, 2018, the Company's net non-life reserves included $47 million related to asbestos and environmental claims.

It is difficult to predict the timing of such events, or estimate the amount of loss any given occurrence will generate. Under U.S. GAAP, we are not permitted to establish reserves for potential losses associated with catastrophic events until an event that may give rise to such losses occurs. If such an event were to occur, our reported income would decrease in the affected period. In particular, unforeseen large losses could reduce our profitability or impair our financial condition.

If ultimate losses and loss expenses exceed the reserves currently established, we will be required to increase loss reserves in the period in which we identify the deficiency to cover any such claims. As a result, even when losses are identified and reserves are established for any line of business, ultimate losses and loss expenses may deviate, perhaps substantially, from estimates reflected in loss reserves in our financial statements. Variations between our loss reserve estimates and actual emergence of losses could be material and could have a material adverse effect on our results of operations and financial condition.

See Note 8 to the Consolidated Financial Statements in Item 18 of this report for further details.

Given the inherent uncertainty of models, the usefulness of our proprietary and third-party models as a tool to evaluate risk is subject to a high degree of uncertainty that could result in actual losses that are materially different than our estimates, including probable maximum losses (PMLs), significantly impacting our financial results and condition.

We use our own proprietary catastrophe models and third-party vendor analytic and modeling capabilities to provide an objective risk assessment relating to risks in our reinsurance portfolio. We use these models to help us control risk accumulation and inform management and other stakeholders of capital requirements and to improve the risk/return profile. However, given the inherent uncertainty of modeling techniques and the application of such techniques, these models and databases may not accurately address a variety of matters that might impact certain of our coverages.

For example, catastrophe models that simulate loss estimates based on a set of assumptions are important tools used by us to estimate our PMLs. These assumptions address a number of factors that impact loss potential including, but not limited to, the characteristics of the natural catastrophe event; demand surge resulting from an event; the types, function, location and characteristics of exposed risks; susceptibility of exposed risks to damage from an event with specific characteristics; and the financial and contractual provisions of the reinsurance contracts that cover losses arising from an event. We run many model simulations in order to understand the impact of these assumptions on its catastrophe loss potential. Furthermore, there are risks associated with catastrophic events, which are either poorly represented or not represented at all by catastrophe models. Each modeling assumption or un-modeled risk introduces uncertainty into PML estimates that management must consider. These uncertainties can include, but are not limited to, the following:

- The models do not address all the possible hazard characteristics of a catastrophe peril (e.g., the precise path and wind speed of a hurricane);
- The models may not accurately reflect the true frequency of events;
- The models may not accurately reflect a risk's vulnerability or susceptibility to damage for a given event characteristic;
- The models may not accurately represent loss potential to reinsurance contract coverage limits, terms and conditions; and
- The models may not accurately reflect the impact on the economy of the area affected or the financial, judicial, political, or regulatory impact on insurance claim payments during or following a catastrophe event.

Our PMLs are selected after assessment of multiple third party vendor model outputs, internally constructed independent models, including our CatFocus® suite of models, and other qualitative and quantitative assessments by management, including assessments of exposure not typically modeled in vendor or internal models. Our methodology for estimating PMLs may differ from methods used by other companies and external parties given the various assumptions and judgments required to estimate a PML.

As a result of these factors and contingencies, our reliance on assumptions and data used to evaluate our entire reinsurance portfolio, and specifically to estimate a PML, is subject to a high degree of uncertainty that could result in actual losses that are materially different from our PML estimates and, as a result, our financial results and financial condition may be significantly and adversely impacted. See further information on PMLs in Risk Management section in Item 4B. below for further details.

There may be increases in the frequency and severity of natural catastrophes and the losses that result from them, which would impact our financial condition and cause our reported income to decrease in the affected period.

There may be increases in the frequency and severity of natural catastrophes and the losses that result from them. We monitor and adjust, as we believe appropriate, our risk management models to reflect our judgment of how to interpret current developments and information, such as these studies. We believe that factors including increases in the value and geographic concentration of insured property, particularly along coastal regions, the increasing risk of extreme weather events reflecting changes in climate and ocean temperatures, and the effects of inflation may continue to increase the severity of claims from catastrophic events in the future.

Our Life products expose us to volatility in net income arising from changes in the value of the Life and health reserves liability that are directly affected by market risk and other factors and are based upon various assumptions.

The pricing and establishment of reserves for our Life and Health segment related to future policy benefits and the valuation of life insurance and annuity products are based upon various assumptions, including but not limited to market changes, mortality rates, morbidity rates and policyholder behavior. The process of establishing reserves for future policy benefits relies on our ability to accurately estimate insured events that have not yet occurred but that are expected to occur in future periods, as well as assumptions for investment returns. Significant deviations in actual experience from assumptions used for pricing and for establishing reserves for future policy benefits could have an adverse effect on the profitability of our products, our business and our financial results and condition.

Under reinsurance programs covering variable annuity guarantees we assume the risk of guaranteed minimum death benefits (GMDB). Our net income is directly impacted by changes in the reserves calculated in connection with the reinsurance of GMDB liabilities. Reported liabilities for GMDB reinsurance are determined using internal valuation models. Such valuations require considerable judgment and are subject to significant uncertainty. The valuation of these products is subject to fluctuations arising from, among other factors, changes in interest rates, changes in equity markets, changes in credit markets, changes in the allocation of the investments underlying annuitant's account values, and assumptions regarding future policyholder behavior. Adverse changes in market factors and policyholder behavior will have an impact on both life underwriting income and net income. These risks may increase as we seek to expand our Life and Health business.

The reserves described above are included in Life and health reserves on the Consolidated Balance Sheets with changes in these reserves included in Losses and loss expenses within the Consolidated Statements of Operations.

In addition, the reserves that we have established may be inadequate. If ultimate losses and loss expenses exceed the reserves currently established, we will be required to increase loss reserves in the period in which we identify the deficiency to cover any such claims. As a result, even when losses are identified and reserves are established for any line of business, ultimate losses and loss expenses may deviate, perhaps substantially, from estimates reflected in loss reserves in our financial statements. Variations between our loss reserve estimates and actual emergence of losses could be material and could have a material adverse effect on our results of operations and financial condition.

See Liquidity and Capital Resources—Reserves in Item 5 and Notes 2(b) and 8 to the Consolidated Financial Statements in Item 18 of this report for further details.

We rely on a few reinsurance brokers for a large percentage of our business; loss of business provided by these brokers would reduce our premium volume and net income.

We produce our business both through brokers and through direct relationships with insurance company clients. For the year ended December 31, 2018, more than 70% of our gross premiums written were produced through brokers. The Company has two brokers that each individually accounted for 22% of the Company's total gross premiums written for 2018 (see Note 19 to the Consolidated Financial Statements in Item 18 of this report for further details). Because broker-produced business is concentrated with a small number of brokers, we are exposed to concentration risk. A significant reduction in the business produced by these brokers could potentially reduce our premium volume and net income.

We are exposed to credit risk relating to our reinsurance brokers and cedants.

In accordance with industry practice, we may pay amounts owed under our reinsurance policies to brokers, and they in turn pay these amounts to the ceding insurer. In some jurisdictions, if the broker fails to make such an onward payment, we might remain liable to the ceding insurer for the deficiency. Conversely the ceding insurer may pay premiums to the broker for onward payment to

us in respect of reinsurance policies issued by us. In certain jurisdictions, these premiums are considered to have been paid to us at the time that payment is made to the broker, and the ceding insurer will no longer be liable to us for those amounts, whether or not we have actually received the premiums. We may not be able to collect all premiums receivable due from any particular broker at any given time. We also assume credit risk by writing business on a funds-withheld basis. At December 31, 2018, Funds held by reinsured companies recorded in the Consolidated Balance Sheet was $830 million. Under such arrangements, the cedant retains the premium they would otherwise pay to us to cover future loss payments.

If we are downgraded by rating agencies, our standing with brokers and customers could be negatively impacted and may adversely impact our results of operations.

Rating agencies assess and rate the claims-paying ability and financial strength of insurers and reinsurers, such as our principal operating subsidiaries. These ratings are based upon criteria established by the rating agencies and have become an important factor in establishing our competitive position in the market. Insured, insurers, ceding insurers and intermediaries use these ratings as one measure by which to assess the financial strength and quality of insurers and reinsurers. However, these ratings are not an evaluation directed to investors of our preferred shares or debt securities, and are not a recommendation to buy, sell or hold our preferred shares or debt securities.

Our financial strength ratings are subject to periodic review as rating agencies evaluate us to confirm that we continue to meet their criteria for ratings assigned to us by them. Such ratings may be revised downward or revoked at the sole discretion of such ratings agencies in response to a variety of factors, including capital adequacy, management strategy, operating earnings and risk profile. In addition, from time to time, one or more rating agencies may effect changes in their capital models and rating methodologies that could have a detrimental impact on our ratings. It is also possible that rating agencies may in the future heighten the level of scrutiny they apply when analyzing companies in our industry, may increase the frequency and scope of their reviews, may request additional information from the companies that they rate, and may adjust upward the capital and other requirements employed in their models for maintenance of certain rating levels. There can be no assurance that our ratings will remain at their current levels.

If our ratings were downgraded, our competitive position in the reinsurance industry may suffer, and it could result in a reduction in demand for our products. In addition, certain business that we write contains terms that give the ceding company or derivative counterparty the right to terminate cover and/or require collateral if our ratings are downgraded.

See Liquidity and Capital Resources in Item 5 of this report for our current financial strength ratings. The status of any further changes to ratings or outlooks will depend on various factors.

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 agencies and regulatory requirements, our ability to write new business successfully, the frequency and severity of catastrophic events, and our ability to establish premium rates and reserves at levels sufficient to cover losses. We may need to raise additional funds through financings or curtail our growth and reduce our assets. Any equity or debt financing, if available at all, may be on terms that are not favorable to us. Financings could result in the issuance of securities that have rights, preferences and privileges that are senior to those of our other securities. Disruption in the increasingly volatile financial markets may limit our ability to access capital required to operate our business and we may be forced to delay raising capital or bear a higher cost of capital, which could decrease our profitability and significantly reduce our financial flexibility. The large amounts of industry-wide catastrophe losses in 2018 (resulting from, among other things, typhoons Jebi and Trami, hurricanes Florence and Michael, and California wildfires) has made access to capital more challenging, potentially making it more difficult and more expensive for us to raise additional financing if necessary. In addition, 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. If we cannot obtain adequate capital on favorable terms or at all, our business, operating results and financial condition could be adversely affected. In such a severe event, we may be reliant on our parent company, EXOR Nederland N.V., to provide a further capital injection or contribution to us. However, all EXOR Group portfolio companies are managed independently and autonomously, and there can be no guarantee that EXOR Nederland N.V. would provide any additional capital.

Our investments are subject to interest rate, credit, equity and real estate related risks, which may adversely affect our net income and may adversely affect the adequacy of our capital.

We invest the net premiums we receive unless, or until such time as, we pay out losses and/or until they are made available for distribution to common and preferred shareholders, to pay interest on or redemption of debt and preferred shares, or otherwise used for general corporate purposes. Investment results comprise a substantial portion of our income. For the year ended December 31, 2018, we had net investment income of $416 million, which represented approximately 7% of total revenues. In addition, we recorded net realized and unrealized losses on investments of $390 million during 2018, which are included in the net loss for the year. We are accordingly exposed to significant financial and capital market risks, including changes in interest rates, credit spreads,

equity and real estate prices, foreign exchange rates, market volatility, the performance of the economy in general, and other factors outside our control.

Interest rates are highly sensitive to many factors, including fiscal and monetary policies of major economies, inflation, economic and political conditions and other factors outside our control. Changes in interest rates can negatively affect net investment income in that, in a declining interest rate environment, investments in fixed maturities and short-term investments (fixed maturity portfolio) would earn interest income at lower rates. In a declining interest rate environment, the market value of our fixed income portfolio would increase; however, in a rising interest rate environment, the market value of our fixed income portfolio will decline. Depending on our liquidity needs and investment strategy, we may liquidate investments prior to maturity at a loss in order to cover liabilities as they become due or to invest in other investment opportunities that have better expected longer term profitability.

Actions by regulators or law enforcement agencies in the U.K. and elsewhere may result in changes to the manner in which the London Interbank Offered Rate ("LIBOR") is determined or the establishment of alternative reference rates. In July 2017, the U.K. Financial Conduct Authority (the "FCA") announced that the FCA intends to stop persuading or compelling banks to submit rates for the calculation of LIBOR after 2021, which is expected to result in these widely used reference rates no longer being available. Potential changes to LIBOR, as well as uncertainty around such changes and the establishment of alternative reference rates, may adversely affect us. The discontinuance of LIBOR could have an adverse impact on the market for LIBOR-based securities or the value of our investment portfolio. There is currently no definitive information regarding the future utilization of LIBOR or of any particular replacement rate, and as such, the potential effect of any such event cannot yet be determined.

Our fixed maturity portfolio is primarily invested in high quality, investment grade securities. However, we invest a portion of the portfolio in securities that are below investment grade. We also invest a portion of our portfolio in other investments such as fixed income type funds, notes receivable, loans receivable, private placement bond investments, derivatives, and other specialty asset classes. These securities generally pay a higher rate of interest or return and may have a higher degree of credit or default risk. These securities may also be less liquid in times of economic weakness or market disruptions.

We also invest a portion of our portfolio in preferred and common stocks or equity-like securities. The value of these assets fluctuates with equity markets, which are increasingly volatile. In times of economic weakness, the market value and liquidity of these assets may decline, and may impact net income and capital. We use the term equity-like investments to describe our investments that have market risk characteristics similar to equities and are not investment grade fixed maturity securities. This category includes high-yield and convertible fixed maturity investments and private placement equity investments. Fluctuations in the fair value of our equity-like investments may reduce our income in any period or year and cause a reduction in our capital. As global equity markets are close to historically high levels, there can be no assurance that our equity-like investments will maintain their current levels.

In addition, we invest directly and indirectly in real estate assets, which are subject to overall market conditions. We have investments in real estate in various locations (including New York and Brazil) through investments in limited partnerships as well as through directly-owned investments in real estate and an equity method investment in a privately held real estate investment and development group, Almacantar Group S.A. (Almacantar) in London. These real estate assets are exposed to various risks, including the supply and demand of leasable commercial and residential space and fluctuations in real estate prices globally. See Item 4.D and Note 18 to the Consolidated Financial Statements in Item 18 below in this report for further details.

Foreign currency fluctuations may reduce our net income and our capital levels.

Through our multinational reinsurance operations, we conduct business in a variety of foreign (non-U.S.) currencies, the principal exposures being the Euro, British pound, Canadian dollar, Japanese yen and Swiss Franc. Accordingly, we are subject to market risks associated with devaluations and fluctuations in currency exchange rates. Our assets and liabilities denominated in foreign currencies are therefore exposed to changes in currency exchange rates, which may be material. Our reporting currency is the U.S. dollar, and exchange rate fluctuations relative to the U.S. dollar may materially impact our financial results and condition. We employ various strategies, including the use of foreign exchange forward contracts and other derivative financial instruments, to manage our exposure to foreign currency exchange risk. To the extent that these exposures are not fully offset or hedged, or the hedges are ineffective at mitigating adverse effects, our financial results and condition may be negatively impacted by fluctuations in foreign currency exchange rates.

We may suffer losses due to defaults by various counterparties, including issuers of investment securities, reinsurance contracts and derivatives.

Issuers or borrowers whose securities we hold, reinsurers, clearing agents, clearing houses, joint venture partners, derivative instrument counterparties and other financial intermediaries may default on their obligations 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 when a counterparty defaults, such collateral may be illiquid or proceeds from such collateral when liquidated may not be sufficient to

recover the full amount of the obligation. All or any of these types of default could have a material adverse effect on our results of operations, financial condition and liquidity.

Our debt, credit and International Swap Dealers Association (ISDA) agreements may limit our financial and operational flexibility, which may affect our ability to conduct our business.

We have incurred indebtedness, and may incur additional indebtedness in the future. At December 31, 2018 and 2017, our total Debt related to senior notes and capital efficient notes was approximately $1.4 billion.

Additionally, we have entered into letter of credit facilities and ISDA agreements (including, without limitation, weather derivatives) with various institutions. Under these credit facilities, the institutions provide revolving lines of credit to us and our major operating subsidiaries and issue letters of credit to our clients in the ordinary course of business.

The agreements relating to our debt, letter of credit facilities and ISDA agreements contain various covenants that may limit our ability, among other things, to borrow money, make particular types of investments or other restricted payments, sell assets, merge or consolidate. Some of these agreements also require us to maintain specified ratings and financial ratios. If we fail to comply with these covenants or meet required financial ratios, the lenders or counterparties under these agreements could declare a default and demand immediate repayment of all amounts owed to them. See Liquidity and Capital Resources—Shareholders' Equity and Capital Resources Management—Credit Agreements in Item 5 of this report.

If we are in default under the terms of these agreements, we may also be restricted in our ability to declare or pay any dividends, redeem, purchase or acquire any shares or make a liquidation payment.

If any one of the financial institutions that we use in our operations, including those that participate in our credit facilities, fails or is otherwise unable to meet their commitments, we could incur substantial losses and reduced liquidity.

We maintain cash balances significantly in excess of the U.S. Federal Deposit Insurance Corporation insurance limits at various depository institutions. We also have funding commitments from a number of banks and financial institutions that participate in our credit facilities. See Liquidity and Capital Resources—Shareholders' Equity and Capital Resources Management—Credit Agreements in Item 5 and Note 17 to the Consolidated Financial Statements in Item 18 of this report for details. Access to funds under these existing credit facilities is dependent on the ability of the banks that are parties to the facilities to meet their funding requirements. Those banks may not be able to meet their funding requirements if they experience shortages of capital and liquidity or if they experience excessive volumes of borrowing requests within a short period of time, and we might be forced to replace credit sources in a difficult market. If we cannot obtain adequate financing or sources of credit on favorable terms, or at all, our business, operating results and financial condition could be adversely impacted.

Strategic investments and merger and acquisition (M&A) activities could disrupt our ongoing business and present risks not originally contemplated.

We have made, and in the future may make, strategic investments or acquisitions. Such endeavors involve significant risks and uncertainties, including those related to distraction of management from current operations, greater than expected liabilities and expenses, inadequate return of capital and unidentified issues not discovered in due diligence. In addition, the integration of any acquired companies may place significant demands on our management, systems, internal controls and financial and physical resources. These new ventures or M&A activities are inherently risky and may not achieve the expected benefits.

Operational risks, including human or systems failures, are inherent in our business.

Operational risks and losses can result from many sources including fraud, errors by employees, failure to document transactions properly or to obtain proper internal authorization, failure to comply with regulatory requirements or information technology failures.

Our modeling, underwriting and information technology and application systems are critical to our business and reputation. Moreover, our technology and applications are an important part of our underwriting process and our ability to compete successfully. We have also licensed certain systems and data from third parties. We cannot be certain that we will have access to these, or comparable service providers, or that our technology or applications will continue to operate as intended. In addition, we cannot be certain that we would be able to replace these service providers or consultants without slowing our underwriting response time. A major defect or failure in our internal controls or information technology and application systems could result in management distraction, harm to our reputation, a loss or delay of revenues or increased expense.

Cybersecurity events could disrupt business operations, result in the loss of critical and confidential information, and adversely impact our reputation and results of operations.

We are dependent upon the effective functioning and availability of our information technology and application systems platforms. These platforms include, but are not limited to, our proprietary software programs such as catastrophe models as well as those licensed from third-party vendors including data storage, analytic and modeling systems. We rely on the security of such platforms for the secure processing, storage and transmission of confidential information. Examples of cybersecurity incidents are unauthorized access, computer viruses, deceptive communications (phishing), malware or other malicious code or cyber-attack, destructive attack, system failures and disruptions and other events that could have security consequences. A cybersecurity incident could materially impact our ability to adequately price products and services, establish reserves, provide efficient and secure services to our clients, brokers, vendors and regulators, value our investments and timely and accurately report our financial results. Although we have implemented controls and have taken protective measures to reduce the risk of cybersecurity incidents, we cannot reasonably anticipate or prevent all cybersecurity incidents. Cybersecurity incidents could expose us to a risk of loss or misuse of our information, litigation, reputational damage, violations of applicable privacy and other laws, fines, penalties or losses that are either not insured against or not fully covered by insurance maintained. We may be required to expend significant additional resources to modify our protective measures or to investigate and remediate vulnerabilities.

We believe there are frequent attempts to breach our cybersecurity measures. For example, in 2018 we encountered a phishing attempt where someone impersonating a senior executive sought payment; although the payment was initiated, we were able to detect the incident in time and stop the payment from being released. We cannot assure that our systems and processes will be able to identify and prevent such attempts in the future.

The loss of key management personnel could adversely affect us.

Our success has depended, and will continue to depend, partly upon our ability to attract and retain management personnel. If any of these key management employees ceased to continue in their present role, we could be adversely affected.

Our ability to execute our business strategy is dependent on our ability to attract and retain a staff of qualified executive officers, underwriters, actuaries and other key personnel. The skills, experience and knowledge of the reinsurance industry of our management team constitute important competitive strengths. If some or all of these managers leave their positions, and even if we were able to find persons with suitable skills to replace them, our operations could be adversely affected.

We may be adversely impacted by inflation.

Deficit spending by governments in our major markets and monetary stimulus provided by central banks exposes us to a heightened risk of inflation. We monitor the risk that the principal markets in which we operate could experience increased inflationary conditions, which would, among other things, cause policyholder loss costs to increase, and negatively impact the performance of our investment portfolio. Inflation related to medical costs, construction costs and tort issues in particular impact the property and casualty industry, and broader market inflation has the potential risk of increasing overall loss costs. The impact of inflation on loss costs could be more pronounced for those lines of business that are considered to be long-tail in nature, as they require a relatively long period of time to finalize and settle claims. Changes in the level of inflation also result in an increased level of uncertainty in our estimation of loss reserves, particularly for long-tail lines of business. The onset, duration and severity of an inflationary period cannot be estimated with precision.

Risks Related to Our Industry

Our profitability is affected by the cyclical nature of the reinsurance industry.

Historically, the reinsurance industry has experienced significant fluctuations in operating results due to competition, levels of available capacity, trends in cash flows and losses, general economic conditions and other factors, particularly in the Non-life lines of business. Demand for reinsurance is influenced significantly by underwriting results of primary insurers, including catastrophe losses, and prevailing general economic conditions. The supply of reinsurance is related directly to prevailing prices and levels of capacity that, in turn, may fluctuate in response to changes in rates of return on investments being realized in the reinsurance industry. In addition, the cycle of our industry may fluctuate as a result of changes in the economic, legal, political and social landscape. Since cyclicality is due in large part to the collective actions of insurers, reinsurers and general economic conditions and the occurrence of unpredictable events, we cannot predict the timing or duration of changes in the market cycle. If any of these factors were to result in a decline in the demand for reinsurance or an overall increase in reinsurance capacity, our profitability could be impacted. In the recent past, we have experienced a generally softening market cycle, with increased competition, surplus underwriting capacity, deteriorating rates and less favorable terms and conditions, all having an impact on our ability to write business.

Although we are currently experiencing improving market conditions with increased or constant pricing in most Non-life classes, primarily in those markets that have been exposed to the catastrophe losses in 2018, as a result of the persisting competition and excess capacity in the industry, it is not possible to forecast if improving pricing conditions will continue.

Competition, pricing pressure and any other negative factors noted above may adversely affect our profitability and results of operations in future periods, and the impact may be material.

We operate in a highly competitive environment.

The reinsurance industry is highly competitive and we compete with a number of worldwide reinsurance companies, including, Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft (Munich Re), Swiss Re Ltd. (Swiss Re), Hannover Rück SE (Hannover Re), SCOR SE, Transatlantic Reinsurance Company Inc. (Transatlantic), General Reinsurance Corporation (GenRe), Reinsurance Group of America, Incorporated (RGA), Everest Re Group, Ltd. (Everest Re) and RenaissanceRe Holdings Ltd. (RenRe).

The lack of strong barriers to entry into the reinsurance business means that we may also compete with new companies that may be formed to enter the reinsurance market. In addition, we may experience increased competition as a result of the consolidation in the insurance and reinsurance industry. These consolidated entities may try to use their enhanced market power and relationships to negotiate price reductions for our products and services and/or obtain a larger market share through increased line sizes. Consolidated companies may also purchase less reinsurance product and services, due to increased levels of capital.

Competition in the types of reinsurance that we underwrite is based on many factors, including the perceived and relative financial strength, pricing and other terms and conditions, services provided, ratings assigned by independent rating agencies, speed of claims payment, geographic scope of business, client and broker relationships, reputation and experience in the lines of business to be written. If competitive pressures reduce our prices, we may expect to write less business. In addition, competition for customers would become more intense and we could incur additional expenses relating to customer acquisition and retention, further reducing our operating margins.

Further, insurance-linked securities, derivatives and other non-traditional risk transfer mechanisms and alternative vehicles are being developed and offered by other parties, which could impact the demand for traditional insurance or reinsurance. A number of new, proposed or potential industry or legislative developments could further increase competition in our industry. New competition from these developments could cause the demand for reinsurance and/or prices to fall or the costs related to client acquisition and retention to increase, either of which could have a material adverse effect on our growth and profitability.

All of the above factors may adversely affect our profitability and results of operations in future periods, the impact of which may be material, and may adversely affect our ability to successfully execute our strategy as a global diversified reinsurance company.

Legal and Regulatory Risks

Political, regulatory, governmental and industry initiatives could adversely affect our business.

Our reinsurance operations are subject to extensive laws and regulations that are administered and enforced by a number of different governmental and non-governmental self-regulatory authorities and associations in each of their respective jurisdictions and internationally. Our businesses in each jurisdiction are subject to varying degrees of regulation and supervision. The laws and regulations of the jurisdictions in which our reinsurance subsidiaries are domiciled require, among other things, maintenance of minimum levels of statutory capital, surplus, and liquidity; various solvency standards; and periodic examinations of subsidiaries' financial condition. In some jurisdictions, laws and regulations also restrict payments of dividends and reductions of capital. Applicable statutes, regulations, and policies may also restrict the ability of these subsidiaries to write insurance and reinsurance policies, to make certain investments, and to distribute funds.

Some of these authorities regularly consider enhanced or new regulatory requirements intended to prevent future crises or otherwise assure the stability of institutions under their supervision. These authorities may also seek to exercise their supervisory authority in new and more robust ways, and new regulators could become authorized to oversee parts of our business.

It is not possible to predict all future impacts of these types of changes but they could affect the way we conduct our business and manage our capital, and may require us to satisfy increased capital requirements or to incur additional expenses, any of which, in turn, could affect our results of operations, financial condition and liquidity. Our material subsidiaries' regulatory environments are described in detail in Business Overview—Regulation in Item 4 of this report. For example, our regulated reinsurance subsidiaries across the European Union (EU) are subject to the Directive 2009/138/EC (EU directive) of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II).

If our compliance with any particular regulatory regime is challenged, we may be subject to monetary or other penalties. In addition, in order to ensure compliance with applicable regulatory requirements or as a result of any investigation, including remediation efforts, we could be required to incur expenses and undertake additional work, which in turn may divert resources from our business. These, and other regulations relating to each of our material subsidiaries may in effect restrict each of those subsidiaries' ability to write new business, to make certain investments and to distribute funds or assets to us. In 2018, two of our European subsidiaries were found to breach certain Solvency II requirements related to the 2016 regulatory filings, resulting in an administrative sanction of EUR1.5 million. For further information see Business Overview—Regulation in Item 4 of this report.

On March 12, 2019, the EU announced that it had added Bermuda to its list of non-compliant jurisdictions for tax purposes due to a certain deficiency with Bermuda's Economic Substance Legislation. If the EU believes this deficiency is not fully addressed and Bermuda remains on the list, Bermuda companies could be subject to penalties and sanctions as well as suffer reputational damage.

Recent government intervention and the possibility of future government intervention have created uncertainty in the insurance and reinsurance markets. Government regulators are generally concerned with the protection of policyholders to the exclusion of other interested parties, including shareholders and debt holders of reinsurers. We believe it is likely there will continue to be increased regulation of, and other forms of government participation in, our industry in the future, which could materially adversely affect our business by, among other things:

- Providing reinsurance capacity in markets and to clients that we target or requiring our participation in industry pools and guaranty associations;
- Further restricting our operational or capital flexibility;
- Expanding the scope of coverage under existing policies;
- Regulating the terms of reinsurance policies;
- Adopting further or changing compliance requirements which may result in additional costs which may adversely impact our results of operation; or
- Disproportionately benefiting the companies domiciled in one country over those domiciled in another.

Legislative and regulatory activity in healthcare may affect our profitability as a provider of accident and health reinsurance products.

We derive revenues, in part, from the provision of accident and health reinsurance in the U.S. to institutions that participate in the U.S. healthcare delivery infrastructure. The Patient Protection and Affordable Care Act of 2010 (the Healthcare Act) made significant changes to the regulation of health insurance and may negatively affect our U.S. health reinsurance business including, but not limited to, the healthcare delivery system and the healthcare cost reimbursement structure in the U.S. In addition, we may be subject to regulations, guidance or determinations emanating from the various regulatory authorities authorized under the Healthcare Act. It is difficult to predict the effect that the Healthcare Act, any regulatory pronouncement made thereunder or changes to the Healthcare Act will have on our results of operations or financial condition. In addition, it is not possible to predict whether new legislation, rules or regulatory changes will be adopted or enacted in the future or what impact, if any, such legislation, rules or changes could have on our business, financial condition or results of operations.

Legal and enforcement activities relating to the insurance industry could affect our business and our industry.

The insurance industry has experienced substantial volatility as a result of litigation, investigations and regulatory activity by various insurance, governmental and enforcement authorities concerning certain practices within the insurance industry.

These investigations have resulted in changes in the insurance and reinsurance markets and industry business practices. While at this time, none of these changes have caused an adverse effect on our business, we are unable to predict the potential effects, if any, that future investigations may have upon our industry. As noted above, because we frequently assume the credit risk of the counterparties with whom we do business throughout our insurance and reinsurance operations, our results of operations could be adversely affected if the credit quality of these counterparties is severely impacted by investigations in the reinsurance or insurance industry or by changes to industry practices.

Emerging claim and coverage issues could adversely affect our business.

Unanticipated developments in the law, as well as changes in social and environmental conditions could potentially result in unexpected claims for coverage under our reinsurance and other contracts. These developments and changes may adversely affect our business by either extending coverage beyond our underwriting intent or by increasing the number or size of claims. With respect to our casualty businesses, these legal, social and environmental changes may not become apparent until sometime after

their occurrence. Our exposure to these uncertainties could be exacerbated by an increase in insurance and reinsurance contract disputes, arbitration and litigation.

The full effects of these and other unforeseen emerging claim and coverage issues are extremely hard to predict. In some instances, these coverage changes may not become apparent until after we have issued reinsurance contracts that are affected by such changes. As a result, the full extent of our liability under such reinsurance contracts and, in particular, our casualty reinsurance contracts, may not be known for many years after a contract is issued.

The reinsurance industry is also affected by political, judicial and legal developments that may create new and expanded theories of liability, which may result in unexpected claim frequency and severity and delays or cancellations of products and services we provide, which could adversely affect our business.

The vote by the U.K. to leave the EU could adversely affect our business.

As a result of Brexit, negotiations to determine the terms of the U.K.'s withdrawal from the EU and its future relationship with the EU are ongoing. As a result, we face risks associated with the potential uncertainty and consequences that may follow Brexit, including with respect to volatility in financial markets, exchange rates and interest rates. These uncertainties could increase the volatility of, or reduce, our investment results in particular periods or over time. Brexit could adversely affect European or worldwide political, regulatory, economic or market conditions and could contribute to instability in global political institutions and regulatory agencies. Brexit could also lead to legal uncertainty and differing laws and regulations between the U.K., and the EU, and could impair or adversely affect the ability of the Lloyd's market to transact business in EU countries, particularly in respect of primary or direct insurance business as to which we currently rely on the licensure afforded to syndicates at Lloyd's for access to EU markets. In addition, these uncertainties to Brexit could affect the operations, strategic position or results of insurers or reinsurers on whom we ultimately rely to access underlying insured coverages. Any of these potential effects of Brexit, and others we cannot anticipate, could adversely affect our results of operations or financial condition.

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

Our activities are subject to applicable economic and trade sanctions, anti-bribery and money laundering laws and regulations in the jurisdictions where we operate including the U.S. and the EU, among others. Compliance with these regulations may impose significant costs, limit or restrict our ability to do business or engage in certain activities, or subject us to the possibility of civil or criminal actions or proceedings. Although we have policies and controls in place designed to comply with applicable laws and regulations, there can be no assurance that we, or an employee or agent acting on our behalf would fully comply with applicable laws and regulations as interpreted by the relevant authorities. The divergence of regulatory requirements between U.S. and EU entities and persons regarding business with Iran has increased these risks. Failure to accurately interpret or comply with or obtain appropriate authorizations and/or exemptions under such laws or regulations could expose us to investigations, civil penalties, criminal penalties and other sanctions, including fines, injunctions, loss of licenses or other punitive actions. In addition, such violations could damage our business and/or our reputation. Such criminal or civil sanctions, penalties, other sanctions, and damage to our business and/or reputation could have a material adverse effect on our financial condition and results of operations.

Our business is subject to applicable laws and regulations relating to data privacy and protection and cybersecurity, the changes or the violation of which could affect our operations.

Regulatory authorities around the world have implemented or are considering a number of legislative changes or regulations concerning data protection and cybersecurity which have required or may require us to incur additional expenses. We are subject to numerous U.S. federal and state laws and non-U.S. regulations governing the protection of personal and confidential information of our clients or employees, including in relation to medical records and financial information. Existing cybersecurity regulations vary by region or country in which PartnerRe operates and cover different aspects of business operations.

Our business is subject to General Data Protection Regulation (GDPR) which regulates data protection for all individuals within the EU, including foreign companies processing data of EU residents; it enhances individuals' rights, introduces complex and far-reaching company obligations and increases penalties significantly in case of violation. The GDPR sets out a number of requirements that must be complied with when handling personal data including: the obligation to appoint data protection officers in certain circumstances and the principal of accountability and the obligation to make public notification of significant data breaches. The interpretation and application of data protection laws in the U.S., Europe and elsewhere are developing and are often uncertain and in flux. It is possible that these laws or cybersecurity regulations may be interpreted and applied in a manner that is inconsistent with our data protection or security practices. If so, in addition to the possibility of fines, this will result in an order requiring that we change our data practices, which could have an adverse effect on our business and results of operations. Complying with these various laws will cause us to incur additional costs and could require us to change our business practices.

As a group operating worldwide, we strive to comply with all applicable data protection laws and regulations. It is however possible that we fail to comply with all applicable laws and regulations. The failure or perceived failure to comply may result in inquiries and other proceedings or actions against us by government entities or others, including monetary fees, or could cause us to lose clients which could potentially have an adverse effect on our business and results of operations.

See also Business Overview—Regulation in Item 4 for further details on cybersecurity requirements.

Changes in current accounting practices and future pronouncements may materially impact our reported financial results.

Developments in accounting practices may require considerable additional time and cost to comply, particularly if we are required to prepare information relating to prior periods for comparative purposes or to apply the new requirements retroactively. The impact of changes in current accounting practices and future pronouncements may be significant. The impact may affect the results of our operations, including among other things, the calculation of net income, and may affect our financial position, including among other things, the calculation of unpaid losses and loss expenses, policy benefits for life and annuity contracts and total shareholders' equity. See Note 2(r) to the Consolidated Financial Statements in Item 18 in this report for details of recent accounting pronouncements.

Risks Related to Our Preferred Shares

PartnerRe Ltd. is a holding company, and if our subsidiaries do not pay dividends or make other distributions to us, we may not be able to pay dividends on our preferred shares or settle principal payments as they become due.

PartnerRe Ltd. is a holding company with no operations to generate income to provide liquidity other than the cash received for issuance of common shares and preferred shares. We have cash outflows in the form of other expenses and dividends to both common and preferred shareholders. We rely primarily on cash dividends and payments from our subsidiaries to meet our cash outflows. We expect future dividends and other permitted payments from our subsidiaries to be the principal source of funds to pay expenses and dividends. The ability of our subsidiaries to pay dividends or to advance or repay funds to us is subject to general economic, financial, competitive, regulatory and other factors beyond our control. In particular, the payment of dividends by our reinsurance subsidiaries is limited under Bermuda and Irish laws and certain statutes of U.S. states in which our U.S. subsidiaries are domiciled, which statutes include minimum solvency and liquidity thresholds (see Note 12 to the Consolidated Financial Statements in Item 18 of this report for a description of various regulatory and statutory restrictions on dividend payments applicable to our reinsurance subsidiaries). Because we are a holding company, our right, and hence the right of our creditors and shareholders, to participate in any distribution of assets by any of our subsidiaries, upon our liquidation or reorganization or otherwise, is subject to the prior claims of policyholders and creditors of these subsidiaries.

Our controlling shareholder owns a significant majority of our common shares, and its interest may differ from the interests of our preferred shareholders.

EXOR Nederland N.V. owns approximately 99.7% of the outstanding common shares of the Company. As a result, EXOR Nederland N.V. has power to elect our directors and to determine the outcome of any action requiring shareholder approval. EXOR's interests may differ from the interests of the holders of our preferred shares and, given EXOR Nederland N.V.'s majority controlling interest in the Company, circumstances may arise under which EXOR Nederland N.V. may exercise its control in a manner that is not favorable to the interests of the holders of the preferred shares.

Preferred shareholders may encounter difficulties in service of process and enforcement of judgments against us in the United States.

We are a Bermuda company and some of our directors and officers are residents of various jurisdictions outside the U.S. All, or a substantial portion, of the assets of our officers and directors and of our assets are or may be located in jurisdictions outside the U.S. Although we have appointed an agent and irrevocably agreed that the agent may be served with process in New York with respect to actions against us arising out of violations of the U.S. Federal securities laws in any Federal or state court in the U.S., it could be difficult for investors to effect service of process within the U.S. on our directors and officers who reside outside the U.S. It could also be difficult for investors to enforce against us or our directors and officers judgments of a U.S. court predicated upon civil liability provisions of U.S. Federal securities laws.

There is no treaty in force between the U.S. and Bermuda providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. As a result, whether a U.S. judgment would be enforceable in Bermuda against us or our directors and officers depends on whether the U.S. court that entered the judgment is recognized by the Bermuda court as having jurisdiction over us or our directors and officers, as determined by reference to Bermuda conflict of law rules. A judgment debt from a U.S. court that is final and for a sum certain based on U.S. Federal securities laws will not be enforceable in Bermuda unless the judgment debtor had submitted to the jurisdiction of the U.S. court, and the issue of submission and jurisdiction is a matter of Bermuda law and not U.S. law.

In addition to and irrespective of jurisdictional issues, Bermuda courts will not enforce a U.S. Federal securities law that is either penal or contrary to public policy. An action brought pursuant to a public or penal law, the purpose of which is the enforcement of a sanction, power or right at the instance of the state in its sovereign capacity will not be entered by a Bermuda court. Certain remedies available under the laws of U.S. jurisdictions, including certain remedies under U.S. Federal securities laws, would not be available under Bermuda law or enforceable in Bermuda court, as they would be contrary to Bermuda public policy. Further, no claim can be brought in Bermuda against us or our directors and officers in the first instance for violation of U.S. Federal securities laws because these laws have no extra jurisdictional effect under Bermuda law and do not have force of law in Bermuda. A Bermuda court may, however, impose civil liability 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.

Taxation Risks

Changes in our effective income tax rate could affect our results of operations.

Our effective income tax rate could be adversely affected in the future by net income being lower than anticipated in jurisdictions where we have a relatively lower statutory tax rate and net income being higher than anticipated in jurisdictions where we have a relatively higher statutory tax rate, or by changes in corporate tax rates and tax regulations in any of the jurisdictions in which we operate. We are subject to regular audit by tax authorities in the various jurisdictions in which we operate. Any adverse outcome of such an audit could have an adverse effect on our net income, effective income tax rate and financial condition.

In addition, the determination of our provisions for income taxes requires significant judgment, and the ultimate tax determination related to some tax positions taken is uncertain. Although we believe our provisions are reasonable, the ultimate tax outcome may differ from the amounts recorded in our consolidated financial statements and may materially affect our net income and effective income tax rate in the period such determination is made.

If our non-U.S. operations become subject to U.S. income taxation, our net income will decrease.

We believe that we and our non-U.S. subsidiaries, other than certain business sourced by Partner Reinsurance Europe SE (PartnerRe Europe) and PartnerRe Ireland dac (PartnerRe Ireland) through the U.S., and a foreign reinsurance entity that has elected under I.R.C Section 953(d) to be treated as a domestic corporation (953(d) electing reinsurer), have operated, and will continue to operate, our respective businesses in a manner that will not cause us to be viewed as engaged in a trade or business in the U.S. and, on this basis, we do not expect that either we or our non-U.S. subsidiaries (other than PartnerRe Europe, PartnerRe Ireland, and the 953(d) electing reinsurer) will be required to pay U.S. corporate income taxes (other than potential withholding taxes on certain types of U.S. source passive income) or branch profits taxes. Because there is considerable uncertainty as to the activities that constitute being engaged in a trade or business within the U.S., the IRS may contend that either we or our non-U.S. subsidiaries are engaged in a trade or business in the U.S. In addition, legislation regarding the scope of non-U.S. entities and operations subject to U.S. income tax has been proposed in the past, and may be proposed again in the future. If either we or our non-U.S. subsidiaries are subject to U.S. income tax, our net income and shareholders' equity will be reduced by the amount of such taxes, which might be material.

The Organization for Economic Co-operation and Development's (OECD) initiative to limit harmful tax competition may result in higher taxation and increased complexity, burden and cost of compliance.

The OECD has published reports and 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. On June 21, 2016, the EU's ministers of Finance and Economic Affairs unanimously approved the Anti-Tax Avoidance Directive to harmonize potential BEPS changes in the EU. These measures are largely directed at counteracting the effects of tax havens and preferential tax regimes in countries around the world. We expect that countries may change their tax laws in response to this project, and several countries have already changed or proposed changes to their tax laws. Changes to tax laws and additional reporting requirements could increase the complexity, burden and cost of doing business with our Bermuda companies and/or subject our Bermuda companies to increased tax and compliance burdens.

Our tax position could be adversely impacted by changes in tax laws, tax treaties or tax regulations or the interpretation or enforcement thereof.

We could be adversely impacted by changes in tax laws, tax treaties or tax regulations or the interpretation or enforcement thereof by taxation authorities. Changes could have a material and adverse change in our worldwide effective tax rate and we may have to take further action to seek to mitigate the effect of such changes. Any future amendments to existing income tax treaties between the jurisdictions in which we operate, could subject us to increased taxation and/or potentially significant expense.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

PartnerRe Ltd., an exempt company incorporated under the laws of Bermuda in 1993 with limited liability, is the holding company for our international reinsurance group (PartnerRe group). The principal office is located at 90 Pitts Bay Road, Pembroke, Bermuda (telephone number: +1 441-292-0888). The Company predominantly provides reinsurance on a worldwide basis through its principal wholly-owned subsidiaries, including Partner Reinsurance Company Ltd. (PartnerRe Bermuda), Partner Reinsurance Europe SE (PartnerRe Europe), Partner Reinsurance Company of the U.S. (PartnerRe U.S.) and Partner Reinsurance Asia Pte. Ltd. (PartnerRe Asia). The Company's principal office in the U.S. is located at 200 First Stamford Place, Stamford, Connecticut (telephone number: +1 203-485-4200).

The Company maintains an internet site at www.partnerre.com that contains the Company's Annual Reports on Form 20-F filed with the U.S. Securities and Exchange Commission (SEC) and Current Reports on Form 6-K furnished with the SEC. These Reports are also available on the internet site maintained by the SEC at www.sec.gov.

The Company completed the acquisition of Societe Anonyme Francaise de Reassurances (SAFR, subsequently renamed PartnerRe SA) in 1997, the acquisition of Winterthur Re in 1998, the acquisition of PARIS RE Holdings Limited (Paris Re) in 2009, the acquisition of Presidio Reinsurance Group, Inc. (Presidio) in 2012, and the acquisition of Aurigen Capital Limited (Aurigen) in 2017. The acquisition of Aurigen, a North American life reinsurance company, was completed on April 3, 2017 by purchasing 100% of the outstanding ordinary shares for CAD 370 million (or approximately $278 million), and has enabled the Company to expand its life reinsurance footprint in Canada and the U.S. with limited overlap in market coverage.

On March 18, 2016, following receipt of regulatory approvals, the Company's publicly held common shares were acquired by Exor N.V., a subsidiary of EXOR S.p.A., one of Europe's leading investment companies controlled by the Agnelli family. In October 2016, Exor N.V. changed its name to EXOR Nederland N.V. In December 2016, EXOR S.p.A. merged with and into EXOR HOLDING N.V., a newly formed entity organized in the Netherlands and, in conjunction with the merger, EXOR HOLDING N.V. changed its name to EXOR N.V. EXOR N.V. is listed on the Milan Stock Exchange. As a result of the acquisition, PartnerRe's publicly issued common shares were cancelled and are no longer traded on the NYSE. The Company's preferred shares continue to be traded on the NYSE.

At December 31, 2018 and 2017, the Company's Class A shares owned by EXOR Nederland N.V. are included in Shareholders' Equity in the Consolidated Balance Sheets. In 2017 and 2018, the Company also issued Class B shares to certain executives of the Company which are included in Accounts payable, accrued expenses and other in the Consolidated Balance Sheets (see Share Ownership section in Item 6 and Note 14 to the Consolidated Financial Statements in Item 18 of this report for further details).

B. Business Overview

The Company provides reinsurance for its clients globally. The Company's principal offices are located in Hamilton (Bermuda), Dublin, Stamford (Connecticut, U.S.), Toronto, Paris, Singapore and Zurich.

The Company provides reinsurance of risks to ceding companies (cedants or reinsureds). Risks reinsured include, but are not limited to, agriculture, aviation/space, casualty, catastrophe, energy, engineering, financial risks, marine, motor, multiline and property as well as mortality, longevity, and accident and health and alternative risk products. The Company's alternative risk products include weather and credit protection to financial, industrial and service companies on a worldwide basis.

Reinsurance is offered on either a proportional or non-proportional basis through treaties or facultative reinsurance:

- In a proportional (or quota share) treaty reinsurance agreement, the reinsurer assumes a proportional share of the original premiums and losses incurred by the cedant. The reinsurer pays the ceding company a commission, which is generally based on the ceding company's cost of acquiring the business being reinsured (including commissions, premium taxes, assessments and miscellaneous administrative expenses) and may also include a profit.
- In a non-proportional (or excess of loss) treaty reinsurance agreement the reinsurer indemnifies the reinsured against all or a specified portion of losses on underlying insurance policies in excess of a specified amount, which is called a retention or attachment point. Non-proportional business is written in layers and a reinsurer or group of reinsurers accepts a band of coverage up to a specified amount. The total coverage purchased by the cedant is referred to as a program and is typically placed with predetermined reinsurers in pre-negotiated layers. Any liability exceeding the upper limit of the program reverts to the ceding company.

- In a facultative (proportional or non-proportional) reinsurance agreement the reinsurer assumes individual risks. The reinsurer separately rates and underwrites each risk rather than assuming all or a portion of a class of risks, as in the case of treaty reinsurance.

The majority of the Company's gross premiums written were written on a proportional basis for each of the years ended December 31, 2018, 2017 and 2016.

The Company monitors the performance of its operations in three worldwide business units comprised of Property & Casualty (P&C), Specialty, and Life and Health, which represent its segments. Effective July 1, 2018, the Company realigned its Life and Health and P&C segments, to reflect the reallocation of the executive responsibilities for U.S. health business to the P&C segment. Following this realignment, the P&C segment is comprised of property and casualty business, including U.S. health business. The P&C segment includes worldwide property catastrophe and facultative risks. U.S. health business comprises reinsurance coverage to primary life insurers with respect to individual and group health risks, including specialty accident and health business such as Health Maintenance Organizations (HMO) reinsurance, medical reinsurance and provider and employer excess of loss programs. The Company's Life and Health segment includes mortality, morbidity, and longevity business. The Specialty segment is comprised of specialty business, including treaty and facultative contracts. The combined business included in the P&C and Specialty segments is collectively referred to in this report as Non-life business.

See Results by Segment in Item 5 of this report and Note 19 to the Consolidated Financial Statements in Item 18 of this report for further details on Segments.

Premium Distribution

The Company's businesses are geographically diversified with premiums written on a worldwide basis. The Company's gross premiums written by segment for the years ended December 31, 2018, 2017 and 2016 are as follows (in millions of U.S. dollars):

	2018		2017[1]		2016[1]	
	$	%	$	%	$	%
Non-life business:						
P&C segment	**$ 3,015**	**48%**	$ 2,671	48%	$ 2,633	49%
Specialty segment	**2,050**	**32**	1,934	34	1,920	36
Total Non-life business	**$ 5,065**	**80%**	$ 4,605	82%	$ 4,553	85%
Life and Health segment	**1,235**	**20**	983	18	804	15
	$ 6,300	**100%**	$ 5,588	100%	$ 5,357	100%

(1) Gross premiums written for U.S. health business for 2018 has been included in the P&C segment and the impacted 2017 and 2016 comparatives have been reclassified from the Life and Health to the P&C segment to conform to current presentation as a result of the reallocation of executive responsibilities referred to above.

See Operating Results—Results by Segment in Item 5 and Note 19 to the Consolidated Financial Statements in Item 18 of this report for results by segment.

Distribution Channels

The Company generates business through brokers and through direct relationships with insurance companies. For the years ended December 31, 2018, 2017 and 2016, the Company had two brokers that individually accounted for 10% or more of the Company's total gross premiums written. Each of these two brokers individually accounted for 22% of the Company's total gross premiums written for 2018 (see Note 19 to the Consolidated Financial Statements in Item 18 of this report for further details). No one cedant accounted for more than 10% of the Company's total gross premiums written.

The gross premiums written in each of the Company's segments for the years ended December 31, 2018, 2017 and 2016, and the year-over-year comparisons, are described in Operating Results—Results by Segment in Item 5 of this report.

See Note 19 to the Consolidated Financial Statements in Item 18 of this report for the geographic distribution of the Company's total gross premiums written for the years ended December 31, 2018, 2017 and 2016.

Competition

The Company competes with other reinsurers, some of which have greater financial, marketing and management resources than the Company, and also competes with new market entrants, and, specifically in the catastrophe line of business, with alternative capital sources and insurance-linked securities. Competition in the types of reinsurance that the Company underwrites is based on

many factors, including the perceived and relative financial strength, pricing and other terms and conditions, services provided, ratings assigned by independent rating agencies, speed of claims payment, and reputation and experience in the lines of business to be written.

Management believes the Company ranks among the world's largest professional reinsurers and is well positioned in terms of client services and highly technical underwriting expertise. Management also believes that the Company's global franchise and diversified platform allows the Company to provide broad risk solutions across many lines of business and geographies, and is increasingly attractive to cedants who are choosing to utilize fewer reinsurers by consolidating their reinsurance panels and focusing on those reinsurers who can cover more than one line of business. Furthermore, the Company's capitalization and strong financial ratios allow the Company to demonstrate a solid balance sheet to its clients.

Management believes that the Company's major competitors for the Company's Non-life business are the larger European, U.S. and Bermuda-based international reinsurance companies, as well as specialty reinsurers and regional companies in certain local markets. These competitors include Munich Re, Swiss Re, Hannover Re, SCOR SE, Transatlantic, GenRe, Everest Re, and RenRe.

For the Company's Life business, the competition differs by location but generally includes multi-national reinsurers and local reinsurers or state-owned insurers in the U.K., Ireland and Continental Europe for its mortality and longevity lines of business. The competition specifically related to the Health business generally includes departments of worldwide reinsurance companies. These competitors include Munich Re, RGA, Swiss Re, Hannover Re, SCOR SE and GenRe.

Risk Management

In the reinsurance industry, the core of the business model is the assumption and management of risk. A key challenge is to create shareholder value through the intelligent and optimal assumption and management of reinsurance and investment risks while limiting and mitigating those risks that can destroy value, those risks for which the organization is not sufficiently compensated, and those risks that could threaten the ability of the Company to achieve its objectives. The Company defines a capital-based risk appetite and then looks for risks that meet its return targets within that framework. Management believes that this construct allows the Company to deliver to shareholders an adequate risk adjusted return, while ensuring appropriate margins exist to pay policyholders' claims.

Successful risk management is the foundation of the Company's value proposition. The Company's ability to succeed in risk assumption and business management is dependent on its ability to accurately analyze and quantify risk, to understand volatility and how risks aggregate or correlate, and to establish the appropriate capital requirements and limits for the risks assumed. All risks, whether they are reinsurance-related risks or capital market risks, are managed by the Company within an integrated framework of policies and processes to ensure the intelligent and consistent evaluation and valuation of risk, and to ultimately provide an appropriate return to shareholders.

The Company's results are primarily determined by how well the Company understands, prices and manages assumed risk. Management also believes that every organization faces numerous risks that could threaten the successful achievement of its goals and objectives. These include strategic, financial and operational risks that are common to all industries, such as choice of strategy and markets, economic and business cycles, competition, changes in regulation, data quality and security, fraud, business disruption and management continuity. See also Risk Factors above.

The Enterprise Risk Management (ERM) Framework sets forth a cycle that fosters continuous review of the Company's risk profile with tools and processes to effectively manage the Company's risks. The ERM cycle consists of the following components:

Risk Governance and Risk Culture: The Company's risk oversight structure and values for managing risks across the organization.

Risk Strategy: The Company's effective risk management process to identify and assess risks in order to determine the Company's appropriate risk appetite and tolerance limits to support the Company's business objectives.

Risk Reporting: The Company's risk management information reporting process aims to maintain management awareness of top risk exposures and changes in risk profile.

Risk Governance and Risk Culture

The Company has a clearly defined governance structure for risk management and the Company's risk culture emphasizes risk ownership throughout levels of the organization. The objective of the approach is to increase transparency over the roles and responsibilities that warrants clear risk ownership.

The Company has established an Enterprise Risk Committee (ERC) which, in conjunction with the Board, are responsible for setting the Company's risk appetite and return expectations. The ERC consists of the Executive Leadership Team, in addition to the Head of Capital & Risk, the Chief Legal Counsel and the Chief Audit Officer. The ERC provides oversight through the quarterly monitoring of the Risk Tolerance including the review of the Tier 1 and 2 risk exposures (which are described below) in comparison to the risk appetite as well as the periodic review of the capital model and capital allocation, modelling techniques and internal audit results.

The Company's risk framework, including key risk policies, is recommended by Executive Management through the ERC and approved by the Board. Each of the Company's risk policies relates to a specific risk and describes the Company's approach to risk management, defines roles and responsibilities relating to the assumption, mitigation, and control processes for that risk, and an escalation process for exceptions. Risk management policies and processes are coordinated by the Capital & Risk department and compliance is verified by Internal Audit on a periodic basis. The audit results are monitored by the Audit Committee of the Board.

The Company utilizes a multi-level risk management structure where the Executive Management and Board are responsible for the establishment of the critical exposure limits, capital at risk and key policies. The Business Units (BUs) are responsible for the execution of business activities and related risk mitigation strategies. These activities are represented in risk control practices embedded in the BUs which support the high level policies. Reporting on risk management activities is integrated within the Company's annual planning process, quarterly operations reports, periodic reports on exposures and large losses, and presentations to the Executive Management and Board. The BUs are responsible for these activities and Internal Audit periodically evaluates the effectiveness of the risk control procedures.

Risk Strategy

The Company performs a risk assessment that is used to identify and assess the Company's key risks. This risk assessment uses the Risk Universe as the structure for the classification of its key risks to be assessed in order to determine the Company's risk profile and the appropriateness of its risk strategy. Additionally, the assessment is strengthened by the performance of risk stresses and scenarios in line with the Company's Stress Testing Framework. The Risk Strategy is further developed through the Risk Appetite and Risk Tolerance Framework which is used to define risk limits.

Risk Strategy: Risk Universe

The Company structures its risks within a Risk Universe which is comprised of the following risk categories: Strategic, Reinsurance, Financial Market and Credit, Operational, Emerging and Reputational.

Strategic Risk

Strategic risk is the risk of inadequate decision-making, poor execution of the Company's strategic objectives and the risk of a misalignment between the Company's existing strategy and the external environment that could threaten the competitive position and the ability to ensure ongoing profitability and viability.

Strategic risks are discussed and agreed to between the CEO and the Board, and managed by the CEO, and include the direction and governance of the Company, as well as its response to key external factors faced by the reinsurance industry, such as changes in cedants' risk retention behavior, regulation, competitive structure, and macroeconomic, legal and social trends.

Reinsurance Risk

The Company's underwriting is conducted at the Business Unit level through specialized underwriting teams with the support of technical staff in disciplines such as actuarial, claims, legal, risk management and finance.

The Company's underwriters develop close working relationships with their ceding company counterparts and brokers through regular visits, gathering detailed information about the cedant's business and local market conditions and practices. As part of the underwriting process, the underwriters also focus on the reputation and quality of the proposed cedant, the likelihood of establishing a long-term relationship with the cedant, the geographic area in which the cedant does business and the cedant's market share, historical loss data for the cedant and, where available, historical loss data for the industry as a whole in the relevant regions, in order to compare the cedant's historical loss experience to industry averages, and to gauge the perceived insurance and reinsurance expertise and financial strength of the cedant. The Company trains its underwriters and strives to maintain continuity of underwriters within specific geographic markets and areas of specialty.

The Company generally underwrites risks with specified limits per treaty program or facultative contract. Like other reinsurance companies, the Company is exposed to multiple insured losses arising out of a single occurrence, whether a natural event such as hurricane, windstorm, tornado, flood or earthquake, or man-made events. Any such catastrophic event could

generate insured losses in one or many of the Company's reinsurance treaties and facultative contracts and in one or more lines of business. The Company considers such event scenarios as part of its evaluation and monitoring of its aggregate exposures to catastrophic events.

Financial Market and Credit Risk

Financial market risk is defined as the risk of a significant financial loss resulting from changes in financial market prices or rates, such as equity prices, interest rates, credit spreads, foreign exchange rates or real estate prices. Financial market risk typically originates from investment activities, underwriting activities for certain product segments, and from the sensitivity of the economic value of liabilities to financial market movements. Credit risk is defined as the risk of a significant financial loss due to default or downgrade of a counterparty. The Company is exposed to credit risk through investment activities, structured transactions, retrocession as well as GMDB, mortgage, credit and surety (included in financial risks) underwriting.

Financial market and credit risk management follows both top-down and bottom-up approaches. The top-down approach begins with the Group Risk Tolerance Framework. The framework dictates an overarching Group risk limit with sub-limits for important quantifiable risk pillars including investment risks and other financial risks. Additionally, it limits downside economic risk resulting from deterministic cross-risk pillar severe stress scenarios (e.g., financial crisis or inflation spike scenarios) before being further delineated and extended to policies and operating guidelines at all levels of the Company. At the same time, investments operating guidelines, supporting the Group Risk Tolerance Framework, follow a bottom-up approach; guidelines are constructed for each investments portfolio then for each legal entity up to the Group level in a consistent manner. These guidelines contain comprehensive specifications and limits that span credit quality, duration, liquidity, liability coverage and concentration (geographic, asset sub-class, single exposure, sector, etc.) among other considerations.

The Company utilizes external and internal tools to quantify financial market and credit risks. In addition to regularly assessing portfolio sensitivities to predetermined changes in market factors (e.g., interest rates and credit spreads), the Company has developed internally several single-year and multi-year scenarios with the goal of quantifying the impact of severe macroeconomic events (e.g., real estate crisis, financial crisis and inflation/interest rate spike) on invested assets, economically sensitive reinsurance business (e.g., mortgage, credit & surety, GMDB, etc.) and inflation sensitive reserves. These scenarios are then often augmented by reinsurance shocks (e.g., Natural Catastrophe event) to assess the impact on the Company's liquidity and/or solvency.

Furthermore, Risk Management employs an external real-world Economic Scenario Generator tool to regularly quantify and monitor the evolution of total return distributions by asset classes, subclass and by risk type (e.g., interest rate risk, equity risk, private equity, spread risk including default and migration risks, currency risk and real estate risk).

Additionally, duration risk is monitored to ensure that the duration of liabilities is perfectly matched with the duration of high quality, high liquid fixed income assets and that duration risk is only assumed through fixed income that is in excess of the liabilities (limited by the guidelines discussed above).

Lastly, currency risk is monitored and hedged through foreign exchange forward contracts by the Treasury team whenever deemed necessary and appropriate.

See Quantitative and Qualitative Disclosures about Market Risk in Item 11 and Note 6 to the Consolidated Financial Statements in Item 18 of this report for further details.

Operational Risks

Operational risks are inherent to conducting business and represent a potential for a financial loss or reputational impact as a result of operational failures caused by people, processes, systems and external events. These failures, due to weaknesses in financial reporting and controls, include but are not limited to, poor cash management, disaster recovery planning, and reliance on third party vendors. The Company seeks to minimize these risks through robust processes and monitoring throughout the organization.

Emerging Risk

Emerging risks are new risks or previously known risks that are evolving in unexpected ways with unanticipated consequences. They are monitored and managed through a cross-functional Emerging Risk Committee which is tasked to evaluate and prioritize these risks based on the likelihood of occurrence and the potential impact on the Company.

Reputational Risk

Management considers that strong governance procedures, including a robust system of processes and internal controls, are appropriate to manage risks related to its reputation and risks related to new initiatives, including acquisitions, new products or markets. The Company seeks to preserve its reputation through high professional and ethical standards and manages the impact of identified risks through the adoption and implementation of a sound and comprehensive assumed risk framework.

Risk Strategy: Risk Appetite and Risk Tolerance Framework

Risk Appetite

Risk appetite is an integral part of an effective risk management system that defines the overall level of risk the Company is prepared to accept in pursuit of its strategic objectives, and which is managed through a robust Risk Tolerance Framework of risk limits. Executive Management regularly reviews the Company's deployment and may decide to adjust the amount of capacity deployed for each risk driver (within the established risk tolerance) based on strategic considerations and changes in market conditions.

Risk Tolerance Framework

The Company's risk tolerance is expressed as the maximum economic loss that the Company is willing to incur based on various modeled probability return periods. To mitigate the chance of economic losses exceeding the risk tolerance, the Company relies upon diversification of risk sources and risk limits to manage exposures. Diversification enables losses from one risk source to be offset by profits from other risk sources so that the chance of overall losses exceeding the Company's risk tolerance is reduced.

The Company's risk tolerance is approved by the Board and is expected to remain stable. Any changes to the risk tolerance are to be approved by the Board. Definitions for the maximum economic loss and available economic capital are as follows:

Economic Loss. The Company defines an economic loss as a decrease in the Company's economic value, which is defined as common shareholder's equity plus the "time value of money" discount of the non-life reserves that is not recognized in the consolidated financial statements in accordance with U.S. GAAP, net of tax, plus the embedded value of the Life portfolio that is not recognized in the consolidated financial statements in accordance with U.S. GAAP, net of tax, less goodwill and intangible assets, net of tax.

Available Economic Capital. The Company defines economic capital as the economic value, as defined above, plus preferred shareholders' equity and the carrying value of debt recognized in the consolidated financial statements in accordance with U.S. GAAP.

The Maximum Economic Loss. The maximum economic loss is a loss expressed as a percentage of economic capital under various modeled probability return periods.

The Company establishes key risk limits net of any reinsurance/retrocession for any risk source deemed by Management to have the potential to cause economic losses greater than the Company's risk tolerance. The Risk Tolerance Framework is approved by the Board in order to drive consistency in the application of the following Company limits: Overall Group Risk Tolerance, Reinsurance Operations, Financial Assets and Reinsurance Risk Tiers, each of which are described as follows:

Overall Group Risk Tolerance. The overall group risk tolerance limit is 35% of the loss of available economic capital based on the internal model 1-in-100 Value at Risk. Additionally, this limit is also monitored through a number of stress scenarios which impact both asset and liabilities of the balance sheet.

Reinsurance Operations. This risk category includes reinsurance risks and standard fixed income portfolio.

Financial assets. Financial assets is defined as invested assets that can neither be considered as Standard Fixed Income (cash, cash equivalents and publicly-traded investment grade fixed income) or as Insurance Linked Securities (e.g., catastrophe bonds, where the risk is captured on the liabilities side). The Company limits, through self-imposed Group Investments Operating Guidelines, its aggregate exposure to financial asset classes and sub-classes. These include, but are not limited to, public equity, hedge funds, private equity, real estate, strategic ventures, commodities and alternative fixed income.

Reinsurance Risk Tiers. The risk tiers consist of a classification of risk drivers which consider the following criteria:

- Materiality
- Risk driver expertise, and
- Potential for superior risk-adjusted return over the cycle.

The three risk tiers are described as follows:

Tier 1 Risks

Tier 1 risks consist of risk drivers which meet all three criteria of the Risk Tolerance Framework: materiality, risk driver expertise and potential for superior risk-adjusted return over the cycle. Additionally, the risk tolerance limit for this risk tier is

20% of available capital (annually defined) based on either the internal model 1-in-100 Value at Risk or a 1-in-100 scenario. The following are Tier 1 Risks:

Natural Catastrophe Risk

The risk that the aggregate losses from natural perils materially exceed the net premiums that are received to cover such risks. The Company considers both catastrophe losses due to a single large event and catastrophe losses that would occur from multiple (but potentially smaller) events in any year.

Longevity Risk

The potential risk of increased actual and future expected annuity payments resulting from annuitants living longer than expected, or the expectation that annuitants will live longer in the future.

Pandemic Risk

The risk of increase in mortality over an annual period associated with a rapidly spreading virus (either within a highly populated geographic area or on a global basis) with a high mortality rate.

Casualty Risk

The risk that the estimates of ultimate losses for casualty will prove to be too low, leading to the need for substantial reserve strengthening.

Standard Fixed Income Credit Risk

The risk of an increased probability of defaults in the Company's standard fixed income credit securities (which includes investment grade corporate bonds and asset-backed securities).

Management monitors Tier 1 Risks on a periodic basis. The approved limits and the actual limits deployed at December 31, 2018 and 2017 were as follows (in billions of U.S. dollars):

Tier 1 Risks	**December 31, 2018**		**December 31, 2017**	
	Approved limit (1)	**Actual deployed(1)**	**Approved limit(1)**	**Actual deployed(1)**
Natural Catastrophe Risk	**$ 1.7**	**$ 0.8**	$ 1.6	$ 0.8
Longevity Risk(2)	**$ 1.7**	**$ 0.8**	$ 1.6	$ 0.9
Pandemic Risk	**$ 1.7**	**$ 0.4**	$ 1.6	$ 0.4
Casualty Risk	**$ 1.7**	**$ 0.7**	$ 1.6	$ 0.7
Standard Fixed Income Credit	**$ 1.7**	**$ 0.7**	$ 1.6	$ 0.8

(1) The limits approved and the actual limits deployed in the table above are shown net of retrocession.
(2) The longevity risk duration for modelling purposes extends to the full run-off rather than one year.

Tier 2 Risks

Tier 2 risks consist of risks drivers which meet two of the three Risk Tolerance Framework criteria. Tier 2 risks are monitored by the ERC. The risk tolerance limit for Tier 2 is 10% of the available capital based on either the internal model 1-in-100 Value at Risk or a 1-in-100 scenario. The following are Tier 2 Risks:

Mortgage Risk

The risk that losses from mortgage reinsurance materially exceed the net premiums that are received to cover such risks, which may result in operating and economic losses to the Company.

Credit and Surety Risk

The risk that aggregated trade credit losses materially exceed the net premiums that are received to cover such risks, which may result in operating and economic losses to the Company.

Tier 3 Risks

All other underwriting risks are considered as Tier 3 Risks with a risk tolerance limit of US$250 million. These risks are monitored by the Chief Underwriting Officer and corresponding BU.

Risk Reporting

The Company diligently monitors risks that could adversely impact operating and economic results. The integrated risk reporting suite provides Management with key risk exposure analysis in order to monitor the Company's risk tolerance limits and risk profile.

Natural Catastrophe PML

The following discussion of the Company's natural catastrophe PML information contains forward-looking statements based upon assumptions and expectations concerning the potential effect of future events that are subject to uncertainties. See Item 3D of Part I of this report for a list of the Company's risk factors. Any of these risk factors could result in actual losses that are materially different from the Company's PML estimates below.

Natural catastrophe risk is a source of significant aggregate exposure for the Company and is managed by setting risk tolerance and limits, as discussed above. Natural catastrophe perils can impact geographic regions of varying size and can have economic repercussions beyond the geographic region directly impacted.

The Company considers a peril zone to be an area within a geographic region, continent or country in which losses from insurance exposures are likely to be highly correlated to a single catastrophic event. The Company defines peril zones to capture the vast majority of exposures likely to be incorporated by typical modeled events. There is, however, no industry standard and the Company's definitions of peril zones may differ from those of other parties.

The Company has exposures in other peril zones that can potentially generate losses greater than the PML estimates below. The Company's PMLs represent an estimate of loss for a single event for a given return period. The table below discloses the Company's 1-in-250 and 1-in-500 year return period estimated loss for a single occurrence of a natural catastrophe event in a one-year period. In other words, the 1-in-250 and 1-in-500 year return period PMLs mean that there is a 0.4% and 0.2% chance, respectively, in any given year that an occurrence of a natural catastrophe in a specific peril zone will lead to losses exceeding the stated estimate.

The PML estimates below include all significant exposure from our Non-life and Life and Health business operations. This includes coverage for property, marine, energy, engineering, workers' compensation, mortality, and exposure to catastrophe losses from insurance-linked securities. The PML estimates do not include casualty coverage that could be exposed as a result of a catastrophic event. In addition, they do not include estimates for contingent losses to insureds that are not directly impacted by the event (e.g. loss of earnings due to disruption in supply lines).

The Company's single occurrence estimated net PML exposures (net of retrocession and reinstatement premiums) of the top ten natural catastrophe perils as at December 31, 2018 and 2017 were as follows (in millions of U.S. dollars):

		December 31, 2018		December 31, 2017	
Zone	**Peril**	**1-in-250 year PML**	**1-in-500 year PML (Earthquake perils only)**	**1-in-250 year PML**	**1-in-500 year PML (Earthquake perils only)**
U.S. Northeast	Hurricane	$ 630		$ 573	
U.S. Gulf Coast	Hurricane	586		586	
U.S. Southeast	Hurricane	520		556	
Caribbean	Hurricane	186		175	
Europe	Windstorm	371		403	
Japan	Typhoon	190		209	
California	Earthquake	515	$ 760	512	$ 640
Japan	Earthquake	260	290	330	368
Australia	Earthquake	215	270	152	222
British Columbia	Earthquake	163	311	143	306
New Zealand	Earthquake	154	225	140	201

Risk Mitigation

Retrocessional Reinsurance

The Company uses retrocessional reinsurance agreements to reduce its exposure on certain reinsurance risks assumed and to mitigate the effect of any single major event or the frequency of medium-sized events. These agreements provide for the recovery of a portion of losses and loss expenses from retrocessionaires. The majority of the Company's retrocessional reinsurance agreements cover property and specialty lines (e.g. aviation, marine, mortgage and certain financial risks included in the credit/surety line) exposures, predominantly those that are catastrophe exposed. The Company also utilizes retrocessions in the Life and Health segment to manage the amount of per-event and per-life risks to which it is exposed. Retrocessionaires must be pre-approved based on their financial condition and business practices, with stability, solvency and credit ratings considered to be important criteria. Strict limits per retrocessionaire are also put into place and monitored to mitigate counterparty credit risk.

The Company remains liable to its cedants to the extent that the retrocessionaires do not meet their obligations under retrocessional agreements, and therefore retrocessions are subject to credit risk in all cases and to aggregate loss limits in certain cases. The Company holds collateral, including escrow funds, trusts, securities and letters of credit under certain retrocessional agreements. Provisions are made for amounts considered potentially uncollectible and reinsurance losses recoverable from retrocessionaires are reported after allowances for uncollectible amounts.

Regulation

The business of reinsurance is regulated in all countries in which we operate, although the degree and type of regulation varies significantly from one jurisdiction to another. The laws and regulations of the jurisdictions in which our reinsurance subsidiaries are domiciled impose complex regulatory requirements such as maintenance of minimum levels of statutory capital, surplus, and liquidity; various solvency standards; and periodic examinations of subsidiaries' financial condition. See Risk Factors—Legal and Regulatory Risks in Item 3 of this report.

Bermuda has been deemed Solvency II equivalent under the European Union's (EU) Solvency II Directive, effective January 1, 2016. Bermuda has been granted equivalence for an unlimited period for all three relevant equivalence areas: Articles 172, 227 and 260, with the exception of rules on captives and special purpose insurers, which are subject to a different regulatory regime in Bermuda. This determination has resulted in Bermuda-based reinsurers being exempt from the requirement to post collateral in the EU and allows reinsurance contracts concluded with undertakings having their head office in Bermuda to be treated in the same manner as reinsurance contracts concluded with undertakings authorized in accordance with the Directive (Article 172); EU insurance groups can conduct their EU prudential reporting for a subsidiary in Bermuda under local rules instead of Solvency II if deduction and aggregation is allowed as the method of consolidation of group accounts (Article 227); and Bermuda insurance groups which are active in the EU are exempt from some aspects of group supervision in the EU as Member States will rely on the equivalent supervision exercised by the Bermuda Monetary Authority (BMA) (Article 260).

One of the key concepts of Solvency II is the principal of one "home" regulator over all the operating entities in a particular insurance or reinsurance group (referred to as Group Supervision). The Insurance Act 1978 of Bermuda and related regulations, as amended (the Insurance Act) sets out provisions regarding Group Supervision, including the power of the BMA to include or exclude specified entities from Group Supervision, the power of the BMA to withdraw as group supervisor, the functions of the BMA as Group supervisor and the power of the BMA to make rules regarding Group Supervision for, amongst other things (1) assessing the financial situation and the solvency position of the insurance group and/or its members and (2) regulating intra-group transactions, risk concentration, governance procedures, risk management and regulatory reporting and disclosure. In addition to being tasked with assessing the financial condition of the Company and its subsidiaries, the BMA has the power to impose restrictions on the ability of the Company's subsidiaries to declare dividends to the Company, and the ability of the Company to pay dividends to shareholders. This Group Supervision regime is in addition to the regulation of the Company's various operating subsidiaries in their local jurisdictions. The BMA's Group Supervision rules set out the rules in respect of the assessment of the financial situation and solvency of an insurance group, the system of governance and risk management, and supervisory reporting and disclosures of an insurance group. The Group solvency rules set out the rules in respect of the capital and solvency return and enhanced capital requirements for an insurance group. PartnerRe Bermuda is the designated insurer for the purposes of Group Supervision, and the BMA currently acts as Group supervisor of the Company and its subsidiaries. As Group supervisor, the BMA will perform a number of supervisory functions including (1) coordinating the gathering and dissemination of information which is of importance for the supervisory task of other competent authorities; (2) carrying out a supervisory review and assessment of the Group; (3) carrying out an assessment of the Group's compliance with the rules on solvency, risk concentration, intra-group transactions and good governance procedures; (4) planning and coordinating, with other competent authorities, supervisory activities in respect of the Group, both as a going concern and in emergency situations; (5) taking into account the nature, scale and complexity of the risks inherent in the business of all companies that are part of the Group; (6) coordinating any enforcement action

that may need to be taken against the Group or any of its members and (7) planning and coordinating meetings of colleges of supervisors (consisting of insurance regulators) in order to facilitate the carrying out of the functions described above.

PartnerRe Ltd. is not a registered insurer; however, pursuant to its functions as Group supervisor, the BMA includes the Company and may include any member of the group within its Group Supervision.

Significant aspects of the Bermuda insurance regulatory framework and requirements imposed on Insurance and Reinsurance Groups include the solvency assessment. The Company must annually perform an assessment of its own risk and solvency requirements, referred to as a Group's Solvency Self Assessment (GSSA). The GSSA allows the BMA to obtain an insurance group's view of the capital resources required to achieve its business objectives and to assess a group's governance, risk management and controls surrounding this process. In addition, the Company must file with the BMA a Catastrophe Risk Return which assesses an insurer's reliance on vendor models in assessing catastrophe exposure.

Since January 1, 2014, the BMA imposes the Enhanced Capital Requirement (ECR) on the Company pursuant to its function as the Company's group supervisor. The PartnerRe group's ECR may be calculated by either (a) the standard model developed by the BMA known as the Bermuda Solvency Capital Requirement model (BSCR), or (b) an internal capital model which the BMA has approved for use for this purpose. The Company currently uses the BMA standard model in calculating its group ECR requirements. In addition, the Company is required to prepare and submit annual audited group U.S. GAAP financial statements, annual group statutory financial statements, annual group statutory financial return, annual group capital and solvency return and quarterly group unaudited financial returns.

The BSCR model is a risk-based capital model which provides a method for determining an insurer's capital requirements (statutory capital and surplus) by taking into account the risk characteristics of different aspects of the insurer's business. The BSCR formulae establishes, on a consolidated basis, capital requirements for eleven categories of risk: fixed income investment risk, equity investment risk, interest rate/liquidity risk, currency risk, concentration risk, premium risk, reserve risk, credit risk, catastrophe risk, long-term insurance risk and operational risk.

Pursuant to the Insurance (Public Disclosure) Rules 2015, the BMA requires commercial insurers and insurance groups to prepare and publish a Financial Condition Report (FCR). The FCR provides an overview of the company's financial condition including business performance, governance structure, risk profile, solvency valuation and capital management process. The FCR includes, among other disclosures, the respective company's required and available statutory capital. The FCR is required to be filed with the BMA annually and published on the PartnerRe website within fourteen days of filing with the BMA. The FCR must be signed off by the CEO and either the chief risk officer or chief financial officer (CFO) declaring the appropriateness of the information contained in the FCR.

Bermuda

The Insurance Act regulates the business of PartnerRe Bermuda. The Insurance Act imposes solvency and liquidity standards and auditing and reporting requirements on Bermuda insurance companies and grants the BMA powers to supervise, investigate and intervene in the affairs of Bermuda registered insurance companies. The Insurance Act makes no distinction between insurance and reinsurance business.

PartnerRe Bermuda is licensed as a Class 4 and Class E insurer in Bermuda and is therefore authorized to carry on general and long-term insurance business. Significant aspects of the Bermuda insurance regulatory framework and requirements imposed on Class 4 and Class E insurers such as PartnerRe Bermuda include the following:

Minimum Solvency Margin and Enhanced Capital Requirements. The Insurance Act provides that the value of the statutory assets of an insurer must exceed the value of its statutory liabilities by an amount greater than its prescribed minimum solvency margin (MSM). The MSM that must be maintained by PartnerRe Bermuda with respect to its general business is the greater of (i) $100 million, (ii) 50% of net premiums written (with a credit for reinsurance ceded not exceeding 25% of gross premiums), (iii) 15% of net aggregate loss and loss expense provisions and other insurance reserves, or (iv) 25% of its ECR as reported at the end of the relevant year. The MSM that must be maintained by PartnerRe Bermuda with respect to its long-term business is the greater of $8 million or 2% of the first $500 million of assets plus 1.5% of assets above $500 million. Statutory assets are defined as the total assets reported on an insurer's balance sheet in the relevant year less non-admitted assets, including goodwill and other intangible assets, not considered admissible for solvency purposes.

Minimum Capital Requirements. While not specifically referred to in the Insurance Act, the BMA has also established a Target Capital Level (TCL) equal to 120% of its ECR. While an insurer is not currently required to maintain its statutory capital and surplus at this level, the TCL serves as an early warning tool for the BMA and failure to maintain statutory capital at least equal to the TCL will likely result in increased regulatory oversight.

Any applicable insurer which at any time fails to meet the MSM requirements must, upon becoming aware of such failure,

immediately notify the BMA and, within 14 days thereafter, file a written report with the BMA describing the circumstances that gave rise to the failure and setting out its plan detailing specific actions to be taken and the expected time frame in which the company intends to rectify the failure.

Any applicable insurer which at any time fails to meet the ECR applicable to it will upon becoming aware of that failure, or of having reason to believe that such a failure has occurred, immediately notify the BMA in writing and, within 14 days of such notification, file with the BMA a written report containing particulars of the circumstances leading to the failure; and a plan detailing the manner, specific actions to be taken and time within which the insurer intends to rectify the failure and within 45 days of becoming aware of that failure, or of having reason to believe that such a failure has occurred, furnish the BMA with: (1) unaudited interim standard accounting principles financial statements covering such period as the BMA may require, (2) the opinion of a loss reserve specialist where applicable, (3) a general business solvency certificate in respect of the financial statements and unaudited statutory economic balance sheet prepared in accordance with GAAP, (4) a capital and solvency return reflecting an ECR prepared using post-failure data, where applicable, (5) a long-term business solvency certificate in respect of those statements, where applicable and (6) the opinion of an approved actuary, where applicable.

To enable the BMA to better assess the quality of the insurer's capital resources, applicable insurers are required to disclose the makeup of its capital in accordance with the "3-tiered capital system." Under this system, all of the insurer's capital instruments will be classified as either basic or ancillary capital which in turn will be classified into one of three tiers based on their "loss absorbency" characteristics. Highest quality capital will be classified as Tier 1 Capital, lesser quality capital will be classified as either Tier 2 Capital or Tier 3 Capital. Under this regime, up to certain specified percentages of Tier 1, Tier 2, and Tier 3 Capital may be used to support the insurer's MSM and ECR.

The characteristics of the capital instruments that must be satisfied to qualify as Tier 1, Tier 2, and Tier 3 Capital are set out in the Insurance (Eligible Capital) Rules 2012, as amended. Under these rules, Tier 1, Tier 2, and Tier 3 Capital may, until January 1, 2026, include capital instruments that do not satisfy the requirement that the instrument be non-redeemable or settled only with the issuance of an instrument of equal or higher quality upon a breach, or if it would cause a breach, in the ECR.

While the BMA has previously approved the use of certain instruments for capital purposes, the BMA's consent will need to be obtained if such instruments are to remain eligible for use in satisfying the MSM and the ECR.

The BMA implemented an Economic Balance Sheet (EBS) framework which is used as the basis to determine the ECR for all commercial insurers, including PartnerRe Bermuda. The EBS framework applies prudential filters and other EBS valuation adjustments to an insurer's GAAP balance sheet to produce an economic valuation of the assets and liabilities of the insurer.

Reporting Requirements. PartnerRe Bermuda must prepare and submit, on an annual basis, both audited GAAP and statutory financial statements. The Insurance Act prescribes rules for the preparation and substance of statutory financial statements (which include, in statutory form, a balance sheet, income statement, a statement of capital and surplus, and notes thereto). The statutory financial statements include detailed information and analysis regarding premiums, claims, reinsurance and investments of the insurer.

Every insurer is also required to deliver to the BMA a declaration of compliance declaring whether or not that insurer has, with respect to the preceding financial year, (i) complied with the minimum criteria applicable to it, (ii) complied with its MSM and ECR as at its financial year-end, and (iii) where an insurer's license has been issued subject to limitations, restrictions or conditions, that the insurer has observed such limitations, restrictions or conditions. The declaration of compliance must be signed by two directors and filed at the same time the insurer submits its statutory financial statements.

Dividends and Distributions. The Insurance Act prohibits PartnerRe Bermuda, as an insurer registered as a Class E and as a Class 4 insurer from declaring or paying any dividends during any financial year if it is in breach of its MSM or if the declaration or payment of such dividends would cause such a breach. PartnerRe Bermuda is also prohibited from declaring or paying a dividend where it has failed to comply with the ECR, until such noncompliance is rectified. Furthermore, under the Insurance Act, PartnerRe Bermuda shall not in any financial year pay dividends which would exceed 25% of its total statutory capital and surplus, as shown on its statutory balance sheet in relation to the previous financial year, unless at least 7 days before payment of those dividends it files with the BMA an affidavit signed by at least two directors, and by PartnerRe Bermuda's principal representative in Bermuda, which states that in the opinion of those signing, declaration of those dividends has not caused the insurer to fail to meet its relevant margins.

Generally, an insurer carrying on long-term business, such as PartnerRe Bermuda, is also restricted from declaring or paying a dividend unless the value of its assets in its long-term business fund exceeds the extent of the liabilities of the insurer's long-term business.

Further, under the Bermuda Companies Act 1981, as amended, PartnerRe Bermuda may only declare or pay a dividend, or make a distribution out of contributed surplus, if it has no reasonable grounds for believing that: (1) it is, or would after the payment be, unable to pay its liabilities as they become due or (2) the realizable value of its assets would be less than its liabilities.

Economic Substance Legislation. Effective December 31, 2018, the Bermuda Government passed the Economic Substance Act 2018 and corresponding Economic Substance Regulations (Economic Substance Legislation), requiring relevant entities based in Bermuda to comply with certain obligations in regard to economic substance in the jurisdiction. The Economic Substance Legislation was enacted in response to a scoping paper issued by the European Union's Code of Conduct Group (Business Taxation) in June 2018. The paper set out requirements that certain jurisdictions outside the EU (of which Bermuda is one) must adopt with regard to the economic substance of entities based in those jurisdictions, in order to avoid being black-listed by the EU. Broadly equivalent legislation has been passed in all of the major offshore jurisdictions in addition to Bermuda, including the Cayman Islands, BVI and the Channel Islands. However, on March 12, 2019, the EU announced that it had added Bermuda to its list of non-compliant jurisdictions for tax purposes due to a deficiency with Bermuda's Economic Substance Legislation. The Bermuda authorities have announced that they have addressed this issue and expect that Bermuda will be removed from the blacklist in the near future, prior to any imposition of penalties or sanctions.

In this connection, we are required to comply with minimum economic substance requirements, including compliance with the applicable corporate governance requirements of the Companies Act (including keeping records of account, books and papers and financial statements in Bermuda); filing an economic substance declaration; and having adequate employees for holding and managing equity participations, and adequate premises in Bermuda.

In addition to the above, PartnerRe Bermuda maintains an operating branch in Canada and a representative office in Mexico. The Canadian branch is subject to regulation in Canada by the Office of the Superintendent of Financial Institutions (OSFI). For a further discussion of the regulations pertaining to the Canadian branch see below.

Ireland

The Central Bank of Ireland (the Central Bank) regulates insurance and reinsurance companies authorized in Ireland, including PartnerRe Europe and PartnerRe Ireland. PartnerRe Holdings Europe Limited, a holding company for PartnerRe Europe and PartnerRe Ireland, is not subject to regulation by the Central Bank. PartnerRe Europe is a reinsurance company incorporated under the laws of Ireland and is duly authorized as a reinsurance undertaking to carry on non-life and life reinsurance business in accordance with the European Union (Insurance and Reinsurance) Regulations 2015. PartnerRe Ireland is an insurance company incorporated under the laws of Ireland and is duly authorized as an insurance undertaking to carry on non-life insurance business in accordance with the European Union (Insurance and Reinsurance) Regulations 2015.

Significant aspects of the Irish re/insurance regulatory framework and requirements imposed on PartnerRe Europe and PartnerRe Ireland include the following:

Solvency Requirements. The Directive related to the solvency standards applicable to insurers and reinsurers prescribes, at the level of PartnerRe Europe and PartnerRe Ireland, the minimum amounts of financial resources that both companies are required to have in order to cover the risks to which they are exposed and the principles that should guide their overall risk management and reporting. This Directive became effective January 1, 2016. Under the Solvency II requirements, PartnerRe Europe and PartnerRe Ireland have similar governance requirements to those of PartnerRe Bermuda such as Balance Sheet, Own Risk and Solvency Assessment, Solvency and Financial Condition Report and a Regular Supervisory Report.

Reporting Requirements. PartnerRe Europe and PartnerRe Ireland must file and submit annual audited financial statements in accordance with International Financial Reporting Standards and related reports to the Irish Companies Registration Office (CRO) together with an annual return of certain core corporate information. Changes to core corporate information during the year must also be notified to the CRO. These requirements are in addition to the regulatory returns required to be filed annually with the Central Bank and additionally, in the case of PartnerRe Ireland, with the National Association of Insurance Commissioners (NAIC) in the U.S.

Dividends and Distributions. Pursuant to Irish company law, PartnerRe Europe and PartnerRe Ireland are restricted to declaring dividends only out of "profits available for distribution". Profits available for distribution are, broadly, a company's accumulated realized profits less its accumulated realized losses. Such profits may not include profits previously utilized.

In addition to the above, PartnerRe Europe has also established operating branches in the U.K., France, Switzerland, Dubai (PartnerRe Europe has decided to close the Dubai branch and such closure is expected to be finalized during 2019) and Hong Kong and a representative office in Brazil, which are subject to Irish reinsurance supervision regulations. In addition, the Hong Kong branch is subject to regulation by the Insurance Authority of Hong Kong. PartnerRe Ireland, pursuant to the Nonadmitted and Reinsurance Reform Act of 2010 (part of the Dodd-Frank Act), is a nonadmitted alien insurer in the U.S. and is eligible to write

business as an excess and surplus lines insurer in all U.S. states. PartnerRe Ireland has also established an operating branch in the U.K. which is subject to Irish insurance supervision regulations.

PartnerRe Europe and PartnerRe Ireland were parties to a regulatory investigation with the Central Bank related to 2016 regulatory filings. In summary, the matter related to the Central Bank's allegations of contraventions of Corporate Governance Requirements for Insurance Undertakings 2015, the European Union (Insurance and Reinsurance) Regulations 2015 and the Commission Delegated Regulation (EU) 2015/35. The matter closed in August 2018 resulting in an administrative sanction of EUR 1.5 million.

United States

PartnerRe U.S. Corporation is a Delaware domiciled holding company for its wholly-owned (re)insurance subsidiaries, PartnerRe U.S., PartnerRe Insurance Company of New York (PRNY) and PartnerRe America Insurance Company (PRAIC) (PartnerRe U.S., PRNY and PRAIC together being the PartnerRe U.S. Insurance Companies). The PartnerRe U.S. Insurance Companies are subject to regulation under the insurance statutes and regulations of their domiciliary states (New York in the case of PartnerRe U.S. and PRNY, and Delaware in the case of PRAIC, and all states where they are licensed, accredited or approved to underwrite insurance and reinsurance).

Currently, the PartnerRe U.S. Insurance Companies are licensed, accredited or approved reinsurers and/or insurers in all fifty states and the District of Columbia, and are subject to the requirements described below.

PartnerRe U.S. Corporation is also the owner of Presidio and its 100% owned subsidiaries Presidio Excess Insurance Services, Inc. (PXS), PartnerRe Management Ltd. (PRM) and Presidio Reinsurance Corporation (PRC). PXS is a managing general underwriter licensed in a number of states. PRM is domiciled in the U.K. and regulated by the Financial Services Authority. PRC is a Montana domiciled captive reinsurer and the Montana Department of Insurance is the domiciliary regulator of PRC. These entities are not subject to any significant regulatory requirements or restrictions that would have a material impact on the Company.

The Company also, through its 100% owned subsidiary PartnerRe U.S. Corporation, owns 100% of PartnerRe Life Reinsurance Company of America (PLRA) a life reinsurance company which is subject to regulation under the insurance statutes and regulations of Arkansas and all states where PLRA is licensed, accredited or approved to underwrite reinsurance.

On August 11, 2017, PartnerRe U.S. entered into a stock purchase agreement, which was amended and restated on May 23, 2018, with respect to the sale of all the outstanding shares of capital stock PRNY to Employers Group, Inc. The sale of PRNY is expected to be consummated upon the satisfaction of certain closing conditions, including, among other things, approval from the New York State Department of Financial Services (NYDFS).

Risk-Based Capital Requirements. The Risk-Based Capital (RBC) for Insurers Model Act (the Model RBC Act) or similar legislation has been adopted by the majority of states in the U.S. The main purpose of the Model RBC Act is to provide a tool for insurance regulators to evaluate the capital of insurers with respect to the risks assumed by them and to determine whether there is a need for possible corrective action. U.S. insurers and reinsurers are required to report the results of their RBC calculations as part of the statutory annual statements that such insurers and reinsurers file with state insurance regulatory authorities. The Model RBC Act provides for four different levels of regulatory actions, each of which may be triggered if an insurer’s Total Adjusted Capital (as defined in the Model RBC Act) is less than a corresponding level of risk-based capital. Decreases in an insurer’s Total Adjusted Capital as a percentage of its Authorized Control Level (as defined in the Model RBC Act) triggers increasing regulatory actions. Such regulatory actions include but are not limited to issuance of orders for corrective action by the insurer, rehabilitation or liquidation of the insurer. No such actions have been taken with respect to the PartnerRe U.S. Insurance Companies or PRLA.

Insurance Regulatory Information System (IRIS) Ratios. A committee of state insurance regulators developed the NAIC’s IRIS primarily to assist state insurance departments in executing their statutory mandates to oversee the financial condition of insurance or reinsurance companies operating in their respective states. IRIS identifies thirteen industry ratios and specifies usual values for each ratio. Generally, a company will become subject to regulatory scrutiny if it falls outside the usual ranges with respect to four or more of the ratios, and regulators may then act, if the company has insufficient capital, to constrain the company’s underwriting capacity. No such action has been taken with respect to the PartnerRe U.S. Insurance Companies or PRLA.

Reporting Requirements. Regulations vary from state to state, but generally require insurance holding companies and insurers and reinsurers that are subsidiaries of insurance holding companies to register and file with their state domiciliary regulatory authorities certain reports, including information concerning their capital structure, ownership, financial condition and general business operations. State regulatory authorities monitor compliance with, and periodically conduct examinations with respect to, state mandated standards of solvency, licensing requirements, investment limitations, and restrictions on the size of risks which may be reinsured, deposits of securities for the benefit of reinsureds, methods of accounting for assets, reserves for unearned premiums and losses, and other purposes. In general, such regulations are for the protection of reinsureds and, ultimately, their policyholders, rather than security holders. In the U.S., the NYDFS is the domiciliary regulator of PartnerRe U.S. and PRNY, the Delaware

Department of Insurance is the domiciliary regulator of PRAIC and the Arkansas Insurance Department is the domiciliary regulator of PRLA.

Dividends and Distributions. Under New York law, the NYDFS must approve any dividend declared or paid by PartnerRe U.S. or PRNY that, together with all dividends declared or distributed by each of them during the preceding twelve months, exceeds the lesser of 10% of their respective statutory surplus as shown on the latest statutory financial statements on file with the NYDFS, or 100% of their respective adjusted net investment income. Under Delaware law the Delaware Commissioner of Insurance must approve any dividend declared or paid by PRAIC that, together with all dividends or distributions made within the preceding 12 months exceeds the greater of (i) ten percent of PRAIC's surplus as regards policyholders as of the preceding December 31 or (ii) the net income, not including realized capital gains, for the 12-month period ending the preceding December 31. Under Arkansas law the Arkansas Insurance Commissioner must approve any dividend declared or paid by PRLA that, together with all dividends and distributions made within the preceding 12 months exceeds the greater of (i) ten percent of PRLA's surplus as regards policyholders as of the preceding December 31 or (ii) the net gain from operations not including capital gains for the twelve-month period ending on the preceding December 31. Arkansas, Delaware and New York do not permit a dividend to be declared or distributed, except out of earned surplus.

In addition to the above, the Dodd-Frank Act currently impacts the PartnerRe U.S. Insurance Companies and PRLA. The Dodd-Frank Act represents a comprehensive overhaul of the financial services industry in the U.S. and established a Federal Insurance Office (FIO) within the U.S. Treasury Department. Although the FIO does not have general supervisory or regulatory authority over the business of insurance or reinsurance, it is charged with monitoring all aspects of the insurance industry, consulting with state insurance regulators, assisting in administration of the Terrorism Risk Insurance Act (TRIA) and other duties. Furthermore, the director of the FIO is a non-voting member of the multi-agency Financial Stability Oversight Council (FSOC), and the FSOC may, among other things, subject an insurance company or an insurance holding company to heightened prudential standards in accordance with Title I of the Dodd-Frank Act following an extended determination process (which can require that such insurance company be subject also to supervision by the Board of Governors of the Federal Reserve System). The Dodd-Frank Act also made small changes to the regulation of credit for reinsurance and surplus lines insurance in the U.S. See Risk Factors in Item 3 of this report.

Cybersecurity Requirements. In February 2017, the NYDFS issued final Cybersecurity Requirements for Financial Service Companies that require regulated entities, including PartnerRe U.S. Insurance Companies, to establish and maintain a cybersecurity program designed to protect consumers and ensure the safety and soundness of New York's financial services industry. Among the requirements are the maintenance of a cybersecurity program with governance controls, risk-based minimum data security standards for technology systems, cyber breach preparedness and response requirements, including reporting obligations, vendor oversight, training, and program record keeping and certification obligations. The regulation became effective on March 1, 2017, subject to certain phase-in periods, and we will be required to incur expenses in order to meet its requirements.

Canada

Canadian branches of PartnerRe Bermuda and PartnerRe U.S. hold licenses to write reinsurance business in Canada. Each Canadian branch is authorized to insure, in Canada, risks falling within the classes of insurance and reinsurance as specified in their respective licenses and is limited to the business of reinsurance. The Canadian branch of PartnerRe Bermuda is licensed to write life business in Ontario, limited to reinsurance. The Canadian branch of PartnerRe U.S. is licensed to write property and casualty business in Ontario, limited to reinsurance. Each Canadian branch is subject to local regulation for its Canadian branch business, specified principally pursuant to Part XIII of the Insurance Companies Act (the Canadian Insurance Act) applicable to foreign property and casualty companies and to foreign life companies as well as relevant provincial insurance acts. The Office of the Superintendent of Financial Institutions (OSFI) supervises the application of the Canadian Insurance Act.

PartnerRe Bermuda and PartnerRe U.S. maintain sufficient assets, vested in trust at a Canadian financial institution, approved by OSFI, to allow their branches to meet minimum statutory solvency requirements as required by the Act, the regulations made under the Act and applicable guidelines issued by OSFI. Certain statutory information is filed with federal and provincial insurance regulators in respect of both property and casualty and life business written by branches. This information includes, among other things, a yearly business plan and an annual Dynamic Capital Adequacy Test report from the Appointed Actuary of the branch that tests the adequacy of the assets that are vested under various adverse scenarios or "stress tests". It is also necessary for an own risk and solvency assessment to be prepared each year. Each branch is required to have a Chief Agent in Canada to act as its local representative.

PartnerRe Life Reinsurance Company of Canada (PartnerRe Canada) is a Canadian incorporated life reinsurer that is a subsidiary of the Company and is domiciled in Canada. PartnerRe Canada is authorized to insure, in Canada, risks falling within the classes of Life and Accident and Sickness, limited to the business of reinsurance.

PartnerRe Canada is required to maintain capital in Canada in a custodial account to meet minimum statutory solvency requirements as required by the Canadian Insurance Act, its regulations and applicable guidelines issued by OSFI. Certain statutory

information is filed with OSFI in respect of the life business written by PartnerRe Canada. This information includes, among other things, an annual business plan and Dynamic Capital Adequacy Test report from the Appointed Actuary of PartnerRe Canada that tests the adequacy of assets under various scenarios or "stress tests". It is also necessary for an own risk and solvency assessment to be prepared each year.

Singapore

The Monetary Authority of Singapore (MAS) regulates insurance and reinsurance companies authorized in Singapore, including PartnerRe Asia.

PartnerRe Asia is the principal reinsurance carrier for the Company’s business underwritten in the Asia Pacific region, conducting general insurance business as a reinsurer and life insurance business as a reinsurer. PartnerRe Asia has an established operating branch in Labuan which is subject to regulation by the Labuan Financial Services Authority.

Significant aspects of the Singapore reinsurance regulatory framework and requirements include the following:

Solvency Requirements. As a licensed reinsurer, PartnerRe Asia is required to maintain minimum capital of SGD25 million. In addition, PartnerRe Asia is required to establish and maintain separate insurance funds for each class of business that it carries on for both Singapore and offshore policies. The solvency requirement in respect of each insurance fund shall at all times be not less than the total risk requirement of the fund (determined by reference to three components being insurance risks, asset portfolio risks and asset concentration risks). The MAS is entitled to require that a licensed reinsurer holds assets of a certain type and prescribed value in Singapore.

Reporting Requirements. PartnerRe Asia must file and submit annual audited financial statements in accordance with Singapore Financial Reporting Standards and related reports to the Accounting and Corporate Regulatory Authority (ACRA) together with an annual return of certain core corporate information. Changes to core corporate information during the year must also be notified to ACRA. These requirements are in addition to the regulatory returns required to be filed annually with the MAS.

Dividends and Distribution. Dividends are generally declared from unappropriated profits. The declaration of a dividend by PartnerRe Asia may be subject to relevant conditions and requirements being met as specified under the Insurance Act (Singapore) and its associated regulations. Any proposed reduction of capital or redemption of preference shares requires the prior approval of the MAS. In addition to the above, the laws and initiatives issued by the MAS regarding Corporate Governance, Outsourcings and Technology Risk Management currently impact, or may impact, Partner Re Asia in the future.

Taxation of the Company and its Subsidiaries

The following summary of the taxation of PartnerRe and its subsidiaries, PartnerRe Bermuda, PartnerRe Europe, PartnerRe Asia, and PartnerRe U.S. Corporation and its subsidiaries (collectively PartnerRe U.S. Companies) is based upon current law. Legislative, judicial or administrative changes may be forthcoming that could affect this summary.

Certain subsidiaries, branch offices and representative offices of the Company are subject to taxation related to operations in Brazil, Canada, Chile, China, France, Hong Kong, Ireland, Labuan, Mexico, Singapore, Switzerland and the U.S. The discussion below covers the significant locations for which the Company or its subsidiaries are subject to taxation.

Bermuda

PartnerRe Ltd. and PartnerRe Bermuda have each received from the Bermuda Minister of Finance an assurance under The Exempted Undertakings Tax Protection Act, 1966 of Bermuda, that in the event that any legislation is enacted in Bermuda imposing 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 shall not be applicable to PartnerRe Ltd. or PartnerRe Bermuda or to any of their operations or the shares, debentures or other obligations of PartnerRe Ltd. or PartnerRe Bermuda until March 2035. These assurances are subject to the provision that they are not construed to prevent the application of any tax or duty to such persons as are ordinarily resident in Bermuda (PartnerRe Ltd. and PartnerRe Bermuda are not currently so designated) or to prevent the application of any tax payable in accordance with the provisions of The Land Tax Act, 1967 of Bermuda or otherwise payable in relation to the property leased to PartnerRe Bermuda.

Canada

The Canadian life branch of PartnerRe Bermuda, the Canadian non-life branch of PartnerRe U.S. and PartnerRe Life Reinsurance Company of Canada are subject to Canadian taxation on their profits. Their profits are taxed at the federal level, as well as the Ontario provincial level at a combined rate of 26.5% in 2018. See also the discussion of taxation in the United States below.

France

The French branch of PartnerRe Europe is conducting business in and is subject to taxation in France. Since January 1, 2016, the tax on corporate profits in France has been 34.43%.

The French Bill for 2018, enacted on December 30, 2017, includes a graduated decrease of the statutory corporate income tax rate from 34.43% in 2017 to 25.83% in 2022, including all applicable surtaxes. See also the discussion of taxation in Ireland below.

Ireland

The Company's Irish subsidiaries, PartnerRe Holdings Europe Limited, PartnerRe Europe, PartnerRe Ireland and PartnerRe Ireland Finance dac conduct business in and are subject to taxation in Ireland. Profits of an Irish trade or business are subject to Irish corporation tax at the rate of 12.5%, whereas profits arising from other than a trade or business are taxable at the rate of 25%. The Swiss, U.S. and French branches and subsidiaries of PartnerRe Europe are subject to taxation in Ireland at the Irish corporation tax rate of 12.5%. However, under Irish domestic tax law, the amount of tax paid in Switzerland, U.S. and France can be credited or deducted against the Irish corporation tax. As a result, the Company does not expect to incur significant taxation in Ireland with respect to the Swiss, U.S. and French branches.

Singapore

The Company's Singapore subsidiary, PartnerRe Asia, is subject to corporate taxation in Singapore at the rate of 17% on profits arising from onshore business and 10% on profits arising from offshore business. However, tax exemptions may apply to qualifying profits derived from certain lines of business.

Switzerland

The Swiss branch of PartnerRe Europe is subject to Swiss taxation, mainly on profits and capital. To the extent that net profits are generated, profits are taxed at a rate of 21.15%. The branch pays capital taxes at a rate of approximately 0.17% on its imputed branch capital calculated according to a procured taxation ruling. See also the discussion of taxation in Ireland above.

United States

PartnerRe U.S. Companies transact business in and are subject to taxation in the U.S. The Canadian non-life branch of PartnerRe U.S. conducts business in Canada and is subject to taxation in Canada as discussed above. Under U.S. tax law, the amount of tax paid in Canada by the Canadian non-life branch of PartnerRe U.S. can be credited or deducted against U.S. corporation tax.

In addition, PartnerRe Europe and PartnerRe Ireland writes certain U.S. and Latin American business through its U.S. reinsurance intermediaries. As a result, PartnerRe Europe is deemed to be engaged in a U.S. trade or business and thus is subject to taxation in the U.S. Finally, PartnerRe Capital Investments Corp. (PCIC) and PartnerRe Life Reinsurance Company of America (PRLA) are also U.S. corporations subject to taxation in the U.S. The current statutory rate of tax on corporate profits in the U.S. is 21%. See the discussion of U.S. branch taxation below and the discussion of taxation in Ireland above.

On this basis, the Company does not expect that it and its subsidiaries, other than the PartnerRe U.S. Companies, PartnerRe Europe and PartnerRe Ireland for business conducted through its U.S. intermediaries, PCIC, PRLA, and the 953(d) electing reinsurer, will be required to pay U.S. corporate income taxes (other than withholding taxes as described below). However, because there is considerable uncertainty as to the activities that constitute a trade or business in the U.S., there can be no assurance that the IRS will not contend successfully that the Company or its non-U.S. subsidiaries (other than PartnerRe Europe, PartnerRe Ireland, and the 953(d) electing reinsurer) are engaged in a trade or business in the U.S. The maximum federal tax rate is currently 21% for a corporation's income that is effectively connected with a trade or business in the U.S. In addition, U.S. branches of foreign corporations may be subject to the branch profits tax, which imposes a tax on U.S. branch after-tax earnings that are deemed repatriated out of the U.S., for a potential maximum effective federal tax rate of approximately 45% on the net income connected with a U.S. trade or business.

Foreign corporations not engaged in a trade or business in the U.S. are subject to U.S. income tax, effected through withholding by the payer, on certain fixed or determinable annual or periodic gains, profits and income derived from sources within the U.S. as enumerated in Section 881(a) of the Internal Revenue Code, such as dividends and interest on certain investments.

The U.S. imposes a base erosion and anti-abuse tax (BEAT) on certain payments from entities subject to U.S. tax to related foreign persons, also referred to as base erosion payments. Base erosion payments generally include any amounts that are deductible, including reinsurance premiums ceded to a related foreign person. Entities that meet certain thresholds are required to pay the minimum BEAT. The minimum BEAT is based on the excess of a percentage of the entities' modified taxable income over its regular tax liability for the year. Modified taxable income is the taxpayer's regular taxable income increased by any base erosion

tax benefit with respect to any "base erosion payment" and an adjustment for the taxpayer's net operating loss deduction, if any. The modified taxable income is taxed at 5% in 2018, 10% in 2019 through 2025, and 12.5% thereafter. This provision generally applies to entities that are subject to US net income tax with average annual gross receipts of at least $500 million and that have made foreign related-party deductible payments totaling 3% or more of the entities' total deductions for the year.

The U.S. also imposes an excise tax on insurance and reinsurance premiums paid to foreign insurers or reinsurers with respect to risks located in the U.S. The rate of tax applicable to reinsurance premiums paid to PartnerRe Bermuda is 1% of gross premiums.

Legal Proceedings

The Company's reinsurance subsidiaries, and the insurance and reinsurance industry in general, are subject to litigation and arbitration in the normal course of their business operations. In addition to claims litigation, the Company and its subsidiaries may be subject to lawsuits and regulatory actions in the normal course of business that do not arise from or directly relate to claims on reinsurance treaties. This category of business litigation typically involves, among other things, allegations of underwriting errors or omissions, employment claims or regulatory activity. While the outcome of business litigation cannot be predicted with certainty, the Company will dispute all allegations against the Company and/or its subsidiaries that management believes are without merit.

At December 31, 2018, the Company was not a party to any litigation or arbitration that it believes could have a material effect on the financial condition, results of operations or liquidity of the Company.

Disclosure Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act

Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 ("Section 219") added Section 13(r) to the Exchange Act. Section 13(r) requires an issuer to disclose in its annual or quarterly reports filed with the SEC whether the issuer or any of its affiliates have knowingly engaged in certain activities, transactions or dealings with the Government of Iran, relating to Iran or with designated natural persons or entities involved in terrorism or the proliferation of weapons of mass destruction during the period covered by the annual or quarterly report. Disclosure is required even when the activities were conducted outside the U.S. by non-U.S. entities and even when such activities were conducted in compliance with applicable law.

On January 16, 2016, the United States and the EU eased sanctions against Iran pursuant to the Joint Comprehensive Plan of Action ("JCPOA"). On May 8, 2018, the United States announced their withdrawal from the JCPOA (the "U.S. Decision"), thus re-imposing sanctions against Iran after the expiry of the permitted 90 and 180 day wind-down periods, i.e. respectively August 6, 2018 and November 4, 2018. The assessment of the economic situation resulting from the U.S. Decision had led PartnerRe to decide not to pursue business in Iran. Accordingly, contracts entered into by our non-U.S. reinsurance subsidiaries with Iranian entities prior to the U.S. Decision were either not renewed or terminated in a timely manner.

In respect of transactions to be disclosed pursuant to Section 219, carried out in 2018 prior to the U.S. Decision, we can comment as follows:

Through the intermediary of non-Iranian brokers, a non-U.S. subsidiary of PartnerRe Bermuda, entered into a four layer property excess of loss reinsurance treaty with Bimeh Iran which is an entity that has been identified as owned or controlled by the Government of Iran and appears on the List of Persons Identified as Blocked Solely Pursuant to Executive Order 13599. The agreement was executed in 2018 and coverage began January 1, 2018; however, the coverage was terminated by the non-U.S. subsidiary of PartnerRe Bermuda with an effective date of November 4, 2018. Gross revenue was €183 thousand and net profit attributable to the contract was €35 thousand during 2018. This entity was also exposed to a loss pursuant to a marine (cargo and hull) excess of loss reinsurance treaty (the "Treaty") in respect of a collision in January 2018 of two vessels one of which, covered by the Treaty, caught fire and sank. The sunk vessel was owned or controlled by the Government of Iran, appears on the List of Persons Identified as Blocked Solely Pursuant to Executive Order 13599 and was operated by National Iranian Tanker Company. In addition, the sunk vessel was used to transport condensate from Iran to South Korea. To date and to our knowledge, our exposure amounts to €144 thousand. This claim was notified to PartnerRe in early November 2018 and we have blocked payment of this claim due to the position of our financial institution who refuses to settle payments relating to Iran.

C. Organizational Structure

The Company's Class A common shares are owned by EXOR Nederland N.V., whose ultimate parent is EXOR N.V., an investment holding company listed on the Milan Stock Exchange. The Company has also issued Class B shares to certain executives of the Company.

In addition to the Company, significant subsidiaries of EXOR N.V. include Fiat Chrysler Automobiles, CNH Industrial, Ferrari, The Economist Group and Juventus Football Club.

The Company's principal operating subsidiaries at December 31, 2018 are as follows:

	Jurisdiction	Percentage Interest Held
Partner Reinsurance Company Ltd.	Bermuda	100%
Partner Reinsurance Europe SE	Ireland	100%
Partner Reinsurance Company of the U.S.	New York, United States	100%
Partner Reinsurance Asia Pacific Pte. Ltd.	Singapore	100%

See History and Development of the Company section above and also Share Ownership section in Item 6 and Notes 1 and 14 to the Consolidated Financial Statements in Item 18 of this report for further details.

See Exhibit 8.1 to this annual report on Form 20-F for a listing of the Company's subsidiaries.

D. Property, Plants and Equipment

The Company leases office space in Hamilton (Bermuda) where its principal executive offices are located. Additionally, the Company leases office space in various other locations, principally in Dublin, Stamford, Connecticut in the U.S., Toronto, Paris, Singapore and Zurich.

In 2017, the Company purchased from a related party certain real estate investments located in London, U.K. See Note 18 to the Consolidated Financial Statements in Item 18 for further details.

ITEM 4.A UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The financial information for the years ended December 31, 2018, 2017 and 2016 presented below is based on, or has been derived from, and should be read in conjunction with, the U.S. GAAP Consolidated Financial Statements presented in Item 18 of this report. The financial results below are presented in U.S. dollars as the reporting currency.

The discussion below includes forward-looking statements, which, although based on assumptions that we consider reasonable, are subject to risks and uncertainties which could cause actual events or conditions to differ materially from those expressed or implied by the forward-looking statements. See G. Safe Harbor section below and Risk Factors in Item 3 of this report for a discussion of risks and uncertainties.

Executive Overview

The Company is a leading global reinsurer, with a broadly diversified and balanced portfolio of traditional reinsurance risks and capital markets risks. The Company has three segments: P&C, Specialty, and Life and Health (see Results by Segment below).

The Company is in the business of assessing and assuming risk for an appropriate return. The Company creates value through its ability to understand, evaluate, diversify and distribute risk. The Company's strategy is founded on a capital-based risk appetite and the selected risks that management believes will allow the Company to meet its goals for appropriate profitability and risk management within that appetite. Management believes that this construct allows the Company to balance the cedant's need for confidence of claims payment with shareholder needs for an appropriate return on capital.

The Company's long-term objective is to manage a portfolio of diversified risks that will create shareholder value. The Company's profitability in any particular period can be significantly affected by large catastrophic or other large losses and the impact of changes in interest rates on the fair value of investments (see Key Factors Affecting Year-over-Year Comparability below). Accordingly, the Company's performance during any particular period is not necessarily indicative of its performance over the longer-term reinsurance cycle.

Non-life Reinsurance Operations

The Company generates its non-life reinsurance revenue from premiums. Premium rates and overall terms and conditions vary depending on market conditions. The Company writes a large majority of its non-life business on a treaty basis with a majority renewing on January 1. The remainder of this business renews at other times during the year. In addition to treaty business, the Company writes direct and facultative business which renews throughout the year.

Pricing cycles are driven by supply of capital in the industry and demand for reinsurance and insurance and other risk transfer products. The reinsurance business is also influenced by several other factors, including variations in interest rates and financial markets, changes in legal, regulatory and judicial environments, loss trends, inflation, foreign exchange rate changes, and general economic conditions.

In an increasingly competitive market environment, and considering increased regulatory and rating agency expectations, the Company continues to focus on its risk management strategy, financial strength, underwriting selection process and global presence. The Company removes the volatility associated with those risks from the client, and then manages those risks and the risk-related volatility. Through its broad product and geographic diversification, the Company is able to achieve portfolio diversification of risks, and its execution capabilities and global presence enable the Company to respond quickly to market needs.

A key challenge facing the Company is successfully managing risk through all phases of the reinsurance cycle. The Company believes that its long-term strategy of closely monitoring and being selective in the business that it writes, and maintaining the diversification and balance of its portfolio, will optimize returns over the reinsurance cycle. Individual businesses and markets have their own unique characteristics and are at different stages of the reinsurance pricing cycle at any given point in time. Management believes the Company has an appropriate portfolio diversification by product, geography, type of business, length of tail and distribution channel. Further, management believes that this diversification, in addition to the financial strength of the Company and its strong global franchise, will help to mitigate cyclical declines in underwriting profitability.

The Non-life reinsurance market has historically been highly cyclical in nature as evidenced by hard and soft markets. For many years, with the exception of lines and markets impacted by specific catastrophic or large loss events, the Company has experienced soft market conditions with either general decreases, no changes, or marginal improvements, in pricing and profitability. Price increases were experienced in loss exposed lines of business following losses incurred in 2017 and 2018. However, the availability of capital has reduced the amplitude of cycles compared to the past.

Life and Health Reinsurance Operations

The Company’s Life and Health segment derives revenues primarily from premiums. Within the Life and Health segment, the Company writes mortality, morbidity and longevity products. Management believes the Life and Health business provides the Company with diversification benefits and balance to its portfolio as they are generally not correlated to the Company’s Non-life business.

The profitability of the Life and Health business mainly depends on the volume and amount of death and disability claims incurred, medical claims and expenses, and the ability to adequately price the risk the Company assumes. The majority of the life premium arises from long-term in-force contracts. The life reinsurance policies are often in force for the remaining lifetime of the underlying individuals insured, with premiums earned typically over a period of 10 to 30 years. The volume of the business may be reduced each year by lapses, voluntary surrenders, death of insureds and recaptures by ceding companies. While death claims are reasonably estimated over a period of many years, claims become less predictable over shorter periods and can fluctuate significantly from period to period. Similarly, while the volume of medical claims can be predicted to a certain extent, the amount of claims and expenses depends on various factors, primarily healthcare inflation rates, driven by a shift towards the older population, reliance on expensive medical equipment and technology, and changes in demand for healthcare services over time. Compared to the Non-life markets, the Life and Health reinsurance markets are more concentrated, with fewer market participants.

During 2018, the Company continued to execute its growth strategy in the Life and Health segment by continuing to increase new business volume and hiring additional employees to support further growth in this segment.

Industry Environment

In spite of the challenging and limited growth environment experienced in the reinsurance industry for a number of years, the need for reinsurance is not diminishing. The reinsurance environment has become more and more complex, as traditional forms of risk are increasingly exposed to globalization and urbanization and as new forms of risks have developed (such as cyber, geopolitical and supply chain). The need for reinsurance is further supported by factors such as primary insurers' needs to reduce volatility in earnings and a high protection gap in the Non-life and Life and Health reinsurance and emerging markets. While the alternative capital market has experienced growth, it cannot replace traditional reinsurers whose balance sheets can absorb risks more efficiently, especially in medium and long tail lines of business.

Strategic Initiatives

The Company's strategy is to focus on reinsurance of business written by our cedants, and not compete with our clients through directly writing or assuming insurance risks. The Company is focused on striking the right balance between top down and bottom up risk selection by broadening scope and client penetration for well-understood, efficient risk classes and keeping a selective approach for less predictable risk patterns. Among the Company's strategic priorities are growing the non-life footprint

with selected clients and brokers, using retrocession to enhance balance sheet strength and relevance, and growing the Life and Health book in targeted product segments and geographies. The Company will continue to execute its growth strategy in the Life and Health segment by continuing to increase new business volume, leveraging new talent hired, to support further growth in this segment.

Reinsurance Market Outlook

The Company believes that overall, reinsurance will broadly remain a cyclical market, albeit of less amplitude, primarily as a result of excess capital, and that the cycles will become more specific and local, with less global amplitude.

The outlooks for 2019 for each of the Company's segments are summarized as follows:

2019 P&C Segment Outlook

During the January 1, 2019 renewals, the Company observed improving pricing trends in most of the North American business. Our European business continued to see low single digit rate decreases. We expect to experience an improved pricing environment for the remainder of 2019, driven by the Japanese and Florida renewals. The expected premium volume outlook for 2019, at constant foreign exchange rates, increased by 15% compared to the prior year. As a result of the persisting competition and excess capacity in the industry, it is not possible to forecast if improving pricing conditions will continue in the future.

2019 Specialty Segment Outlook

During the January 1, 2019 renewals, the Company generally observed improved pricing in most lines of business within the Specialty segment (aviation, marine, energy, engineering and property). The expected premium volume outlook for 2019, at constant foreign exchange rates, increased by 10% compared to the prior year. As a result of the persisting competition and excess capacity in the industry, it is not possible to forecast if improving pricing conditions will continue in the future.

2019 Life and Health Outlook

The January 1, 2019 renewal for Life business is not significant, as it only impacts the short-term mortality in-force premium, which is a relatively limited portion of the Life portfolio. Management expects moderate continued growth in the Company's Life portfolio in 2019 assuming constant foreign exchange rates, mainly due to growth in Asia, Canada and the United States. Pricing conditions are not expected to materially differ from 2018.

Investment Operations

The Company generates revenue from its high quality investment portfolio through net investment income, including interest on fixed maturities and dividends on equity securities, interest in earnings of equity method investments, and realized and unrealized gains on investments.

For the Company's investment risks, which include public, private market and real estate investments, diversification of risk is critical to achieving the risk and return objectives of the Company.

From a risk management perspective, the Company allocates its invested assets into two categories: liability funds and capital funds. The Company's investment policy distinguishes between liquid, high quality (investment grade) assets that support the Company's liabilities, and the more diversified, higher risk asset classes that are allowed within the Company's capital funds.

Liability funds represent invested assets supporting the net reinsurance liabilities, and are invested primarily in investment-grade fixed maturity securities and cash and cash equivalents. The preservation of liquidity and protection of capital are the primary investment objectives for these assets. The portfolio managers are required to adhere to investment guidelines as to minimum ratings and issuer and sector concentration limitations. Liability funds are invested in a way that generally matches them to the corresponding liabilities (referred to as asset-liability matching) in terms of both duration and major currency composition to provide the Company with a natural hedge against changes in interest and foreign exchange rates. In addition, the Company utilizes certain derivatives to further protect against changes in interest and foreign exchange rates. Liability funds represented approximately 54% of the total invested assets at December 31, 2018 and 2017.

Capital funds represent total capital of the Company, which includes shareholders' equity and debt liabilities, and are invested in a diversified portfolio with the objective of maximizing investment return, subject to prudent risk constraints. Capital funds contain most of the asset classes typically viewed as offering a higher risk and higher return profile, subject to risk assumption and portfolio diversification guidelines which include issuer and sector concentration limitations. Capital funds may be invested in investment grade and below investment grade fixed maturity securities, publicly listed and private equities, bond and loan investments, real estate investments, structured credit and certain other specialty asset classes. Capital funds represented approximately 46% of the total invested assets at December 31, 2018 and 2017.

While there will be periods where such investments may earn less than the risk-free rate of return, or potentially produce negative results, the Company believes the rewards for assuming these risks in a disciplined and measured way will produce a positive excess return to the Company over time. Additionally, since a portion of our investment risks are not fully correlated with the Company's reinsurance risks, this increases the overall diversification of the Company's total risk portfolio.

The Company employs a prudent investment philosophy. It maintains a high quality, well-balanced and liquid portfolio with total investment return achieved through a combination of optimizing current investment income and pursuing capital appreciation.

The Company's investment strategy allows for the use of derivative instruments, subject to strict limitations. The Company may utilize various derivative instruments, such as treasury note and equity futures contracts, credit default swaps, foreign currency option contracts, foreign exchange forward contracts, total return and interest rate swaps, insurance-linked securities and to-be-announced mortgage-backed securities (TBAs) for the purpose of managing and hedging currency risk, market exposure and portfolio duration, hedging certain investments, mitigating the risk associated with underwriting operations, or enhancing investment performance that would be allowed under the Company's investment policy if implemented in other ways. The use of financial leverage, whether achieved through derivatives or margin borrowing, requires approval from the Board. At December 31, 2018, the Company had no financial leverage achieved through derivatives and no margin borrowing has been approved by the Board.

The Company follows prudent investment guidelines through a strategy that seeks to maximize returns while managing investment risk in line with the Company's overall objectives of earnings stability and long-term book value growth. A key challenge for the Company is achieving the right balance in changing market conditions. The Company regularly reviews the allocation of investments to asset classes within its investment portfolio and allocates investments to those asset classes the Company anticipates will outperform in the future, subject to limits and guidelines. Similarly, the Company reduces its exposure to asset classes where returns are deemed unattractive. The Company may also lengthen or shorten the duration of its fixed maturity portfolio in anticipation of changes in interest rates, or increase or decrease the amount of credit risk it assumes, depending on credit spreads and anticipated economic conditions.

In 2018, the Company's investment portfolio benefited by higher reinvestment rates and a change in portfolio mix resulting in higher net investment income. However, 2018 was impacted by unrealized investment losses driven by increases in U.S. risk-free rates, widening of U.S. and European investment grade corporate spreads and losses on London-based real estate assets.

Assuming constant foreign exchange rates and the absence of negative cash flows related to catastrophic or large loss events, management plans to grow net investment income in 2019 compared to 2018 primarily due to changes in the investment portfolio mix aimed at increasing yield and decreasing duration.

A. Operating Results

At December 31, 2018 and 2017, EXOR Nederland N.V. holds 100% of the 100 million Class A shares of $0.00000001 par value each for a total share capital of $1.00. The common shares are not listed. Accordingly, per share data is not considered meaningful to present.

Key Factors Affecting Year-over-Year Comparability

The key factors affecting the year-over-year comparability of the Company's net income or loss for the years ended December 31, 2018, 2017 and 2016 include the following:

- Large catastrophic and large loss events impacting non-life segment underwriting results
- Volatility in capital markets impacting investment results
- Fluctuations in other expenses, and
- Foreign exchange rate fluctuations.

These factors, as well as other factors described below, may continue to affect our results of operations and financial condition in the future. Each of these key factors is discussed further in the Review of Net Income or Loss section below with respect to the impact on Net income or loss for each of the years ended December 31, 2018, 2017 and 2016.

Review of Net Income or Loss

The components of net income or loss for the years ended December 31, 2018, 2017 and 2016 are presented in the Company's Consolidated Statements of Operations, and in the breakdown by segment in Note 19 to the Consolidated Financial Statements, in Item 18 of this report.

Management analyzes the Company’s net income or loss in three parts: underwriting result, investment result, and corporate and other, which comprises the other components of net income or loss not allocated to the Company’s Non-life and Life and Health segments.

The net income or loss for the years ended December 31, 2018, 2017 and 2016 was comprised as follows (in millions of U.S. dollars):

	2018	2017[1]	2016[1]
Underwriting result			
P&C	**$ (189)**	$ (343)	$ 154
Specialty	**142**	247	105
Total Non-life	**$ (47)**	$ (96)	$ 259
Life and Health	**20**	8	(7)
	$ (27)	$ (88)	$ 252
Investment result	**37**	720	414
Corporate and Other	**(96)**	(368)	(219)
Net (loss) income	**$ (86)**	$ 264	$ 447

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment and, as a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

The components of net (loss) income, and changes for the years presented above, are described below.

Underwriting Result

Underwriting result consists of technical result (which is net premiums earned less losses and loss expenses and acquisition costs) and other income (loss), less other expenses that are attributable to the respective segment. Underwriting result is a primary measure of underlying profitability for the Company’s core reinsurance operations, separate from the investment results, and is used to manage and evaluate the Company's Non-life segments (P&C and Specialty) and Life and Health segment. The Company believes that in order to enhance the understanding of its profitability, it is useful for our shareholders and other users of this report to evaluate the components of net income or loss separately and in the aggregate. Underwriting result should not be considered a substitute for net income or loss and does not reflect the overall profitability of the business, which is also impacted by investment results and other items included in corporate and other above and discussed in more detail below in Corporate and Other section.

Underwriting result, a key factor affecting net income or loss, is discussed further below in the Results by Segment section for each of the two Non-life segments (P&C and Specialty) and for the Life and Health segment.

Results by Segment

The Company monitors the performance of its operations in three segments: P&C, Specialty and Life and Health. Effective July 1, 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the financial results for U.S. health business are reflected in the P&C segment for 2018 and the impacted 2017 and 2016 comparatives have been reclassified from the Life and Health to the P&C segment to conform to current presentation.

See Note 19 to the Consolidated Financial Statements included in Item 18 of this report for a description of the Company’s segments, a discussion on how the Company measures its segment results, and a breakdown of net income or loss, including underwriting results by segment, for each of the years ended December 31, 2018, 2017 and 2016.

Non-life Results

The Non-life underwriting results for 2018, 2017 and 2016 were largely driven by premiums earned reduced for losses and loss expenses (which included losses from large catastrophic losses and large loss events, partially offset by net favorable prior year development), and also reduced for acquisition costs, as more fully described below.

Large catastrophic and large loss events

As the Company’s reinsurance operations are exposed to low-frequency and high-severity risk events, some of which are seasonal, results for certain periods may include unusually low loss experience, while results for other periods may include modest or significant loss experience driven by catastrophic losses.

The Company generally considers losses greater than $35 million, net of retrocession and reinstatement premiums, to be large catastrophic or large loss events. In 2018, losses related to Hurricane Florence and Typhoon Trami were individually less than $35 million each, but have been included in the large catastrophic and large loss total below as the losses combined with other events noted below were greater than $35 million based on best estimates as of December 31, 2018.

The combined impact of the large catastrophic and large losses on the Company's operating results for the years ended December 31, 2018, 2017 and 2016 was as follows (in millions of U.S. dollars, except ratios):

	2018			2017(1)			2016(1)		
	P&C segment	Specialty segment	Total Non-life	P&C segment	Specialty segment	Total Non-life	P&C segment	Specialty segment	Total Non-life
Large catastrophic and large losses	$ 382	$ 4	$ 386	$ 508	$ 61	$ 569	$ 110	$ 46	$ 156
Impact on combined ratio			9.0%			14.1%			3.7%

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment and, as a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

Large catastrophic and large losses, net of retrocession and reinstatement premiums, were comprised as follows:

- 2018: $176 million related to Typhoons Jebi and Trami, Hurricanes Florence and Michael and $210 million related to California Wildfires
- 2017: $449 million related to Hurricanes Harvey, Irma and Maria (HIM) and $120 million related to California Wildfires
- 2016: $69 million related to Canadian Wildfires, $45 million related to Hurricane Matthew and $42 million related to an energy loss.

Losses and loss expenses for 2018, 2017 and 2016 were reduced for net favorable prior year development in both the P&C and Specialty segments. Non-life net favorable development was $249 million (5.8 points on the combined ratio) for 2018, $448 million (11.1 points on the combined ratio) for 2017, and $677 million (16.2 points on the combined ratio) for 2016. See Note 19 to the Consolidated Financial Statements in Item 18 of this report for definition of combined ratio. See Note 8(a) to the Consolidated Financial Statements in Item 18 of this report for a further discussion of the reserve development related to prior accident years.

See results for each of the P&C and Specialty segments below for further details of Non-life underwriting results, and the Life and Health segment results that follows, for discussions on factors impacting net income or loss as it relates to the Company's underwriting results for each of the years ended December 31, 2018, 2017 and 2016. Details of Other income and Other expenses are discussed in the Corporate and Other section below.

In addition to the information presented below, see also Note 19 to the Consolidated Financial Statements in Item 18 of this report for a breakdown of Company's net income, including the Non-life and Life and Health underwriting results, and for details of combined ratios for the Non-life segments for the years ended December 31, 2018, 2017 and 2016.

P&C Segment

The components of underwriting result, including technical result, which is calculated as net premiums earned less losses and loss expenses and acquisition costs, and the corresponding ratios (which are calculated as a percentage of net premiums earned) for the P&C segment for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars, except ratios):

	2018	2017[2]	2016[2]
Gross premiums written	**$ 3,015**	$ 2,671	$ 2,633
Premiums ceded	**(293)**	(296)	(254)
Net premiums written	**$ 2,722**	$ 2,375	$ 2,379
Net premiums earned	**$ 2,535**	$ 2,330	$ 2,403
Losses and loss expenses	**(2,073)**	(2,051)	(1,494)
Acquisition costs	**(606)**	(534)	(595)
Technical result	**$ (144)**	$ (255)	$ 314
Other income	**30**	—	3
Other expenses[1]	**(75)**	(88)	(163)
Underwriting result	**$ (189)**	$ (343)	$ 154
Loss ratio	**81.8%**	88.0%	62.1%
Acquisition ratio	**23.9**	22.9	24.8
Technical ratio	**105.7%**	110.9%	86.9%
Other expense ratio	**3.0**	3.8	6.8
Combined ratio	**108.7%**	114.7%	93.7%

(1) The Company allocates certain other expenses that vary with business written by its operating segments. See Other expenses in Corporate and Other section below.

(2) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment and, as a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

Technical and underwriting results and related ratios

The P&C underwriting and technical results for 2018, 2017 and 2016 were largely driven by premiums written and earned reduced for losses and loss expenses, and, to a lesser extent, acquisition costs.

2018 compared to 2017

The reduced technical loss (and the corresponding decrease in the technical ratio) in 2018 compared to 2017 was largely driven by an increase in net premiums earned and a lower loss ratio, partially offset by higher acquisition costs. The reduced underwriting result loss (and a corresponding decrease in the combined ratio) was driven by the increase in the technical result, and, to a lesser extent, a decrease in other expenses. See Corporate and Other section below for further details on Other expenses.

2017 compared to 2016

The decrease in the technical result (and the corresponding increase in the technical ratio) in 2017 compared to 2016 was largely driven by a higher loss ratio and, to a lesser extent, a decrease in net premiums earned, partially offset by a decrease in acquisition costs. The decrease in the underwriting result (and a corresponding increase in the combined ratio) was driven by the decrease in the technical result, partially offset by a decrease in other expenses as a result of the efficiency actions undertaken following the closing of the acquisition by Exor N.V. See Corporate and Other section below for further details on Other expenses.

The changes in premiums written and earned and losses and loss expenses are described further below.

Premiums

The P&C segment represented 47%, 46% and 48% of total net premiums written in 2018, 2017 and 2016, respectively. Business reported in this segment is, to a significant extent, originally denominated in foreign currencies and is reported in U.S. dollars. The U.S. dollar can fluctuate significantly against other currencies and this should be considered when making year-over-year comparisons. See Corporate and Other—Foreign exchange movements section below for further details of movements in foreign exchange.

2018 compared to 2017

The increase in gross and net premiums written and net premiums earned was driven primarily by new business written, partially offset by cancellations and lower gross reinstatement premiums compared to the prior year relating to large catastrophic losses in 2017. Net premiums written and earned included a reduction for premiums ceded which were marginally lower than the prior year.

2017 compared to 2016

The increase in gross premiums written was driven primarily by new business written for U.S. health, partially offset by decreases in gross premiums written for other lines within in the P&C segment. Gross premiums written for these other lines decreased due to cancellations and renewal changes across all lines, partially offset by new business written and higher reinstatement premiums compared to 2016. Net premiums written and earned were lower in 2017 compared to 2016 as a result of higher premiums ceded in 2017, which included increased cessions for the catastrophe portfolio, partially offset by the factors described for increase in gross premiums written.

Losses and loss expenses

Losses and loss expenses include large catastrophic and large losses described above, partially offset by net favorable prior year development referred to above. See Note 8 to the Consolidated Financial Statements in Item 18 of this report for further details of losses and loss expenses and prior year development.

2018 compared to 2017

The increase in losses and loss expenses was primarily driven by growth in business and a lower level of favorable prior year loss development. This was partially offset by a lower level of large catastrophic and large losses described above and a lower level of losses experienced in U.S. health business in 2018 compared to 2017 where there was an increase in frequency of large claims activity in underwriting years 2015 to 2017.

2017 compared to 2016

The increase in losses and loss expenses was primarily attributable to a higher level of large catastrophic and large losses as described above and a lower level of favorable prior year loss development in addition to the increased loss activity for U.S. health business for 2017 described above.

Acquisition costs

2018 compared to 2017

The increase in acquisition costs was in line with an increase in net premiums earned. The related acquisition cost ratio, calculated as acquisition costs divided by net premiums earned, increased compared to 2017, driven by a lower level of favorable loss sensitive commissions in 2018, and lower levels of reinstatement premiums in 2018, which increased net premiums earned with little to no corresponding impact to acquisition costs.

2017 compared to 2016

The decrease in acquisition costs was in line with a decrease in net premiums earned. The related acquisition cost ratio decreased in 2017 compared to 2016 driven by higher levels of favorable loss sensitive commissions and reinstatement premiums in 2017.

Specialty Segment

The components of underwriting result, including technical result, which is calculated as net premiums earned less losses and loss expenses and acquisition costs, and the corresponding ratios, which are calculated as a percentage of net premiums earned, for the Specialty segment for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars, except ratios):

	2018	2017	2016
Gross premiums written	**$ 2,050**	$ 1,934	$ 1,920
Premiums ceded	**(180)**	(154)	(144)
Net premiums written	**$ 1,870**	$ 1,780	$ 1,776
Net premiums earned	**$ 1,767**	$ 1,725	$ 1,767
Losses and loss expenses	**(1,096)**	(955)	(1,073)
Acquisition costs	**(502)**	(489)	(500)
Technical result	**$ 169**	$ 281	$ 194
Other loss	**—**	(1)	(1)
Other expenses[1]	**(27)**	(33)	(88)
Underwriting result	**$ 142**	$ 247	$ 105
Loss ratio	**62.0%**	55.4%	60.8%
Acquisition ratio	**28.4**	28.4	28.3
Technical ratio	**90.4%**	83.8%	89.1%
Other expense ratio	**1.5**	1.9	4.9
Combined ratio	**91.9%**	85.7%	94.0%

(1) The Company allocates certain other expenses that vary with business written by its operating segments. See Other expenses in Corporate and Other section below.

Technical and underwriting results and related ratios

The Specialty underwriting and technical results for 2018, 2017 and 2016 were largely driven by premiums written and earned reduced for losses and loss expenses, and, to a lesser extent, acquisition costs.

2018 compared to 2017

The decrease in the technical result (and the corresponding increase in the technical ratio) in 2018 compared to 2017 was largely driven by an increase in the loss ratio, partially offset by an increase in net premiums earned. The decrease in the underwriting result (and a corresponding increase in the combined ratio) was driven by the decrease in the technical result, partially offset by a decrease in other expenses. See Corporate and Other section below for further details on Other expenses.

2017 compared to 2016

The increase in the technical result (and the corresponding decrease in the technical ratio) in 2017 compared to 2016 was largely driven by a decrease in the loss ratio, partially offset by a decrease in net premiums earned. The increase in the underwriting result (and a corresponding decrease in the combined ratio) was driven by the increase in the technical result and a decrease in other expenses as a result of the efficiency actions undertaken following the closing of the acquisition by Exor N.V. See Corporate and Other section below for further details on Other expenses.

The changes in premiums written and earned and losses and loss expenses are described further below.

Premiums

The Specialty segment represented 32%, 35% and 36% of total net premiums written in 2018, 2017 and 2016, respectively. Business reported in this segment is, to a significant extent, originally denominated in foreign currencies and is reported in U.S. dollars. The U.S. dollar can fluctuate significantly against other currencies and this should be considered when making year-over-year comparisons. See Corporate and Other—Foreign exchange movements section below for further details of movements in foreign exchange.

2018 compared to 2017

The increase in gross and net premiums written and earned was driven primarily by new business across all lines. These increases were partially offset by cancellations and renewal changes. Net premiums written and earned were partially offset by higher premiums ceded in 2018 under new and existing contracts.

2017 compared to 2016

The increase in gross and net premiums written was driven primarily by new business written and renewal changes. These increases were largely offset by cancellations and the impact of foreign exchange. Net premiums written and earned are reduced for premiums ceded. Net premiums earned decreased due to higher premiums ceded in 2017 under new and existing contracts.

Losses and loss expenses

2018 compared to 2017

The increase in losses and loss expenses was primarily attributable to higher mid-sized losses in the current accident year and a lower level of favorable prior year loss development in 2018 compared to 2017, partially offset by a lower level of large catastrophic and large losses in 2018 than in 2017, as noted above under Non-life Results section.

2017 compared to 2016

The decrease in losses and loss expenses was primarily attributable to lower mid-sized and attritional losses in the current accident year, partially offset by a higher level of large catastrophic and large losses discussed above in the Non-life Results section in addition to a lower level of favorable prior year loss development in 2017 compared to 2016.

See Note 8 to the Consolidated Financial Statements in Item 18 of this report for further details of losses and loss expenses and prior year development.

Acquisition costs

Acquisition costs and the related acquisition cost ratio, calculated as acquisition costs divided by net premiums earned, remained relatively stable at approximately 28% for the years ended December 31, 2018, 2017 and 2016, as noted in the table above.

Life and Health Segment

The Company provides reinsurance of life and health related risks including mortality, morbidity, longevity and non-U.S. health. Reinsurance coverage is provided to primary life insurers and pension funds to protect against individual and group mortality and disability risks. The Company also provides reinsurance coverage to employer sponsored pension schemes and primary life insurers who provide pensions or issue annuity contracts offering long-term retirement benefits to consumers, who, in turn, seek protection against outliving their financial resources.

Mortality business is written primarily on a proportional basis through treaty agreements and is subdivided into death and disability covers (with various riders), term assurance and critical illness (TCI) and GMDB. The Company also writes certain treaties on a non-proportional basis.

Longevity business is written on a long-term, proportional basis. The Company's longevity portfolio is subdivided into standard and non-standard annuities. The non-standard annuities are sold to consumers with aggravated health conditions and are usually medically underwritten on an individual basis. The main risk the Company is exposed to by writing longevity business is an increase in the future life span of the insured compared to the expected life span.

The components of the allocated underwriting result for the Life and Health segment for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars):

	2018	2017[3]	2016[3]
Gross premiums written	**$ 1,235**	$ 983	$ 804
Premiums ceded	**(24)**	(18)	(5)
Net premiums written	**$ 1,211**	$ 965	$ 799
Net premiums earned	**$ 1,212**	$ 970	$ 800
Losses and loss expenses	**(1,025)**	(835)	(681)
Acquisition costs	**(129)**	(97)	(92)
Technical result	**$ 58**	$ 38	$ 27
Other income[1]	**13**	14	10
Other expenses [2]	**(51)**	(44)	(44)
Underwriting result	**$ 20**	$ 8	$ (7)
Net investment income	**66**	60	58
Allocated underwriting result	**$ 86**	$ 68	$ 51

(1) Other income represents fee income on deposit accounted contracts and longevity swaps.

(2) The Company allocates certain other expenses that vary with business written by its operating segments. See Other expenses in Corporate and Other section below.

(3) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment and, as a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation as referred to above.

Allocated underwriting result

The underwriting result for Life and Health is increased by net investment income allocated to this segment to determine allocated underwriting result. See Investments Results section below for further details on net investment income. The Life and Health underwriting and allocated underwriting results for 2018, 2017 and 2016 were largely driven by premiums earned reduced for losses and loss expenses, and, to a much lesser extent, acquisition costs.

2018 compared to 2017

The increase in allocated underwriting result was primarily driven by increased profitability and organic growth, including the acquired Aurigen operation, partially offset by higher expenses to support the Company's plans to grow the business.

2017 compared to 2016

The increase in the allocated underwriting result was primarily driven by growth in the business including the acquisition of Aurigen in April 2017.

The changes in premiums written and earned, losses and loss expenses are described further below.

Premiums

The Life and Health segment represented 21%, 19% and 16% of total net premiums written in 2018, 2017 and 2016, respectively. Business reported in this segment is, to a significant extent, originally denominated in foreign currencies and is reported in U.S. dollars. The U.S. dollar can fluctuate significantly against other currencies and this should be considered when making year-over-year comparisons. See Corporate and Other—Foreign exchange movements section below for further details of movements in foreign exchange.

2018 compared to 2017

The increases in gross and net premiums written and net premiums earned were primarily driven by organic growth. The increase is also partly driven by the inclusion of life premiums from the acquisition of Aurigen for a full year in 2018 compared to three quarters in 2017, following the acquisition in April 2017.

2017 compared to 2016

The increases in gross and net premiums written and net premiums earned were driven primarily by the inclusion of Aurigen premiums post acquisition in April 2017.

Losses and loss expenses

2018 compared to 2017

The increase in losses and loss expenses was primarily attributable to growth in the business and the inclusion of losses and loss expenses from the acquisition of Aurigen for a full year in 2018 compared to three quarters in 2017.

2017 compared to 2016

The increase in losses and loss expenses was primarily due to the inclusion of Aurigen losses and loss expenses post acquisition in April 2017.

Acquisition costs

Acquisition costs increased each year in line with increases in net premiums earned.

Investment Result

Investment result consists of net investment income, net realized and unrealized investment gains or losses and interest in earnings or losses of equity method investments. Net investment income includes interest, dividends and amortization of premiums and discounts on fixed maturities and short-term investments, as well as investment income on funds held, and is net of investment expenses and withholding taxes. Net realized and unrealized investment gains or losses include amounts realized from sales and redemptions of the Company's fixed maturities, short-term investments, equities and other invested assets, and changes in net unrealized investment gains or losses on these investments. Interest in earnings or losses of equity method investments represents the Company's aggregate share of earnings or losses related to several private placement investments and limited partnership interests.

The components of the investment result for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars, except percentages):

	2018	2017	2016
Net investment income[1]	**$ 416**	$ 402	$ 411
Net realized and unrealized investment (losses) gains	**(390)**	232	26
Interest in earnings (losses) of equity method investments	**11**	86	(23)
Total investment result	**$ 37**	$ 720	$ 414

(1) Includes amounts allocated to the Life and Health segment as presented in Results by Segment above.

Net Investment Income

Net investment income is largely driven by interest and amortization on fixed maturities, short-term investments and cash and cash equivalents. Net investment income by asset types for the years ended December 31, 2018, 2017 and 2016 is included in Note 4(b) to the Consolidated Financial Statements in Item 18 of this report and is summarized below (in millions of U.S. dollars):

	2018	2017	2016
Fixed maturities, short-term investments and cash and cash equivalents	**$ 392**	$ 388	$ 398
Equities, Funds held and other	**53**	37	48
Investment expenses	**(29)**	(23)	(35)
Net investment income	**$ 416**	$ 402	$ 411

2018 compared to 2017

Net investment income increased in 2018 compared to 2017 due to higher reinvestment rates and changes in portfolio mix, partially offset by higher investment expenses.

2017 compared to 2016

Net investment income decreased in 2017 compared to 2016 due to the partial sale of the principal finance portfolio in the fourth quarter of 2016, which was partially offset by the inclusion of Aurigen's portfolio, increases in reinvestment rates in the U.S. and Canada, a higher allocation to investment grade corporate bonds and lower investment expenses during the year.

Net Realized and Unrealized Investment (Losses) Gains

The Company's portfolio managers have a total return investment objective, achieved through a combination of optimizing current investment income and pursuing capital appreciation. To meet this objective, it is often desirable to buy and sell securities to take advantage of changing market conditions and to reposition the investment portfolios. Accordingly, recognition of realized gains and losses is considered by the Company to be a normal consequence of its ongoing investment management activities. In addition, the Company recognized changes in fair value for substantially all of its investments as changes in unrealized investment gains or losses in its Consolidated Statements of Operations. Realized and unrealized investment gains and losses are generally a function of multiple factors, with the most significant being prevailing interest rates, credit spreads and equity market conditions.

See Note 4(a) to the Consolidated Financial Statements in Item 18 of this report for details of realized investment gains and losses and changes in unrealized investment gains and losses by investment type. Investment results for the years ended December 31, 2018, 2017 and 2016 were significantly impacted by the volatility in the capital markets with the Company reporting Net realized and unrealized investment gains or losses, included in net income or loss, were as follows (in millions of U.S. dollars):

	2018	2017	2016
Net realized investment (losses) gains	**$ (202)**	$ 22	$ 104
Change in net unrealized investment gains or losses	**(182)**	210	(78)
Impairment loss on investments in real estate	**(6)**	—	—
Net realized and unrealized investment (losses) gains	**$ (390)**	$ 232	$ 26

The net realized and unrealized investment losses of $390 million in 2018 were largely driven by increases in U.S. risk-free rates, widening of U.S. and European investment grade corporate spreads and net realized investment losses on fixed maturities and short-term investments due to changes in investment portfolio mix aimed at increasing yield and decreasing duration. The net realized investment losses on fixed maturities and short-term investments were partially offset by net realized gains in equities and other invested assets. The impairment loss on investments in real estate was driven by a write-down in value of London-based real estate investments directly owned by the Company.

The net realized and unrealized investment gains of $232 million in 2017 were primarily due to narrowing of corporate bond spreads and positive performance in public and private equities, partially offset by increases in U.S. risk-free interest rates. The net realized investment gain was primarily driven by gains on sales or redemptions of fixed maturities and short-term investments.

The net realized and unrealized investment gains of $26 million in 2016 were largely driven by narrowing of credit spreads, partially offset by increases in U.S. risk-free interest rates. Net realized investment gains in 2016 were primarily driven by realized investments gains on fixed maturities and short-term investments.

See also Notes 3 and 4(a) to the Consolidated Financial Statements in Item 18 for further details.

Interest in Earnings (Losses) of Equity Method Investments

The interest in earnings of equity method investments of $11 million in 2018 was primarily due to gains on private equities, partially offset by a decrease in value related to real estate assets held by an equity method investee, Almacantar, a privately held real estate investment and development group.

The interest in earnings of equity method investments of $86 million in 2017 was primarily due to gains related to Almacantar driven by appreciation of real estate assets.

The losses of $23 million in 2016 were due to the Company's aggregate share of earnings or losses related to several private placement investments and limited partnerships.

Corporate and Other

The following are components of net income (in millions of U.S. dollars) that the Company does not allocate to segments, in line with the way the Company manages its business, as described above.

	2018	2017	2016
Other expense, net of other income, not allocated to the segments[1]	**$ (146)**	$ (181)	$ (174)
Interest expense	**(43)**	(42)	(49)
Loss on redemption of debt	**—**	(2)	(22)
Amortization of intangible assets	**(35)**	(25)	(26)
Net foreign exchange gains (losses)	**119**	(108)	78
Income tax benefit (expense)	**9**	(10)	(26)
Corporate and Other	**$ (96)**	$ (368)	$ (219)

(1) The Company allocates certain other expenses that vary with business written by its operating segments. Refer to Underwriting Results section above for tables that include other expense and other income amounts allocated to each of the three segments.

Other Expenses

The Company's Other expenses are included in the underwriting result and in Corporate and other, as described above. The Company's total Other expenses in the Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars, except ratios):

	2018	2017	2016
Other expenses	**$ 306**	$ 348	$ 472
Other expenses, as a % of total net premiums earned	**5.5%**	6.9 %	9.5%

2018 compared to 2017

Other expenses of $306 million for 2018 decreased by $42 million, or 12%, in 2018 compared to 2017 primarily due to lower recurring personnel costs driven by a decrease in full-time equivalent employees as a result of efficiency actions undertaken by the Company, in addition to lower reorganization related, consulting and facilities costs, partially offset by higher expenses primarily in the Life and Health segment to support the Company's plans to grow the business. In 2018 and 2017, the Company recorded $11 million and $29 million, respectively, of reorganization related costs. In addition, for the year ended December 31, 2017, the Company recorded $4 million of transaction costs related to the acquisition of Aurigen.

2017 compared to 2016

Other expenses of $348 million for 2017 decreased by $124 million, or 26% in 2017 compared to 2016 primarily due to efficiency actions undertaken following the closing of the acquisition by Exor N.V. and lower reorganization and transaction costs, partially offset by the inclusion of Aurigen expenses post acquisition in April 2017. In 2017, the Company recorded a total of $33 million of reorganization related and transaction costs as described above. In 2016, the Company recorded $76 million of transaction related costs and $52 million of reorganization related costs primarily associated with the acquisition of the Company by Exor N.V. The $76 million transaction related costs included $38 million for settlement of share-based awards that fully vested upon the change in control of the Company.

Interest Expense

Interest expense of $43 million in 2018 was comparable to $42 million for 2017. Interest expense in 2017 decreased compared to $49 million for 2016 due to the optimization of the Company's capital structure through the issuance of a 750 million Euro-denominated bond in September 2016 and the redemption of certain high coupon senior notes and preferred shares during the fourth quarter of 2016 (see below and Note 10 to Consolidated Financial Statements in Item 18 of this report for further details).

Loss on Redemption of Debt

The loss on redemption of debt of $2 million in 2017 related to debt settled by Aurigen in 2017 and the $22 million in 2016 reflected a loss on redemption of the $250 million 2008 senior notes in 2016, representing a make whole provision related to future interest foregone as a result of the early retirement of debt (see Note 10 to the Consolidated Financial Statements in Item 18 for further details of the Company's redemption of senior notes).

Amortization of Intangible Assets

Amortization of intangible assets relates to intangible assets acquired upon acquisition of Paris Re in 2009, Presidio in 2012, Aurigen in 2017 and Claim Analytics Inc. in 2018. The increase in amortization expense from $25 million in 2017 to $35 million in 2018 was primarily related to a reduction for an intangible asset for guaranteed reserves following a commutation of a reserve agreement in 2018. Amortization expense for 2017 was comparable to 2016. See Note 7 to the Consolidated Financial Statements in Item 18 for further details.

Foreign Exchange Movements

The Company's reporting currency is the U.S. dollar. The Company's significant subsidiaries and branches have one of the following functional currencies: U.S. dollar, Euro or Canadian dollar. As a significant portion of the Company's operations is transacted in foreign currencies, fluctuations in foreign exchange rates may affect year-over-year comparisons. To the extent that fluctuations in foreign exchange rates affect comparisons, their impact has been quantified, when possible, and discussed throughout this annual report. See Note 2(m) to the Consolidated Financial Statements in Item 18 of this report for a discussion of translation of foreign currencies.

Net foreign exchange gains were $119 million for 2018 compared to losses of $108 million for 2017 and gains of $78 million for 2016. The gains in 2018 were mainly driven by the strengthening of the U.S. dollar against certain major currencies and foreign currency hedge results, while losses in 2017 were driven by the weakening of the U.S. dollar against certain foreign currencies and hedging costs. The gains in 2016 were mainly driven by the strengthening of the U.S. dollar against certain major currencies, partially offset by hedging costs.

The foreign exchange fluctuations for the principal currencies in which the Company transacts business were as follows:

- the U.S. dollar ending exchange rate strengthened against most major currencies, with the exception of the Japanese yen, at December 31, 2018 compared to December 31, 2017;
- the U.S. dollar average exchange rate for the year weakened against major currencies in 2018 compared to 2017;
- the U.S. dollar ending exchange rate weakened against major currencies at December 31, 2017 compared to December 31, 2016; and
- the U.S. dollar average exchange rate for the year weakened against certain major currencies, primarily the Euro and Canadian dollar, and strengthened against the GBP, Japanese yen and Swiss franc in 2017 compared to 2016.

The above fluctuations impacted individual line items of the Company's Consolidated Statement of Operations as well as the Change in currency translation adjustment included in Accumulated other comprehensive loss in the Consolidated Balance Sheets. The Company hedges a significant portion of its currency risk exposure as discussed in Quantitative and Qualitative Disclosures about Market Risk in Item 11 of this report and in Notes 2 (n) and 6 to the Consolidated Financial Statements in Item 18 of this report. See also section B. Liquidity and Capital Resources—Currency for a discussion of the impact of foreign exchange movements on the Consolidated Balance Sheets.

Income Taxes

The effective income tax rate, which the Company calculates as income tax expense or benefit divided by net income or loss before taxes, may fluctuate significantly from period to period depending on the geographic distribution of pre-tax net income or loss in any given period between different jurisdictions. The geographic distribution of pre-tax net income or loss can vary significantly between periods due to, but not limited to, the following factors: the business mix of net premiums earned, the geographic location, quantum and nature of net losses and loss expenses and life policy benefits incurred, the quantum and geographic location of other expenses, net investment income, net realized and changes in unrealized investment gains and losses and the quantum of specific adjustments to determine the income tax basis in each of the Company's operating jurisdictions. In addition, a significant portion of the Company's gross and net premiums are written and earned in Bermuda, a non-taxable jurisdiction, including the majority of the Company's catastrophe business, which can result in significant volatility in the Company's pre-tax net income or loss from period to period.

The Company’s income tax expense and effective income tax rate for the years ended December 31, 2018, 2017 and 2016 were as follows (in millions of U.S. dollars):

	2018	2017	2016
Income tax (benefit) expense	**$ (9)**	$ 10	$ 26
Effective income tax rate	**9.4%**	3.8%	5.5%

Income tax (benefit) expense and the effective income tax rate during 2018, 2017 and 2016 were primarily driven by the geographic distribution of the Company’s pre-tax losses between its various jurisdictions. In 2017, the income tax expense included a charge of $5 million related to the enactment of the Tax Cuts and Jobs Act in the U.S. In 2016, the income tax expense included a tax benefit of $29 million recorded following the favorable outcome of certain tax litigation and favorable adjustments related to certain tax-exempt bonds. See Note 13 to the Consolidated Financial Statements in Item 18 of this report for further details.

B. Liquidity and Capital Resources

The following discussion on liquidity and capital resources principally focuses on the Company’s Consolidated Balance Sheets and Consolidated Statements of Cash Flows. See Risk Factors in Item 3 for additional information concerning risks related to our business, strategy and operations.

Capital Adequacy

A key challenge for management is to maintain an appropriate level of capital. A key priority for management is to hold sufficient capital to meet all of the Company’s obligations to cedants, meet regulatory and rating agency requirements of the group and the Company's regulated subsidiaries and support its position as one of the stronger reinsurers in the industry. Management closely monitors its capital needs and capital level throughout the reinsurance cycle and, in times of volatility and turmoil in global capital markets, actively takes steps to increase or decrease the Company’s capital in order to achieve an appropriate balance of financial strength and shareholder returns. Capital management is achieved by either deploying or curtailing capital to fund business opportunities and, during times when the Company has excess capital and business opportunities are not so attractive, returning capital to its shareholders by way of dividends.

Shareholders’ Equity and Capital Resources Management

As part of its long-term strategy, the Company will seek to grow capital resources to support its operations throughout the reinsurance cycle, maintain strong ratings from the major rating agencies (see ratings summarized below) and maintain the ability to pay claims as they arise. The Company may also seek to restructure its capital through the repayment or purchase of debt obligations or preferred shares, or increase or restructure its capital through the issuance of debt or preferred shares, when opportunities arise.

The Company's total capital (defined as total of debt liabilities and preferred and common shareholders’ equity) at December 31, 2018 and 2017 was as follows (in millions of U.S. dollars, except percentages):

	December 31, 2018		December 31, 2017	
Senior notes	**$ 1,350**	**17%**	$ 1,385	17%
Capital efficient notes	**63**	**1**	63	1
Total debt liabilities	**$ 1,413**	**18%**	$ 1,448	18%
Preferred shareholders’ equity, aggregate liquidation value	**$ 704**	**9%**	$ 704	9%
Common shareholder’s equity	**5,812**	**73**	6,041	73
Total shareholders' equity	**$ 6,516**	**82%**	$ 6,745	82%
Total capital	**$ 7,929**	**100%**	$ 8,193	100%

Total capital of $7.9 billion at December 31, 2018 was down 3.2% compared to December 31, 2017 as a result of a decrease in common shareholder's equity and a decrease in carrying value of senior notes, described as follows:

- Shareholders’ equity, comprised of preferred and common shareholders’ equity in the table above, was $6.5 billion at December 31, 2018, a 3.4% decrease compared to December 31, 2017. The major factors contributing to this decrease were a comprehensive loss of $134 million and common and preferred dividend payments totaling $94 million in 2018.
- The decrease in senior notes is due to the foreign exchange impact of translating the Euro denominated debt into U.S. dollars, the Company's reporting currency.

See also Notes 10, 11, and 12 to the Consolidated Financial Statements in Item 18 of this report for a further discussion related to the Company's indebtedness and shareholders' equity, and Operating Results above for a discussion of the Company's net loss for the year ended December 31, 2018. See also Consolidated Statements of Shareholders' Equity within the Consolidated Financial Statements in Item 18 of this report.

Liquidity and Cash Flows

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

The Company aims to be a reliable and financially secure partner to its cedants. This means that the Company must maintain sufficient liquidity at all times so that it can support its cedants by settling claims quickly. The Company generates cash flows primarily from its underwriting and investment operations. Management believes that a profitable, well-run reinsurance organization will generate sufficient cash from premium receipts to pay claims, acquisition costs and other expenses in most years. To the extent that underwriting cash flows are not sufficient to cover operating cash outflows in any year, the Company may utilize cash flows generated from investments and may ultimately liquidate assets from its investment portfolio. Management ensures that its liquidity requirements are supported by maintaining a high quality, well balanced and liquid investment grade investment portfolio, and by matching within certain risk tolerance limits the duration and currency of its investments with that of its net reinsurance liabilities.

Management believes that its significant cash flows from operations and high quality liquid investment portfolio will provide sufficient liquidity for the foreseeable future to meet its present requirements. At December 31, 2018 and 2017, the Company held cash and cash equivalents of $878 million and $1,772 million, respectively.

The Company's Consolidated Statements of Cash Flows are included in the Consolidated Financial Statements in Item 18 of this report. Explanations of the cash flows presented in the Consolidated Statements of Cash Flows are as follows:

Net cash provided by operating activities of $447 million in 2018 increased from $243 million in 2017 primarily driven by increases in cash flow from underwriting operations and a $29 million cash settlement received for the commutation referred to in the Operating Results section above. Cash flows from operating activities includes cash flows related to net investment income and underwriting operations. Cash flows from underwriting operations increased primarily due to increased premium collections in line with business growth, partially offset by loss payments, including payments related to large catastrophic and large loss events.

Net cash used in investing activities was $1,261 million in 2018 compared to net cash provided by investing activities of $99 million in 2017. The net cash used in investing activities in 2018 was primarily driven by purchases of fixed maturities and short-term investments and efforts made during 2018 to optimize yield on excess cash. The net cash provided by investing activities in 2017 was a result of redemptions of securities to change investment portfolio mix and to fund financing activities noted below, partially offset by cash used to fund the Aurigen acquisition and to invest in public equity funds.

Net cash used in financing activities was $94 million in 2018 compared to $387 million in 2017, driven by dividends paid to common and preferred shareholders in both years and a redemption of debt acquired in the Aurigen acquisition of $207 million in 2017.

In 2019, the Company expects to continue to generate positive operating cash flows, absent unknown events or unanticipated factors that could result in negative operating cashflows in the future. Specifically, the Company expects cash flows from operating activities to continue to be sufficient to cover claims payments, absent large catastrophic or other large loss activity.

The Company's ability to pay common and preferred shareholder dividends, interest payments on debt, and certain corporate expenses is dependent mainly on cash dividends from PartnerRe Bermuda, PartnerRe Europe, PartnerRe U.S. and PartnerRe Asia (collectively, the reinsurance subsidiaries), which are the Company's most significant subsidiaries. The payment of such dividends by the reinsurance subsidiaries to the Company is limited under Bermuda, Irish and Singapore laws and certain statutes of various U.S. states in which PartnerRe U.S. is licensed to transact business. The restrictions are generally based on net income and/or certain levels of policyholders' earned surplus as determined in accordance with the relevant statutory accounting practices.

The reinsurance subsidiaries' dividend restrictions at December 31, 2018 are described in Note 12 to the Consolidated Financial Statements in Item 18 of this report. In accordance with the terms of the merger agreement between the Company and Exor N.V., subsequent to the preferred share exchange in May 2016, the Company's payment of dividends on common shares declared with respect to any fiscal quarter is restricted to an amount not exceeding 67% of net income per fiscal quarter until December 31, 2020.

The reinsurance subsidiaries of the Company depend upon cash inflows from the collection of premiums as well as investment income and proceeds from the sales and maturities of investments to meet their obligations. Cash outflows are in the form of claims payments, purchases of investments, other expenses, income tax payments, intercompany payments as well as dividend payments to

the respective parent company. See section F. Tabular Disclosures of Contractual Obligations below for further details of obligations of the Company.

Historically, the Company, including through its operating subsidiaries, has generated sufficient cash flows to meet its obligations. Because of the inherent volatility of the business written by the Company, the seasonality in the timing of payments by cedants, the irregular timing of loss payments, the impact of a change in interest rates and credit spreads on the investment income as well as variability in coupon payment dates for fixed income securities, cash flows from operating activities may vary significantly between periods. In the event that paid losses accelerate beyond the ability to fund such payments from operating cash flows, the Company would use its cash and cash equivalents balances available or liquidate a portion of its high quality and liquid investment portfolio. As discussed in the Investments section below, the Company's investments and cash and cash equivalents totaled $16.3 billion at December 31, 2018, of which $13.5 billion were cash and cash equivalents and government issued or investment grade fixed income securities.

Financial strength ratings and senior unsecured debt ratings represent the opinions of rating agencies on the Company's capacity to meet its obligations. In the event of a significant downgrade in ratings, the Company's ability to write business and to access the capital markets could be impacted. Some of the Company's reinsurance treaties contain special funding and termination clauses that would be triggered in the event the Company or one of its subsidiaries is downgraded by one of the major rating agencies to levels specified in the treaties, or the Company's capital is significantly reduced. If such an event were to occur, the Company would be required, in certain instances, to post collateral in the form of letters of credit and/or trust accounts against existing outstanding losses, if any, related to the treaty. In a limited number of instances, the subject treaties could be canceled retroactively or commuted by the cedant.

The Company's current financial strength ratings and outlooks are as follows:

Standard & Poor's	A+
Moody's[(1)]	A1
A.M. Best	A

(1) Applies to Partner Reinsurance Company Ltd. and Partner Reinsurance Company of the U.S.

Credit Agreements

In the normal course of its operations, the Company enters into agreements with financial institutions to obtain unsecured and secured letter of credit facilities. These facilities are used for the issuance of letters of credit. Certain agreements require the letters of credit to be fully secured with cash, government bonds and/or investment grade bonds. The agreements include default covenants, which could require the Company to fully secure the outstanding letters of credit to the extent that the facility is not already fully secured and/or result in the Company not being allowed to issue any new letters of credit. See Note 17 to the Consolidated Financial Statements in Item 18 of this report for further details.

Investments

The Company's total invested assets of $16,383 million and $16,982 million at December 31, 2018 and 2017, respectively, are comprised of total investments, cash and cash equivalents, accrued interest and for 2017 also includes the investment portfolio underlying the funds held–directly managed account (excluding other asset and liabilities within the funds held–directly managed account). The funds held–directly managed account and related guaranteed reserves were settled upon commutation of the related business in 2018 (see Note 5 to the Consolidated Financial Statements in Item 18 of this report for further details).

The components and carrying values of the Company's total investments, and the percentages of total investments, at December 31, 2018 and 2017 were as follows (in millions of U.S. dollars, except percentages):

	December 31, 2018		December 31, 2017	
Fixed maturities	**$ 12,640**	**82%**	$ 12,655	86%
Short-term investments	**493**	**3**	4	—
Equities	**694**	**5**	639	4
Investments in real estate	**73**	**—**	83	1
Other invested assets	**1,489**	**10**	1,385	9
Total investments [(1)]	**$ 15,389**	**100%**	$ 14,766	100%

(1) In addition to the total investments shown in the above table, the Company held cash and cash equivalents of $878 million and $1,772 million at December 31, 2018 and 2017, respectively.

The majority of the Company's investments are carried at fair value with changes in fair value included in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations. Refer to Investment Result above in the Operating results section and Notes 3 and 4 to the Consolidated Financial Statements for further details of the composition of the investments and changes in unrealized gains or losses on investments. See also Note 18 to the Consolidated Financial Statements in Item 18 of this report for details on, and the reduction in, Investments in real estate during the year.

The cost, fair value and credit ratings of the Company's fixed maturities and short-term investments carried at fair value at December 31, 2018 were as follows (in millions of U.S. dollars, except percentages):

			Credit Rating (2)					
December 31, 2018	Cost (1)	Fair Value	AAA	AA	A	BBB	Below investment grade	Unrated
Fixed maturities								
U.S. government and sponsored enterprises	$ 2,333	$ 2,345	$ —	$2,345	$ —	$ —	$ —	$ —
U.S. states, territories and municipalities	115	134	1	12	—	—	—	121
Non-U.S. sovereign government, supranational and government related	2,123	2,159	1,080	768	311	—	—	—
Corporate	5,668	5,612	6	362	2,209	2,942	93	—
Asset-backed securities	57	59	1	—	20	—	38	—
Residential mortgage-backed securities	2,332	2,331	64	2,267	—	—	—	—
Fixed maturities	$12,628	$12,640	$1,152	$5,754	$2,540	$2,942	$ 131	$ 121
Short-term investments	495	493	16	92	112	44	—	229
Total fixed maturities and short-term investments	$13,123	$13,133	$1,168	$5,846	$2,652	$2,986	$ 131	$ 350
% of Total fixed maturities and short-term investments			9%	44%	20%	23%	1%	3%

(1) Cost is amortized cost for fixed maturities and short-term investments.

(2) All references to credit rating reflect Standard & Poor's (or estimated equivalent) ratings. Investment grade reflects a rating of BBB- or above.

At December 31, 2018, the Company did not hold any investments in securities issued by peripheral European Union (EU) sovereign governments (Portugal, Italy, Ireland, Greece and Spain), except for $82 million of Italy and Ireland government bonds with a maturity less than six months at date of purchase.

At December 31, 2018, approximately 99% of the Company's fixed maturity and short-term investments were publicly traded and approximately 96% were rated investment grade (BBB- or higher) by Standard & Poor's (or estimated equivalent). The average credit quality, average yield to maturity and expected average duration of the Company's fixed maturities and short-term investments at December 31, 2018 and 2017 were as follows:

	December 31, 2018	December 31, 2017
Average credit quality	**A**	A
Average yield to maturity	**3.2 %**	2.8 %
Expected average duration	**3.9 years**	4.7 years

The average credit quality of fixed maturities and short-term investments at December 31, 2018 remained unchanged compared to December 31, 2017.

The average yield to maturity on fixed maturities and short-term investments increased by 0.4% primarily due to increases in U.S. and European risk-free interest rates for most of the year and portfolio allocation decisions into higher yielding fixed maturities.

The expected average duration of fixed maturities and short-term investments decreased to 3.9 years at December 31, 2018 from 4.7 years at December 31, 2017 compared to the duration of reinsurance liabilities of approximately 4.8 years. The decrease in expected average duration of fixed maturities and short-term investments reflects a lower duration target on excess fixed income as yield curves continue their flattening trend.

Maturity Distribution

The distribution of fixed maturities and short-term investments at December 31, 2018 by contractual maturity date was as follows (in millions of U.S. dollars):

December 31, 2018	Cost	Fair Value
One year or less	$ 898	$ 898
More than one year through five years	5,820	5,821
More than five years through ten years	3,236	3,203
More than ten years	780	821
Subtotal	$ 10,734	$ 10,743
Mortgage/asset-backed securities	2,389	2,390
Total	$ 13,123	$ 13,133

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

Corporate bonds included in Fixed maturities

Corporate bonds are comprised of obligations of U.S. and foreign corporations. The fair values of corporate bonds issued by U.S. and foreign corporations by economic sector at December 31, 2018 were as follows (in millions of U.S. dollars, except percentages):

December 31, 2018	U.S.	Foreign	Total Fair Value	Percentage to Total Fair Value of Corporate Bonds
Sector				
Financial	$ 886	$ 500	$ 1,386	25%
Consumer, Non-cyclical	860	249	1,109	20
Insurance	452	68	520	9
Energy	388	125	513	9
Industrial	414	79	493	9
Consumer, Cyclical	404	89	493	9
Communications	277	25	302	5
Real estate investment trusts	292	10	302	5
Utilities	121	73	194	4
Basic Materials	130	28	158	3
Technology	120	—	120	2
Longevity and Mortality Bonds	21	—	21	—
Other	—	1	1	—
Total	$ 4,365	$ 1,247	$ 5,612	100%
% of Total	78%	22%	100%	

At December 31, 2018, other than the U.S., no country accounted for more than 10% of the Company's corporate bonds. At December 31, 2018, the ten largest issuers accounted for 20% of the corporate bonds held by the Company (7% of total investments and cash) and no single issuer accounted for more than 4% of total corporate bonds (2% of total investments and cash).

Within the finance sector, 100% of corporate bonds were rated investment grade and 58% were rated A- or better at December 31, 2018.

Asset-backed and Residential Mortgage-backed Securities included in Fixed maturities

Asset-backed securities and residential mortgage-backed securities by U.S. and non-U.S. originations and the related fair value and credit ratings at December 31, 2018 were as follows (in millions of U.S. dollars, except percentages):

	Credit Rating (1)						
December 31, 2018	**GNMA (2)**	**GSEs (3)**	**AAA**	**AA**	**A**	**Below investment grade / Unrated**	**Fair Value**
Asset-backed securities							
U.S.	$ —	$ —	$ 1	$ —	$ 20	$ —	$ 21
Non-U.S.	—	—	—	—	—	38	38
Asset-backed securities	$ —	$ —	$ 1	$ —	$ 20	$ 38	$ 59
Residential mortgage-backed securities							
U.S.	$ 538	$ 1,726	$ 41	$ —	$ —	$ —	$ 2,305
Non-U.S.	—	—	23	3	—	—	26
Residential mortgage-backed securities	$ 538	$ 1,726	$ 64	$ 3	$ —	$ —	$ 2,331
Total	$ 538	$ 1,726	$ 65	$ 3	$ 20	$ 38	$ 2,390
% of Total	22%	72%	3%	—%	1%	2%	100%

(1) *All references to credit rating reflect Standard & Poor's (or estimated equivalent).*
(2) *GNMA represents the Government National Mortgage Association. The GNMA, or Ginnie Mae as it is commonly known, is a wholly-owned U.S. government corporation within the Department of Housing and Urban Development which guarantees mortgage loans of qualifying first-time home buyers and low-income borrowers.*
(3) *GSEs, or government sponsored enterprises, includes securities that carry the implicit backing of the U.S. government and securities issued by U.S. government agencies.*

Residential mortgage-backed securities include U.S. residential mortgage-backed securities, which generally have a low risk of default. The issuers of these securities are U.S. government agencies or GSEs, which set standards on the mortgages before accepting them into the program. Although these U.S. government backed securities do not carry a formal rating, they are generally considered to have a credit quality equivalent to or greater than AA+ corporate issues. They are considered prime mortgages and the major risk is uncertainty of the timing of prepayments.

Short-term Investments

Short-term investments include U.S. and non-U.S. government obligations and U.S. corporate bonds. Short-term investments were $493 million at December 31, 2018, up from $4 million at December 31, 2017 primarily due to new fixed maturity investments with duration to maturity of less than one year, including investments in Japanese government bonds with a fair value of $229 million at December 31, 2018. At December 31, 2018, 54% of short-term investments were rated BBB or higher by Standard & Poor's (or estimated equivalent). The Japanese government short term bonds were unrated, while the remaining short-term investments were investment grade, as noted in the table above.

Equities

During 2018, investment in equities increased from $639 million at December 31, 2017 to $694 million at December 31, 2018, as noted in the table above. The increase in equities included a $36 million new investment in a fund and $12 million in net unrealized gains on two Exor managed public equity funds which represented $563 million, or 81% at December 31, 2018, and $551 million, or 86% at December 31, 2017 of the Company's total Equities. See also Notes 3, 4 and 18 to the Consolidated Financial Statements in Item 18 of this report for further details for Equities.

Investments in Real Estate

Investments in real estate are valued at cost, less any write down for impairment when the changes in circumstances indicate the carrying value may not be recoverable and exceeds its estimated fair value. During 2018, these investments were reduced by $10 million primarily due to a write-down for impairment of $6 million and a foreign currency impact of translating the GBP denominated balance to U.S. dollars of $4 million. See also Notes 2(f) and 18 to the Consolidated Financial Statements in Item 18 of this report for further details.

Other Invested Assets

Other invested assets are comprised of investments in corporate loans, notes and loans receivable and notes securitization, private equities, and derivative instruments accounted for at fair value in addition to certain investments that are accounted for using the equity method of accounting. At December 31, 2018 and 2017, other invested assets totaled $1,489 million and $1,385 million, respectively. The largest investment in other invested assets is an investment in Almacantar of $498 million as at December 31, 2018 and $538 million at December 31, 2017, accounted for under the equity method (see Note 4(f) to the Consolidated Financial Statements in Item 18 of this report for further details). Other invested assets also include a portfolio of third-party managed privately issued corporate loans carried at fair value of $402 million at December 31, 2018, which increased from $205 million at December 31, 2017, and private equities (mainly third party private equity funds) with a fair value of $373 million at December 31, 2018, which increased from $332 million at December 31, 2017. See Notes 3, 4 and 6 to the Consolidated Financial Statements in Item 18 of this report for further details.

Funds Held by Reinsured Companies (Cedants)

The Company writes certain business on a funds held basis. Under funds held contractual arrangements, the cedant retains the net funds that would have otherwise been remitted to the Company and credits the net fund balance with investment income. The Company does not legally own or directly control the investments underlying its funds held assets and only has recourse to the cedant for the receivable balances and no claim to the underlying securities that support the balances. Decisions as to purchases and sales of assets underlying the funds held balances are made by the cedant; in some circumstances, investment guidelines regarding the minimum credit quality of the underlying assets may be agreed upon between the cedant and the Company as part of the reinsurance agreement, or the Company may participate in an investment oversight committee regarding the investment of the net funds, but investment decisions are not otherwise influenced by the Company.

At December 31, 2018 and 2017, the Company recorded $830 million and $801 million, respectively, of funds held assets (excluding the funds held-directly managed account in 2017). The majority of the funds held balance relates to contracts that earned investment income based upon a predetermined interest rate, either fixed contractually at the inception of the contract or based upon a recognized market index (e.g., LIBOR). Under these contractual arrangements, there are no specific assets linked to the funds held assets, and the Company is only exposed to the credit risk of the cedant.

Non-life and Life and Health Reserves

See Notes 2(b) and 8 to the Consolidated Financial Statements in Item 18 of this report for details of the Company's loss reserves, including disclosures required by the SEC Industry Guide 4: Disclosures concerning unpaid claims and claim adjustment expenses of property-casualty insurance underwriters.

Non-life Reserves

Loss reserves represent estimates of amounts an insurer or reinsurer ultimately expects to pay in the future on claims incurred at a given time, based on facts and circumstances known at the time that the loss reserves are established. It is possible that the total future payments may exceed, or be less than, such estimates. The estimates are not precise in that, among other things, they are based on predictions of future developments and estimates of future trends in claim severity, frequency and other variable factors such as inflation. During the loss settlement period, it often becomes necessary to refine and adjust the estimates of liability on a claim either upward or downward. Despite such adjustments, the ultimate future liability may exceed or be less than the revised estimates.

As part of the reserving process, insurers and reinsurers review historical data and anticipate the impact of various factors such as legislative enactments and judicial decisions that may affect potential losses from casualty claims, changes in social and political attitudes that may increase exposure to losses, mortality and morbidity trends and trends in general economic conditions. This process assumes that past experience, adjusted for the effects of current developments, is an appropriate basis for anticipating future events.

The Company's gross reserves by segment and the total ceded and net non-life reserves at December 31, 2018 and 2017 were as follows (in millions of U.S. dollars):

	December 31, 2018	December 31, 2017[(1)]
P&C segment	**$ 7,159**	$ 7,333
Specialty segment	**2,736**	2,769
Gross non-life reserves	**$ 9,895**	$ 10,102
Ceded non-life reserves	**(851)**	(720)
Net non-life reserves	**$ 9,044**	$ 9,382

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 comparatives have been reclassified to conform to current presentation.

Net non-life reserves decreased from December 31, 2017 to December 31, 2018 primarily due to the commutation of the remaining reserves under the Reserve Agreement with Colisée Re, as well as the impact of foreign exchange. The changes in these reserves and the reconciliation of the gross and net total non-life reserves for the years ended December 31, 2018, 2017 and 2016 are presented and discussed further in Note 8(a) to the Consolidated Financial Statements in Item 18 of this report.

The net favorable prior year loss development on prior accident years was $249 million for the year ended December 31, 2018, primarily resulting from favorable loss emergence across most lines of business within the P&C and Specialty segments. See Note 8(a) to the Consolidated Financial Statements in Item 18 for further details related to the 2018 net favorable loss development compared to 2017 and 2016.

See also Note 8(a) to the Consolidated Financial Statements in Item 18 of this report for details of the net incurred and paid losses and loss expenses development by accident year, the total of incurred but not reported liabilities plus expected development on reported claims, and the net liability as at December 31, 2018 for total Non-life and each of the P&C and Specialty segments.

The gross reserves reported by cedants (case reserves), those estimated by the Company (ACRs and IBNR) and the total gross, ceded and net loss reserves recorded at December 31, 2018 by reserving line for the Company's Non-life operations were as follows (in millions of U.S. dollars):

Reserving lines	Case reserves	ACRs	IBNR reserves	Total gross loss reserves recorded	Ceded loss reserves	Net non-life reserves recorded
P&C	$ 2,988	$ 151	$ 4,020	$ 7,159	$ (608)	$ 6,551
Specialty	1,229	24	1,483	2,736	(243)	2,493
Total Non-life reserves	$ 4,217	$ 175	$ 5,503	$ 9,895	$ (851)	$ 9,044

The net non-life loss reserves represent the Company's best estimate of future losses and loss expense amounts based on the information available at December 31, 2018. Loss reserves rely upon estimates involving actuarial and statistical projections at a given time that reflect the Company's expectations of the costs of the ultimate settlement and administration of claims. Estimates of ultimate liabilities are contingent on many future events and the eventual outcome of these events may be different from the assumptions underlying the reserve estimates. In the event that the business environment and social trends diverge from historical trends, the Company may have to adjust its loss reserves to amounts falling significantly outside its current estimate. These estimates are regularly reviewed and the ultimate liability may be in excess of, or less than, the amounts provided, for which any adjustments will be reflected in the period in which the need for an adjustment is determined.

The Company's best estimates are point estimates within a reasonable range of actuarial liability estimates. These ranges are developed using stochastic simulations and other techniques and provide an indication as to the degree of variability of the loss reserves. The Company interprets the ranges produced by these techniques as confidence intervals around the point estimates for each Non-life sub-segment. However, due to the inherent volatility in the business written by the Company, there can be no assurance that the final settlement of the loss reserves will fall within these ranges.

The point estimates related to net loss reserves recorded by the Company and the range of actuarial estimates at December 31, 2018 for P&C and Specialty segments were as follows (in millions of U.S. dollars):

	Recorded Point Estimate	High	Low
P&C	$ 6,551	$ 7,310	$ 5,397
Specialty	$ 2,493	$ 2,748	$ 2,146
Total Non-life reserves	$ 9,044		

It is not appropriate to add together the ranges of each segment in an effort to determine a high and low range around the Company's total carried loss reserves.

Of the Company's $9,044 million of net loss reserves related to the P&C and Specialty business at December 31, 2018, a portion of this is considered to have a long reporting tail, including the Company's exposure to asbestos and environmental claims. See Note 8 to the Consolidated Financial Statements in Item 18 of this report for further details.

Non-life Reserving Methodology

Because a significant amount of time can elapse between the assumption of risk, occurrence of a loss event, the reporting of the event to an insurance company (the primary company or the cedant), the subsequent reporting to the reinsurance company (the reinsurer) and the ultimate payment of the claim on the loss event by the reinsurer, the Company's non-life reserves (loss reserves) are based largely upon estimates.

The Company categorizes loss reserves into three types of reserves: reported outstanding loss reserves (case reserves), additional case reserves (ACRs) and amounts for losses incurred but not yet reported to the Company (IBNR). The Company updates its estimates for each of the aforementioned categories on a quarterly basis using information received from its cedants.

Case reserves represent unpaid losses reported by the Company's cedants and recorded by the Company.

ACRs are established for particular circumstances where, on the basis of individual loss reports, the Company estimates that the particular loss or collection of losses covered by a treaty may be greater than those advised by the cedant.

IBNR reserves represent a provision for claims that have been incurred but not yet reported to the Company, as well as future loss development on losses already reported, in excess of the case reserves and ACRs. Unlike case reserves and ACRs, IBNR reserves are often calculated at an aggregated level and cannot usually be directly identified as reserves for a particular loss or treaty.

The Company also estimates the future unallocated loss adjustment expenses (ULAE) associated with the loss reserves and these form part of the Company's loss adjustment expense reserves.

The amount of time that elapses before a claim is reported to the cedant and then subsequently reported to the reinsurer is commonly referred to in the industry as the reporting tail. Lines of business for which claims are reported quickly are commonly referred to as short-tail lines; and lines of business for which a longer period of time elapses before claims are reported to the reinsurer are commonly referred to as long-tail lines. In general, for reinsurance, the time lags are longer than for primary business due to the delay that occurs between the cedant becoming aware of a loss and reporting the information to its reinsurer(s). The delay varies by reinsurance market (country of cedant), type of treaty, whether losses are first paid by the cedant and the size of the loss. The delay could vary from a few weeks to a year or sometimes longer. For all lines, the Company's objective is to estimate ultimate losses and loss expenses. Total loss reserves are then calculated by subtracting losses paid. Similarly, IBNR reserves are calculated by subtraction of case reserves and ACRs from total loss reserves.

The Company analyzes its ultimate losses and loss expenses after consideration of the loss experience of various reserving cells. The Company assigns treaties to reserving cells and allocates losses from the treaty to the reserving cell. The reserving cells are selected in order to ensure that the underlying treaties have homogeneous loss development characteristics (e.g., reporting tail) but are large enough to make estimation of trends credible. The selection of reserving cells is reviewed annually and changes over time as the business of the Company evolves. For each reserving cell, the Company tabulates losses in reserving triangles that show the total reported or paid claims at each financial year end by underwriting year cohort. An underwriting year is the year during which the reinsurance treaty was entered into as opposed to the year in which the loss occurred (accident year), or the calendar year for which financial results are reported. For each reserving cell, the Company's estimates of loss reserves are reached after a review of the results of several commonly accepted actuarial projection methodologies. In selecting its best estimate, the Company considers the appropriateness of each methodology to the individual circumstances of the reserving cell and underwriting year for which the projection is made. The methodologies that the Company employs include, but may not be limited to, paid and reported Chain Ladder methods, Expected Loss Ratio method, paid and reported Bornhuetter-Ferguson (B-F) methods, and paid and reported Benktander methods. In addition, the Company uses other methodologies to estimate liabilities for specific types of claims. For example, reserves established for the catastrophe line are primarily a function of the presence or absence of catastrophic events during the year, and the complexity and uncertainty associated with estimating unpaid losses from these large disclosed events. Internal and vendor catastrophe models are typically used in the estimation of loss and loss expenses at the early stages of catastrophe losses before loss information is reported to the reinsurer. In addition, reserves are also established in consideration of mid-sized and attritional loss events that occur during a year. In the case of asbestos and environmental claims, the Company has established reserves for future losses and allocated loss expenses based on the results of periodic actuarial studies, which consider the underlying exposures of the Company's cedants.

The reserve methodologies employed by the Company are dependent on data that the Company collects. This data consists primarily of loss amounts and loss payments reported by the Company's cedants, and premiums written and earned reported by

cedants or estimated by the Company. The actuarial methods used by the Company to project loss reserves that it will pay in the future do not generally include methodologies that are dependent on claim counts reported, claim counts settled or claim counts open as, due to the nature of the Company's business, this information is not routinely provided by cedants for every treaty.

For a description of the reserving methods commonly employed by the Company see Note 8 to the Consolidated Financial Statements in Item 18 of this report. Each of these methods have certain advantages and disadvantages which the Company takes into consideration when determining which methods to use and method weights.

The main strengths of the Chain Ladder (CL) Development method are that it is reactive to loss emergence (payments) and that it makes full use of historical experience on claim emergence (payments). For homogeneous low volatility lines, under stable economic conditions, the method can often produce good estimates of ultimate liabilities and reserves. However, the method has weaknesses when the underlying assumption of stable patterns is not true. This may be the consequence of changes in the mix of business, changes in claim inflation trends, changes in claim reporting practices or the presence of large claims, among other things. Furthermore, the method tends to produce volatile estimates of ultimate liabilities in situations where there is volatility in reported (paid) patterns. In particular, when the expected percentage reported (paid) is low, small deviations between actual and expected claims can lead to very volatile estimates of ultimate liabilities and reserves. Consequently, this method is often unsuitable for projections at early development stages of an underwriting year. Finally, the method fails to incorporate any information regarding market conditions, pricing, etc., which could improve the estimate of liabilities and reserves. It therefore tends not to perform very well in situations where there are rapidly changing market conditions.

The Expected Loss Ratio method is insensitive to actual reported or paid losses therefore it is usually inappropriate at later stages of development, but can often be useful at the early stages of development when very few losses have been reported or paid, and the principal sources of information available to the Company consist of information obtained during pricing and qualitative information supplied by the cedant.

The Bornhuetter-Ferguson (B-F) methods (Reported or Paid) tend to provide less volatile indications at early stages of development and reflect changes in the external environment, however, this method can be slow to react to emerging loss development (payment). In particular, to the extent that the a priori loss ratios prove to be inaccurate (and are not revised), the B-F methods will produce loss estimates that take longer to converge with the final settlement value of loss liabilities.

Benktander (B-K) Methods (Reported or Paid), which can be viewed as a blend between the CL Development and the B-F methods, still exhibits the same advantages and disadvantages as the B-F method, but the mechanics of the calculation imply that it is more reactive to loss emergence (payment) than the B-F method.

The reserving methods used by the Company are dependent on a number of key parameter assumptions. The principal parameter assumptions underlying the methods used by the Company are:

- the loss development factors used to form an expectation of the evolution of reported and paid claims for several years following the inception of the underwriting year. These are often derived by examining the Company's data after due consideration of the underlying factors listed below. In some cases, where the Company lacks sufficient volume to have statistical credibility, external benchmarks are used to supplement the Company's data;
- the tail factors used to reflect development of paid and reported losses after several years have elapsed since the inception of the underwriting year;
- the *a priori* loss ratios used as inputs in the B-F methods; and
- the selected loss ratios used as inputs in the Expected Loss Ratio method.

As an example of the sensitivity of the Company's reserves to reserving parameter assumptions by reserving line, the effect on the Company's reserves of higher/lower *a priori* loss ratio selections, higher/lower loss development factors and higher/lower tail factors based on amounts recorded at December 31, 2018 was as follows (in millions of U.S. dollars):

Reserving lines selected assumptions	P&C	Specialty
A Priori Loss Ratio +5%	244	119
Loss Development Factors (up to 10 years) 6 months longer	498	304
Tail Loss Development Factors higher by 5%[1]	294	136
A Priori Loss Ratio -5%	(245)	(89)
Loss Development Factors (up to 10 years) 6 months faster	(255)	(92)
Tail Loss Development Factors lower by 5%[1]	(248)	(63)

(1) Tail factors are defined as aggregate development factors after 10 years from the inception of an underwriting year.

The Company believes that the illustrated sensitivities to the reserving parameter assumptions are indicative of the potential variability inherent in the estimation process of those parameters. Some reserving lines show little sensitivity to *a priori* loss ratio, loss development factor or tail factor as the Company may use reserving methods such as the Expected Loss Ratio method in several of its reserving cells within those lines. It is not appropriate to sum the total impact for a specific factor or the total impact for a specific reserving line as the lines of business are not perfectly correlated.

The validity of all parameter assumptions used in the reserving process is reaffirmed on a quarterly basis. Reaffirmation of the parameter assumptions means that the actuaries determine that the parameter assumptions continue to form a sound basis for projection of future liabilities. Parameter assumptions used in projecting future liabilities are themselves estimates based on historical information. As new information becomes available (e.g., additional losses reported), the Company's actuaries determine whether a revised estimate of the parameter assumptions that reflects all available information is consistent with the previous parameter assumptions employed. In general, to the extent that the revised estimate of the parameter assumptions are within a close range of the original assumptions, the Company determines that the parameter assumptions employed continue to form an appropriate basis for projections and continue to use the original assumptions in its models. In this case, any differences could be attributed to the imprecise nature of the parameter estimation process. However, to the extent that the deviations between the two sets of estimates are not within a close range of the original assumptions, the Company reacts by adopting the revised assumptions as a basis for its reserve models. Notwithstanding the above, even where the Company has experienced no material deviations from its original assumptions during any quarter, the Company will generally revise the reserving parameter assumptions at least once a year to reflect all accumulated available information.

In addition to examining the data, the selection of the parameter assumptions is dependent on several underlying factors. The Company's actuaries review these underlying factors and determine the extent to which these are likely to be stable over the time frame during which losses are projected, and the extent to which these factors are consistent with the Company's data. If these factors are determined to be stable and consistent with the data, the estimation of the reserving parameter assumptions are mainly carried out using actuarial and statistical techniques applied to the Company's data. To the extent that the actuaries determine that they cannot continue to rely on the stability of these factors, the statistical estimates of parameter assumptions are modified to reflect the direction of the change. The main underlying factors upon which the estimates of reserving parameters are predicated are:

- the cedant's business practices will proceed as in the past with no material changes either in submission of accounts or cash flows;
- any internal delays in processing accounts received by the cedant are not materially different from that experienced historically, and hence the implicit reserving allowance made in loss reserves through the methods continues to be appropriate;
- case reserve reporting practices, particularly the methodologies used to establish and report case reserves, are unchanged from historical practices;
- the Company's internal claim practices, particularly the level and extent of use of ACRs, are unchanged;
- historical levels of claim inflation can be projected into the future and will have no material effect on either the acceleration or deceleration of claim reporting and payment patterns;
- the selection of reserving cells results in homogeneous and credible future expectations for all business in the cell and any changes in underlying treaty terms are either reflected in cell selection or explicitly allowed in the selection of trends;
- in cases where benchmarks are used, they are derived from the experience of similar business; and

- the Company can form a credible initial expectation of the ultimate loss ratio of recent underwriting years through a review of pricing information, supplemented by qualitative information on market events.

The Company's best estimate of total loss reserves is typically in excess of the midpoint of the actuarial ultimate liability estimate. The Company believes that there is potentially significant risk in estimating loss reserves for long-tail lines of business and for immature underwriting years that may not be adequately captured through traditional actuarial projection methodologies as these methodologies usually rely heavily on projections of prior year trends into the future. In selecting its best estimate of future liabilities, the Company considers both the results of actuarial point estimates of loss reserves as well as the potential variability of these estimates as captured by a reasonable range of actuarial liability estimates. The selected best estimates of reserves are always within the reasonable range of estimates indicated by the Company's actuaries. In determining the appropriate best estimate, the Company reviews (i) the position of overall reserves within the actuarial reserve range, (ii) the result of bottom up analysis by underwriting year reflecting the impact of parameter uncertainty in actuarial calculations, and (iii) specific qualitative information that may have an effect on future claims but which may not have been adequately reflected in actuarial estimates, such as potential for outstanding litigation, claims practices of cedants, etc.

During 2018, 2017 and 2016, the Company reviewed its estimate for prior year losses for the P&C and Specialty segments and, in light of developing data, adjusted its ultimate loss ratios for prior accident years. The net prior year favorable loss development for each segment for the years ended December 31, 2018, 2017 and 2016 is presented in Note 8 to the Consolidated Financial Statements in Item 18 of this report.

Actual losses paid and reported compared with the Company's expectations, and the changes of the Company's reserving parameter assumptions in response to the emerging development during the year ended December 31, 2018 were as follows:

- *P&C and Specialty:* Aggregate losses reported in 2018 for both P&C and Specialty segments were better than Company's expectations as losses for most underwriting years continue to emerge below expectations. The better than expected loss emergence within the P&C segment was partially offset by adverse activity in U.S. casualty and U.S. multiline business. The better than expected loss emergence within the Specialty segment was predominantly driven by credit & surety, energy offshore, energy onshore, marine, property and agriculture exposures. The Company reflected this experience by reducing the selected loss ratios for these lines of business.

Life and Health Reserves

Life and Health reserves relate to the Company's Life and Health segment, which predominantly includes:

- mortality and morbidity business, covering death and disability risks (with various riders) primarily written in Continental Europe, TCI primarily written in the U.K. and Ireland, and GMDB business primarily written in Continental Europe. Following the acquisition of Aurigen, the Company also writes mortality business originating in Canada and the United States; and
- reinsurance of longevity, subdivided into standard and non-standard annuities primarily written in the U.K.

The Company categorizes life reserves into three types of reserves: case reserves, IBNR and reserves for future policy benefits. Case reserves represent unpaid losses reported by the Company's cedants and recorded by the Company. IBNR reserves represent a provision for claims that have been incurred but not yet reported to the Company, as well as future loss development on losses already reported, in excess of the case reserves. Reserves for future policy benefits relate to future events occurring on policies that are expected to be in force over an extended period of time. Reserves for future policy benefits represent an estimate of the amount which, together with estimated future premiums and investment income, will be sufficient to pay claims and future benefits, expenses and costs on in-force policies, as such claims and expenses are incurred.

Reserves for future policy benefits are calculated as the present value of future expected claims, benefits and costs to be paid, reduced by the present value of future expected premiums. Such liabilities are established based on methods and underlying assumptions in accordance with U.S. GAAP and applicable actuarial standards. Principal assumptions used in the establishment of reserves for future policy benefits have been determined based upon information reported by ceding companies, supplemented by the Company's actuarial estimates of mortality, critical illness, persistency and future investment income, with appropriate provision to reflect uncertainty. Case reserves, IBNR reserves and reserves for future policy benefits are generally calculated at the treaty level. The Company updates its estimates for each of the aforementioned categories on a periodic basis using information received from its cedants.

The Company's gross and net reserves for the Life and Health segment at December 31, 2018 and 2017 were as follows (in millions of U.S. dollars):

	December 31, 2018	December 31, 2017[1]
Case reserves	**$ 325**	$ 342
IBNR reserves	**775**	650
Reserves for future policy benefits	**1,098**	1,107
Total gross Life and health reserves	**$ 2,198**	$ 2,099
Ceded reserves	**(12)**	(9)
Net Life and health reserves	**$ 2,186**	$ 2,090

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 comparatives have been reclassified to conform to current presentation.

The increase in the Life and Health reserves in 2018 was primarily due to growth in the business. The net incurred losses for the Company's life reserves will generally exceed net paid losses in any one given year due to the long-term nature of the liabilities and the growth in the book of business.

Life and Health Reserving Methodology

The Company's reserving methodologies are as follows:

- *Mortality:* The reserves for the short-term mortality/morbidity business consist of case reserves and IBNR, calculated at the treaty level based upon cedant information. The Company's reserving methodology includes a review of actual experience against expected experience and the use of the ELR method described above for Non-life business.

  The reserves for the long-term traditional mortality and TCI reinsurance are established based upon accepted actuarial valuation methods which require us to make certain assumptions regarding future claims and policy benefits and includes a provision for adverse deviation. The provision for adverse deviation contemplates reasonable deviations from the best estimate assumptions for the key risk elements relevant to the product being evaluated, including mortality, disability, critical illness, expenses, and discount rates. The assumptions are locked in at contract inception and modified if we deem the reserves to be inadequate. The Company's actuaries annually review the current reserving assumptions in consideration of evolving experience and the actuarial indications for assumptions relating to future policy benefits, including mortality, disability, critical illness, persistency and future investment income. If the reserves using current assumptions are greater than the existing reserves, the initial assumptions may be revised, resulting in an increase to the reserves. The reserves for the GMDB reinsurance business are established similar to provisions for universal life contracts. Key actuarial assumptions for this business are mortality, lapses, interest rates, expected returns on cash and bonds and stock market performance. For the latter parameter, a stochastic option pricing approach is used and the benefits used in calculating the liabilities are based on the average benefits payable over a range of scenarios. The assumptions of investment performance and volatility are consistent with expected future experience of the respective underlying funds available for policyholder investment options. Recorded reserves for GMDB reflect management's best estimate based upon actuarial indications.

- *Longevity:* Reserves for the annuity portfolio of reinsurance contracts within the longevity book are established. Some of these contracts subject the Company to risks arising from policyholder mortality over a period that extends beyond the periods in which premiums are collected. The Reserves for future policy benefits follow the reserving methodology discussed above for long-term traditional mortality.

  For standard annuities, the main risk is a higher than expected increase in future life span in the medium to long term. Non-standard annuities are annuities sold to people with aggravated health conditions and are usually medically underwritten on an individual basis and the main risk is the inadequate assessment of the future life span of the insured.

As an example of the sensitivity of the Company's best estimate reserves for life and health contracts to reserving parameter assumptions by reserving line, the effect of different assumption selections based on the gross reserves recorded at December 31, 2018 was as follows (in millions of U.S. dollars):

Reserving lines	Factors	Change	Increase to total net Life and Health reserves
Longevity			
Standard and non-standard annuities	Mortality improvements per annum	+1%	$ 409
Mortality			
Long-term and TCI	Mortality	+10%	$ 532
GMDB	Stock market performance	-10%	$ 5

It is not appropriate to sum the total impact for a specific reserving line or the total impact for a specific factor because the reinsurance portfolios are not perfectly correlated.

Refer to Note 8 to the Consolidated Financial Statements in Item 18 of this report for disclosures on life and health reserves.

Reinsurance Recoverable on Paid and Unpaid Losses

The Company has exposure to credit risk related to reinsurance recoverable on paid and unpaid losses. See Note 9 to the Consolidated Financial Statements in Item 18 and Quantitative and Qualitative Disclosures about Market Risk—Counterparty Credit Risk in Item 11 of this report for a discussion of the Company's risk related to reinsurance recoverable on paid and unpaid losses and the Company's process to evaluate the financial condition of its reinsurers.

At December 31, 2018 and 2017, the Company recorded $940 million and $829 million, respectively, of reinsurance recoverable on paid and unpaid losses in its Consolidated Balance Sheets, of which $863 million and $729 million, respectively, represents reinsurance recoverable on total non-life and life and health reserves. The increase in the reinsurance recoverable during 2018 was primarily due to large catastrophic losses incurred.

At December 31, 2018, the distribution of the Company's reinsurance recoverables on total non-life and life and health reserves categorized by the reinsurer's Standard & Poor's rating was as follows:

Rating Category	% of total reinsurance recoverable on paid and unpaid losses
AA- or better	6%
A- to A+	27%
Less than A-	—%
Unrated	67%
Total	100%

At December 31, 2018, 33% of the Company's reinsurance recoverable on total non-life and life and health reserves were due from reinsurers with A- or better rating from Standard & Poor's, compared to 37% at December 31, 2017. The remaining amounts included in Unrated above are all collateralized.

Currency

The Company's reporting currency is the U.S. dollar. The Company has exposure to foreign currency risk due to both its ownership of its Irish, French and Canadian subsidiaries and branches, whose functional currencies are the Euro and the Canadian dollar, and to underwriting reinsurance exposures, collecting premiums and paying claims and other expenses in currencies other than the U.S. dollar and holding certain net assets in such currencies.

At December 31, 2018, the value of the U.S. dollar strengthened against most major currencies compared to December 31, 2017, which resulted in a decrease in the U.S. dollar value of the assets and liabilities denominated in non-U.S. dollar currencies. See Operating Results above for a discussion of the impact of foreign exchange and net foreign exchange gains and losses during the years ended December 31, 2018, 2017 and 2016.

The currency translation adjustment account is a component of accumulated other comprehensive income or loss in shareholders' equity. This account decreased by $75 million during the year ended December 31, 2018 compared to a decrease of $15 million and an increase of $12 million during the years ended December 31, 2017 and 2016, respectively, due to the translation

of the financial statements of the Company's subsidiaries and branches, whose functional currencies are the Canadian dollar and the Euro, into U.S. dollars.

The reconciliation of the currency translation adjustment for the years ended December 31, 2018, 2017 and 2016 was as follows (in millions of U.S. dollars):

	2018	2017	2016
Currency translation adjustment at beginning of year	**$ (57)**	$ (42)	$ (54)
Change in foreign currency translation adjustment included in accumulated other comprehensive loss, inclusive of the impact of designated net investment hedge	**(75)**	(15)	12
Currency translation adjustment at end of year	**$ (132)**	$ (57)	$ (42)

The Company's gross and net exposure in its Consolidated Balance Sheet at December 31, 2018 to foreign currency as well as the associated foreign currency derivatives the Company has entered into to manage this exposure is presented in Quantitative and Qualitative Disclosures about Market Risk in Item 11 of this report.

See Quantitative and Qualitative Disclosures about Market Risk—Foreign Currency Risk in Item 11 for a discussion of the Company's risk related to changes in foreign currency movements, and Note 2(m) to the Consolidated Financial Statements in Item 18 of this report for a discussion of currencies to which the Company is exposed.

Effects of Inflation

The effects of inflation are considered implicitly in pricing and estimating non-life reserves. The actual effects of inflation on the results of operations of the Company cannot be accurately known until claims are ultimately settled.

Critical Accounting Policies and Estimates

The Company's Consolidated Financial Statements have been prepared in accordance with U.S. GAAP. The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The following are the Company's accounting estimates that management believes are the most critical to its operations and require the most difficult, subjective and complex judgment. If actual events differ significantly from the underlying assumptions and estimates used by management, there could be material adjustments to prior estimates that could potentially adversely affect the Company's results of operations, financial condition and liquidity. These critical accounting policies and estimates should be read in conjunction with Note 2 to the Consolidated Financial Statements in Item 18 of this report.

Non-life and Life and Health Reserves

The Company's Non-life and Life and Health reserves are significant accounting estimates. These estimates are continually reviewed with any adjustments reflected in the periods in which they are determined, which may affect the Company's results in future periods. See Liquidity and Capital Resources—Reserves above and Notes 2(b) and 8 to the Consolidated Financial Statements in Item 18 of this report for further details.

Premium Estimates and Recoverability of Deferred Acquisition Costs

The Company provides proportional and non-proportional reinsurance coverage to cedants (insurance companies). In most cases, cedants seek protection for business that they have not yet written at the time they enter into reinsurance agreements and thus have to estimate the volume of premiums they will cede to the Company. Reporting delays are inherent in the reinsurance industry and vary in length by reinsurance market (country of cedant) and type of treaty. As delays can vary from a few weeks to a year or sometimes longer, the Company produces accounting estimates to report premiums and acquisition costs until it receives the cedants' actual premium reported data.

Under proportional treaties, which represented 75% of the Company's total gross premiums written for the year ended December 31, 2018, the Company shares proportionally in both the premiums and losses of the cedant and pays the cedant a commission to cover the cedant's acquisition costs. Under this type of treaty, the Company's ultimate premiums written and earned and acquisition costs are not known at the inception of the treaty. As such, reported premiums written and earned and acquisition costs on proportional treaties are generally based upon reports received from cedants and brokers, supplemented by the Company's own estimates of premiums written and acquisition costs for which ceding company reports have not been received. Premium and acquisition cost estimates are determined at the individual treaty level. The determination of premium estimates requires a review of the Company's experience with cedants, familiarity with each market, an understanding of the characteristics of each line of business and management's assessment of the impact of various other factors on the volume of business written and ceded to the Company. Premium and acquisition cost estimates are updated as new information is received from the cedants and differences

between such estimates and actual amounts are recorded in the period in which estimates are changed or the actual amounts are determined.

Under non-proportional treaties, which represented the remaining 25% of the Company's total gross premiums written for the year ended December 31, 2018, the Company is typically exposed to loss events in excess of a predetermined dollar amount or loss ratio and receives a fixed or minimum premium, which is subject to upward adjustment depending on the premium volume written by the cedant. In addition, many of the non-proportional treaties include reinstatement premium provisions. Reinstatement premiums are recognized as written and earned at the time a loss event occurs, where coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. The accrual of reinstatement premiums is based on management's estimate of losses and loss expenses associated with the loss event.

The magnitude and impact of changes in premium estimates differs for proportional and non-proportional treaties. Although proportional treaties may be subject to larger changes in premium estimates compared to non-proportional treaties, as the Company generally receives cedant statements in arrears and must estimate all premiums for periods ranging from one month to more than one year (depending on the frequency of cedant statements), the impact is mitigated by changes in the cedant's related reported acquisition costs and losses. The impact of the change in estimate on premiums earned and net income varies depending on when the change becomes known during the risk period and the underlying profitability of the treaty. Non-proportional treaties generally include a fixed minimum premium and an adjustment premium. While the fixed minimum premiums require no estimation, adjustment premiums are estimated and could be subject to changes in estimates. Changes in prior year premium estimates reported by cedants for non-life business, impacting net premiums written and earned, and the corresponding adjustments to acquisition costs and losses and loss expenses, did not have a material impact on the Company's consolidated net income.

The recoverability of deferred acquisition costs is dependent upon the future profitability of the related business and the testing of recoverability to assess valuation is performed periodically together with a reserve adequacy test based on the latest best estimate assumptions by line of business.

See Notes 2(a), 2(c), 9(b) and 19 to the Consolidated Financial Statements in Item 18 of this report and Operating Results—Results by Segment in Item 5 of this report for accounting policies or further details regarding premiums and recoverability of deferred acquisition costs.

Recoverability of Deferred Tax Assets

Under U.S. GAAP, a deferred tax asset or liability is to be recognized for the estimated future tax effects attributable to temporary differences and carryforwards. U.S. GAAP also establishes procedures to assess whether a valuation allowance should be established for deferred tax assets. All available evidence, both positive and negative, is considered to determine whether, based on the weight of that evidence, a valuation allowance is needed for some portion or all of a deferred tax asset. Management must use its judgment in considering the relative impact of positive and negative evidence.

The Company has projected future taxable income in the tax jurisdictions in which the deferred tax assets arise based on management's projections of premium and investment income, capital gains and losses, and technical and expense ratios. Based on these projections and an analysis of the ability to utilize loss and foreign tax credits carryforwards at the taxable entity level, management evaluates the need for a valuation allowance.

The Company has estimated the future tax effects attributed to temporary differences and has a deferred tax asset at December 31, 2018 of $123 million, after a valuation allowance of $189 million. The most significant component of the deferred tax asset (after valuation allowance) relates to loss reserve discounting for tax purposes.

In accordance with U.S. GAAP, the Company has assumed that the future reversal of deferred tax liabilities will result in an increase in taxes payable in future years. Underlying this assumption is an expectation that the Company will continue to be subject to taxation in the various tax jurisdictions and that the Company will continue to generate taxable revenues in excess of deductions.

See Notes 2(l) and 13 to the Consolidated Financial Statements in Item 18 of this report for further details.

Valuation of Investments Measured Using Significant Unobservable Inputs

As more fully described in Note 3 to the Consolidated Financial Statements in Item 18 of this report, the Company measures the fair value of its financial instruments according to a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value by maximizing the use of observable inputs and minimizing the use of unobservable inputs by requiring that the most observable inputs be used when available. Unobservable inputs are inputs that reflect the Company's assumptions about what market participants would use in pricing the asset or liability based on the best information available in the circumstances. Level 3 financial instruments have the least use of observable market inputs used to determine fair value. As at December 31, 2018 the Company classified $1,587 million of investments as Level 3 as a result of significant unobservable inputs used to determine fair value. See Note 3 to the Consolidated Financial Statements in Item 18 of this report for a breakdown of these investments by fair

value level as well as more detail on the valuation techniques, methods and assumptions that were used by the Company to estimate the fair value of its fixed maturities, short-term investments, equities, and other invested assets (including derivatives). See Notes 2 (n) and 6 to the Consolidated Financial Statements in Item 18 of this report for more discussion of the Company's use of derivative financial instruments.

See also Quantitative and Qualitative disclosures About Market Risk in Item 11 of this report for a further discussion of interest rate and credit spread risk and a sensitivity analysis of interest rate and credit spread variances on the valuation of the Company's investments and funds withheld directly managed.

Valuation of Goodwill and Intangible Assets

Goodwill represents the excess of the purchase price over the fair value of the net assets acquired in business combinations entered into prior to 2018 (PartnerRe SA, Winterthur Re, Paris Re and Presidio). The Company assesses the appropriateness of its valuation of goodwill on at least an annual basis or more frequently if events or changes in circumstances indicate that the carrying amount may not be recoverable. If, as a result of the assessment, the Company determines that the value of its goodwill is impaired, goodwill will be written down in the period in which the determination is made. In making an assessment of the value of its goodwill, the Company uses both market based and non-market based valuations. The fair value of the reporting units is determined based on the price-to-earnings multiples, book value multiples, and present value of estimated cash flows methods. Significant changes in the data underlying these assumptions could result in an assessment of impairment of the Company's goodwill asset. In addition, if the current economic environment and/or the Company's financial performance were to deteriorate significantly, this could lead to an impairment of goodwill, the write-off of which would be recorded against net income in the period such deterioration occurred.

Based upon the Company's assessment, there was no impairment of the Company's goodwill asset of $456 million at December 31, 2018.

Intangible assets represent the fair value adjustments related to unpaid losses and loss expenses and the fair values of renewal rights, customer relationships and U.S. licenses arising from the acquisitions referred to above in addition to life value of business acquired (life VOBA) and insurance licenses acquired related to the Aurigen acquisition. Definite-lived intangible assets are amortized over their useful lives while indefinite-lived intangible assets are not subject to amortization. The carrying values of intangible assets are reviewed for indicators of impairment on at least an annual basis, or more frequently if events or changes in circumstances indicate that impairment may exist. Impairment is recognized if the carrying values of the intangible assets are not recoverable from their undiscounted cash flows and are measured as the difference between the carrying value and the fair value. Based upon the Company's assessment, there was no impairment of its intangible assets of $129 million at December 31, 2018.

See Notes 2(j), 2(k) and 7 to the Consolidated Financial Statements in Item 18 of this report for further details.

New Accounting Pronouncements

See Note 2(r) to the Consolidated Financial Statements included in Item 18 of this report.

C. Research and Development, Patents and Licenses, etc.

Not applicable.

D. Trend Information

For a discussion of known trends, uncertainties and other events that are reasonably likely to have a material impact on the Company, see Operating Results in Item 5, Liquidity and Capital Resources in Item 5 and Tabular Disclosure of Contractual Obligations in Item 5 of this report.

E. Off-balance sheet arrangements

As more fully described in Note 10 to the Consolidated Financial Statements in Item 18 of this report, the Company has fully and unconditionally guaranteed the obligations related to debt issued to third parties by its finance subsidiaries as follows:

- senior notes with an aggregate principal amount of €750 million issued by PartnerRe Ireland Finance DAC
- senior notes with an aggregate principal of $500 million issued by PartnerRe Finance B LLC
- Junior Subordinated Capital Efficient Notes (CENts) with a remaining aggregate principal amount of $63 million issued by PartnerRe Finance II Inc.

F. Tabular Disclosure of Contractual Obligations

In the normal course of its business, the Company is a party to a variety of contractual obligations as summarized below. These contractual obligations are considered by the Company when assessing its liquidity requirements and the Company is confident in its ability to meet all of its obligations. Contractual obligations at December 31, 2018 were as follows (in millions):

	Total	< 1 year	1-3 years	3-5 years	> 5 years
Contractual obligations:					
Operating leases	$ 126.1	$ 14.1	$ 32.0	$ 24.6	$ 55.4
Other operating agreements	$ 15.6	$ 11.1	$ 4.3	$ 0.2	$ —
Other invested assets [(1)]	$ 646.9	$ 320.9	$ 295.0	$ 31.0	$ —
Non-life reserves [(2)]	$ 9,895.4	$ 3,341.5	$ 2,852.5	$ 1,244.6	$ 2,456.8
Life and health reserves [(3)]	$ 3,059.0	$ 305.5	$ 523.9	$ 289.1	$ 1,940.5
Deposit liabilities	$ 7.2	$ 2.5	$ 2.2	$ 1.1	$ 1.4
Senior notes and preferred shares:					
2010 senior notes—principal[(4)]	$ 500.0	$ —	$ 500.0	$ —	$ —
2010 senior notes—interest	$ 41.3	$ 27.5	$ 13.8	$ —	$ —
2016 senior notes—principal[(5)]	€ 750.0	€ —	€ —	€ —	€ 750.0
2016 senior notes—interest	€ 47.0	€ 9.4	€ 18.8	€ 18.8	€9.4 per annum
Capital efficient notes—principal [(6)]	$ 63.4	$ —	$ —	$ —	$ 63.4
Capital efficient notes—interest	n/a	—[(6)]	—[(6)]	—[(6)]	—[(6)]
Series F non-cumulative preferred shares—principal[(7)]	$ 67.0	$ —	$ —	$ —	$ 67.0
Series F non-cumulative preferred shares—dividends	n/a	3.9	7.8	7.8	$3.9 per annum
Series G cumulative preferred shares—principal[(8)]	$ 160.4	$ —	$ —	$ 160.4	$ —
Series G cumulative preferred shares—dividends	n/a	$ 10.4	$ 20.8	$ 3.5	$10.4 per annum
Series H cumulative preferred shares—principal[(8)]	$ 293.8	$ —	$ —	$ 293.8	$ —
Series H cumulative preferred shares—dividends	n/a	$ 21.3	$ 42.6	$ 7.1	$21.3 per annum
Series I non-cumulative preferred shares—principal[(7)]	$ 183.0	$ —	$ —	$ —	$ 183.0
Series I non-cumulative preferred shares—dividends	n/a	$ 10.8	$ 21.6	$ 21.6	$10.8 per annum

n/a: Not applicable

(1) *The amounts above for other invested assets represent the Company's expected timing of funding capital commitments related to its strategic investments.*

(2) *The Company's non-life reserves represent management's best estimate of the cost to settle the ultimate liabilities based on information available at December 31, 2018, and are not fixed amounts payable pursuant to contractual commitments. The timing and amounts of actual loss payments related to these reserves might vary significantly from the Company's current estimate of the expected timing and amounts of loss payments based on many factors, including large individual losses as well as general market conditions.*

(3) *Life and health reserves at December 31, 2018 of $2,198 million are computed on a discounted basis, whereas the expected payments by period in the table above are the estimated payments at a future time and do not reflect a discount of the amount payable.*

(4) *PartnerRe Finance B LLC, the issuer of the 2010 senior notes, does not meet consolidation requirements under U.S. GAAP. Accordingly, the Company shows the debt to PartnerRe Finance B LLC of $500 million in its Consolidated Balance Sheet at December 31, 2018. The 2010 senior notes of an aggregate principal outstanding of $500 million mature on June 1, 2020. Interest on the senior notes is payable semi-annually and cannot be deferred.*

(5) *PartnerRe Ireland Finance DAC, the issuer of the 2016 senior notes, meets the consolidation requirements under U.S. GAAP. Accordingly, the Company shows the debt to third parties of €750 million in its Consolidated Balance Sheet at December 31, 2018. The 1.250% senior notes with aggregate principal outstanding of €750 million mature on September 15, 2026. Interest on the senior notes is payable annually.*

(6) *PartnerRe Finance II Inc., the issuer of the CENts, does not meet consolidation requirements under U.S. GAAP. Accordingly, the Company shows the debt to PartnerRe Finance II Inc. of $71 million in its Consolidated Balance Sheet at December 31, 2018. The aggregate principal amount of the CENts of $63 million, representing PartnerRe Finance II Inc.'s debt to third parties, is included in the table above. The CENts will mature on December 1, 2066 and may be redeemed at the option of the issuer, in whole or in part, since December 1, 2016 upon occurrence of specific rating agency or tax events. Interest on the*

CENts is payable quarterly until maturity at an annual rate of 3-month LIBOR plus a margin equal to 2.325%. As a result of the variable interest rate, the table above does not show the interest payable.

(7) The Company's 5.875% Series F and I preferred shares are non-cumulative, perpetual and have no mandatory redemption requirement, but may be redeemed at the Company's option at any time or in part from time to time on or after March 1, 2018 and May 1, 2021, respectively.

(8) The Company's 6.50% Series G and 7.25% Series H preferred shares are cumulative, perpetual and have no mandatory redemption requirement, but may be redeemed at the Company's option at any time or in part from time to time on or after May 1, 2021. Should the current interest rate environment and capital market conditions persist, it is reasonable to expect that the Company would redeem these preferred shares in 2021.

The Contractual Obligations and Commitments table above does not include an estimate of the period of cash settlement of its tax liabilities with the respective taxing authorities given the Company cannot make a reasonably reliable estimate of the timing of cash settlements.

See Notes 10 and 11 to the Consolidated Financial Statements in Item 18 of this report for further details related to debt and preferred shares.

Due to the limited nature of the information presented above, it should not be considered indicative of the Company's liquidity or capital needs. See Liquidity section above.

The Company has committed to a 10 year structured letter of credit facility issued by a high credit quality international bank, which has a final maturity of December 29, 2020. At December 31, 2018, the Company's participation in the facility was $67 million. At December 31, 2018, the letter of credit facility has not been drawn down and can only be drawn down in the event of certain specific scenarios, which the Company considers remote. Unless canceled by the bank, the credit facility automatically extends for one year, each year until maturity.

G. Safe Harbor

PartnerRe Ltd. has made statements in this annual report on Form 20-F that are forward-looking statements. In some cases, you can identify these statements by forward-looking words such as “may,” “might,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” or “continue,” the negative of these terms and other comparable terminology. These forward-looking statements, which are subject to various risks, uncertainties and assumptions about us, may include projections of our future financial performance, our anticipated growth strategies and anticipated trends in our business. These statements are only predictions based on our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from the results, level of activity, performance or achievements expressed or implied by the forward-looking statements, including those factors described in Risk Factors in Item 3 of this report.

Accordingly, we cannot guarantee future results, level of activity, performance or achievements. Forward-looking statements, subject to the risks, uncertainties and assumptions described above, speak only as of the date on which they are made, and we assume no obligation to update or revise any forward-looking statements or other information contained herein, whether as a result of new information, future events or otherwise. You are cautioned not to put undue reliance on these forward-looking statements. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements.

H. Non-GAAP Financial Measures

The Company has not presented or discussed any non-GAAP financial measures in this report as an addition to or substitute for measures of financial performance prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP).

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

The following are the directors and executive officers of the Company as of March 20, 2019.

Name	Position with the Company	Date Appointed
Brian Dowd	Director, Chairman of Audit Committee, and Chairman of the Board[(1)]	March 18, 2016[(1)]
John Elkann	Director	March 18, 2016
Bilge Ogut	Director	July 28, 2016
Mary Ann Brown	Director, Member of the Audit Committee	September 1, 2018
Jacques Bonneau	Director, Member of the Audit Committee	February 20, 2019
Emmanuel Clarke	Director, President and CEO, PartnerRe Ltd. and CEO Specialty	March 24, 2016
Mario Bonaccorso	Executive Vice President and CFO, PartnerRe Ltd.	April 4, 2016
Charles Goldie	CEO Property & Casualty	July 1, 2016
Scott Altstadt	Chief Underwriting Officer	July 1, 2016
Marc Archambault	CEO Life and Health	April 1, 2017
Dorothée Burkel	Chief Corporate and People Operations Officer	October 2, 2017
Turab Hussain	Chief Risk and Actuarial Officer	December 2, 2017
Nikhil Srinivasan	Chief Investment Officer	September 1, 2018

(1) Brian Dowd succeeded John Elkann as Chairman of the Board effective September 1, 2018

Biographical information

- **Brian Dowd, Director, Chairman of the Board and Audit Committee (Independent)**

  Previously, Mr. Dowd was a member of the Office of the Chairman of ACE Group, focusing on underwriting-related matters, including oversight of the ACE Group's product boards, the general underwriting disciplines of the company's profit centers, outward reinsurance placements and run-off operations and special strategic projects. Mr. Dowd also held relevant positions at ACE Group from 1997 until his appointment as Chairman of ACE's Insurance – North America business segment in 2006. He also held the role of Vice Chairman of ACE Limited from 2009 until his retirement in 2015. Prior to that, Mr. Dowd held underwriting positions of increasing responsibility at Arkwright Mutual Insurance Company over a seven-year period. He holds a Bachelor of Science (B.S.) in Finance from Northern Illinois University, as well as the Chartered Property Casualty Underwriter professional designation.

- **John Elkann, Director**

  John Elkann is Chairman and Chief Executive Officer of EXOR N.V., Chairman of Fiat Chrysler Automobiles N.V. and Chairman of Ferrari N.V. Born in New York in 1976, Mr. Elkann obtained a scientific baccalaureate from the Lycée Victor Duruy in Paris, and graduated in Engineering from Politecnico of Turin. While at university, he gained work experience in various companies of the Fiat Group in the UK and Poland (manufacturing) and France (sales and marketing). He started his professional career in 2001 at General Electric as a member of the Corporate Audit Staff, with assignments in Asia, the USA and Europe. Mr. Elkann is Chairman of Giovanni Agnelli B.V., Vice Chairman of GEDI Editoriale S.p.A, a board member of the Economist Group, Chairman of the Giovnni Agnelli Foundation and a member of MoMA.

- **Bilge Ogut, Director (Independent)**

  Ms. Ogut is Head of Private Equity in Europe at Partners Group, a global private markets investment manager firm, and is a member of Partners Group's Private Equity Directs Investment Committee and Private Equity Primaries Europe Investment Committee. Prior to joining Partners Group she was Deputy Head of Private Equity at Standard Bank International from 2010 to 2011 and was with Warburg Pincus from 1998 to 2009.

- **Mary Ann Brown, Director, Member of the Audit Committee (Independent)**

  Mary Ann Brown was Chair of Pacific Life Re and has held multiple roles at Pacific Life before her retirement in 2017. As Chair of Pacific Life Re Ltd., Ms. Brown directed strategy and growth of the global reinsurance division. Prior to joining Pacific Life, Ms. Brown held multiple executive roles at MetLife, Swiss Re and New York Life. She holds a Bachelors and Masters of Arts in Education from Emory University, USA as well as a Masters of Actuarial Science from Georgia State University.

- **Jacques Bonneau, Director, Member of the Audit Committee (Independent)**

  Mr. Bonneau has 41 years of professional experience in the re/insurance industry. He has held multiple executive roles, most recently at Chubb Ltd. as Group Chief Underwriting Officer from 2014 to 2017 and as CEO, Chubb Tempest Re Group from 2005 to 2014. Prior to that, he served as CEO, Chubb Tempest Re USA for six years. He holds a Bachelor's degree of Commerce from Carleton University, Ontario as well as a Masters of Business Administration from Queen's University, Ontario.

- **Emmanuel Clarke**, **Director, President and CEO, PartnerRe Ltd. and CEO Specialty**

  Mr. Clarke is responsible for leading and managing the Company's operations. He is also a member of the Company's Executive Leadership Team. Mr. Clarke has 20 years of professional experience in the reinsurance industry. He joined PartnerRe in 1997 and was appointed as Head of Credit & Surety, PartnerRe Global in 2002 and Head of P&C, PartnerRe Global in 2006. In 2008, Mr. Clarke was appointed as Head of Specialty Lines, PartnerRe Global and Deputy CEO of PartnerRe Global. Effective September 1, 2010, Mr. Clarke was appointed as CEO of PartnerRe Global. On September 8, 2015, Mr. Clarke was appointed President of PartnerRe and on 24 March, 2016, Mr. Clarke was appointed CEO of PartnerRe. Mr. Clarke has a MBA from the University Paris, IX - Dauphine, specializing in Finance and Controlling and a MBA in International Business from Baruch College of CUNY.

- **Mario Bonaccorso, Executive Vice President and CFO, PartnerRe Ltd.**

  Mr. Bonaccorso is a member of PartnerRe's Executive Leadership Team and is responsible for the Company's financial operations. Prior to joining PartnerRe, Mr. Bonaccorso served as Managing Director of EXOR for nine years where he was responsible for investments and the management of EXOR's portfolio companies. Prior to joining EXOR, Mr. Bonaccorso worked as a Research and Development Telecom Engineer at Qualcomm Inc., as an engagement manager at McKinsey & Co. and as Chief Investment Officer of Jupiter Finance. Mr. Bonaccorso has a Master of Science cum laude in Telecommunications Engineering at Politecnico di Torino University and a MBA with honors from INSEAD. Mr. Bonaccorso has served on behalf of EXOR on the board of directors of Cushman & Wakefield, Banijay Holding, Banca Leonardo and EXOR SA.

- **Charles Goldie, CEO Property & Casualty**

  Charles Goldie is a member of PartnerRe's Executive Leadership Team and is responsible for the executive management of PartnerRe's Property and Casualty worldwide business segment. Mr. Goldie has over 25 years of experience both as an actuary and as a reinsurance underwriting manager. He joined PartnerRe in 2002 as head of the U.S. Specialty Lines portfolio and in 2009 was named Head of Risk Management and Reserving for PartnerRe Global. Prior to joining PartnerRe, he worked for Gerling Global Reinsurance Corp of America as Head of Casualty Underwriting and for Milliman as a consulting actuary. Mr. Goldie has a BSc in Economics from the State University of New York at Binghamton and is a fellow of the Casualty Actuarial Society.

- **Scott Altstadt, Chief Underwriting Officer**

  Scott Altstadt is a member of PartnerRe's Executive Leadership Team and is responsible for the Company's underwriting function. Mr. Altstadt has over 27 years of professional experience in the insurance and reinsurance industries. He joined PartnerRe in 2001, as Senior Pricing Actuary of P&C and was appointed as Chief Pricing Actuary for Specialty Lines in 2002, becoming Deputy Head of P&C in 2008. He was appointed to the position of Chief Underwriting Officer PartnerRe Global in 2013. Prior to joining PartnerRe, Mr. Altstadt worked in the U.S. and Europe with Zurich Financial Services and CNARe. Mr. Altstadt has a B.S. in Mathematics and Statistics from Purdue University.

- **Marc Archambault, CEO Life and Health**

  Marc Archambault is a member of PartnerRe's Executive Leadership Team and is responsible for its worldwide Life and Health business segment. Mr. Archambault has more than 26 years of experience in Life reinsurance, most recently as CEO of SCOR Global Life Asia-Pacific, where he led the company's regional growth strategy in those markets, and as a member of the senior management team for Global Life. Prior to that, Mr. Archambault held a number of senior management positions at SCOR where he implemented growth strategies and product development initiatives across multiple international markets in Europe, North America, Asia and Africa. Mr. Archambault holds a Bachelor of Actuarial Science from Laval University in Quebec, Canada and is an Associate with the Canadian Institute of Actuaries.

- **Dorothée Burkel, Chief Corporate and People Operations Officer**

  Dorothée Burkel is a member of the Company's Executive Leadership Team and is responsible for strategies related to attracting, developing and retaining the best talent, aligning culture and strategy, and ensuring governance and operational effectiveness. Ms. Burkel specializes in Human Resources & Communications and has experience across a number of international companies. Prior to joining PartnerRe, Ms. Burkel was formerly the Human Resources Director for Google Southern Europe from 2008 – 2012. In 2012, this role was extended to include the Middle East and Africa and in 2015, to the

entire EMEA region where she supported Google's Business and G&A functions. Ms. Burkel worked for AOL France from 2001 to 2005 as the Human Resources Director and was promoted to Vice President for Human Resources and Corporate Communications for AOL France in 2005. Before leaving in 2008, she also took on the responsibility for Branding and Communications for AOL Europe. Ms. Burkel holds a Master's degree in French Modern Literature and graduated with honors in Political Sciences from the Institut d'Etudes Politiques in Paris.

- **Turab Hussain, Chief Risk and Actuarial Officer**

  Mr. Hussain is a member of the Company's Executive Leadership Team and is responsible for the risk management, capital modeling and reserving functions. Mr. Hussain has more than 20 years' experience in the insurance and reinsurance industries. Prior to joining PartnerRe, Mr. Hussain held several senior actuarial and underwriting roles with responsibility for reserving, risk assessment, capital allocation and analysis at the Hartford as well as Arch Insurance Group and American Reinsurance. Mr. Hussain is an Associate of the Casualty Actuarial Society (ACAS), a Member of the American Academy of Actuaries (MAAA) and a Chartered Enterprise Risk Analyst (CERA). He earned his bachelor's degree in economics and statistics from Rutgers University.

- **Nikhil Srinivasan, Chief Investment Officer**

  Mr. Srinivasan is the former Group Chief Investment Officer and a member of the Group Management Committee of Generali and Chairman of Generali Real Estate. Prior to joining Generali, he was at Allianz SE for ten years based in Singapore and Munich, where he was Group Chief Investment Officer and a member of Allianz SE's International Executive Committee responsible for the firm's investment strategy.

The Directors referred to above as "Independent" are considered independent in accordance with the definition of the applicable NYSE and SEC Rules.

On March 12, 2019, the Company announced several changes to the Executive Leadership Team effective April 1, 2019, including changes related to a reorganization of its Property & Casualty (P&C) business segment, which will comprise three distinct regions: Americas; Europe, Middle-East and Africa (EMEA); and Asia-Pacific, reporting directly to PartnerRe President and CEO, Emmanuel Clarke.

The following individuals will join the Executive Leadership Team effective April 1, 2019:

- **Philippe Meyenhofer**

  Mr. Meyenhofer is currently Deputy CEO, P&C and Head of P&C Europe and will lead the Company's EMEA regional unit. Mr. Meyenhofer has held several leadership positions since joining PartnerRe in August 2010. He has led P&C Europe since July 2016 and was appointed as Deputy CEO, P&C in December 2018.

- **James Beedle**

  Mr. Beedle will continue in his role as Head of P&C Asia-Pacific and CEO of Partner Reinsurance Asia Pte. Ltd. In addition to leading the Asia-Pacific regional unit, Mr. Beedle will assume executive responsibility for the Global Clients and Broker Management unit. Mr. Beedle joined PartnerRe in January 2017 in his current role. Previously, Mr. Beedle was Senior Managing Director of Willis Re Asia-Pacific.

- **Greg Haft**

  Mr. Haft will be appointed CEO for Specialty Lines. Since January 2018, Mr. Haft has held the position of Deputy CEO of Specialty Lines and has led its Property, Marine and Energy (PME) unit. Prior to that, Mr. Haft was Head of Global Cat, and Property North America since 2016. He will retain the responsibility of the PME unit in addition to becoming CEO of Specialty.

In addition to the three individuals above, the P&C business segment's Americas regional unit will be led by a newly appointed executive, for whom a search is currently underway.

As part of the reorganization of the P&C business unit referred to above, the Company and Charles Goldie, CEO Property & Casualty have agreed that he will leave the Company September 30, 2019.

B. Compensation

Director Compensation

During 2018, the Company paid approximately $1 million in cash as compensation to directors of the Company for their services as directors. Mr. Clarke did not receive any compensation for his services as a director in 2018. All directors are reimbursed for travel and other related expenses personally incurred while attending Board or committee meetings.

Executive Compensation

Executive compensation is comprised of salary, annual incentives and other benefits. The Long-term incentive (LTI) Program consists of awards either in the form of cash or restricted common shares (Class B shares) issued to certain executives.

For the year ended December 31, 2018 and 2017 the Company recorded compensation expense of $13 million paid or payable to executive officers as a form of cash compensation.

The Class B shares may be granted to or purchased by certain executives of the Company at the discretion of the Company. The LTI Committee of the Board approved the related Certificate of Designation in 2017 which stipulated that the granted shares are restricted from sale for three years from date of grant. Grants can be made by the Company twice a year as of March 1 or September 1. The number of shares granted is determined based on a LTI award amount divided by the latest U.S. GAAP book value (or common shareholder's equity) per share published as of either December 31 or June 30 (the valuation dates). As a result, Class B shares with a grant date of March 1 are based on the U.S. GAAP book value as of December 31 valuation date, while Class B shares with a grant date of September 1 are based on the U.S. GAAP book value as of June 30 valuation date.

Unrestricted Class B shares can be redeemed, subject to certain restrictions, at the option of the employee. However, per the notice of grant provided to the employee, once the restriction period has expired, the employee can only sell or transfer the Class B shares back to the Company provided the employee continues to hold an agreed minimum of four times (4X) their gross LTI target value, unless otherwise agreed in writing.

During 2017 and 2018, the Company granted gross awards in the form of Class B restricted shares of $6 million and $9 million, respectively, which resulted in a total of 247,744 Class B restricted shares granted, 104,230 in 2017 and 143,514 in 2018. These Class B restricted shares were issued net of share equivalent to settle related withholding tax, where applicable, resulting in a total issued number of Class B restricted shares of 161,810 to December 31, 2018, of which 71,658 Class B restricted shares were issued in 2017 and 90,152 Class B restricted shares were issued in 2018.

The related compensation expense is recognized at fair value over the restriction period of up to three years from date of grant. The total compensation expense recorded in the Consolidated Statements of Operations for the years ended December 31, 2017 and 2018 was $2 million and $3 million, respectively. See Note 14 to the Consolidated Financial Statements in Item 18 of this report for further details.

See also Item 6.E below for details of share ownership related to the Class B shares and Item 10.D regarding restrictions on share transfers.

C. Board Practices

The Board currently consists of six directors (see Item 6.A above for details). The current Board have been elected to serve until the next Annual General Meeting of the Company or until their respective successors are appointed. As provided in our Bye-Laws, the number of Directors shall be such number not less than three as the Company by resolution may, from time to time, determine (see also Item 10.B for the details of the Company's Bye-laws).

There are no service contracts between the Company and any of the Company's directors providing for benefits upon termination of their employment or service.

Audit Committee

The Board has established an Audit Committee comprised of Mr. Dowd, Mr. Bonneau and Ms. Brown who are independent in accordance with the definition of the applicable NYSE and SEC Rules. Ms. Brown is designated as the Audit Committee financial expert as noted in Item 16A of this report. Mr. Patrick Thiele was also a member of the Audit Committee until his resignation from the Board on December 31, 2018. Mr. Thiele was deemed independent in accordance with the definition of the applicable NYSE and SEC Rules.

Pursuant to its charter, the Audit Committee's primary responsibilities are to assist Board oversight of:

- the integrity of PartnerRe's financial statements;
- PartnerRe's compliance with legal and regulatory requirements;
- the Company's system of internal controls;
- the qualifications and independence of the external auditors; and
- the performance of the Company's internal and external audit functions.

The Audit Committee regularly meets with management, the Chief Audit Officer and the Company's independent registered public accounting firm to review matters relating to the quality of financial reporting and internal accounting controls, including the nature, extent and results of their audits.

D. Employees

The Company had 958 employees at December 31, 2018. The following table shows the breakdown of the number of employees by geographic location as of December 31, 2018, 2017 and 2016:

Geographic location	December 31, 2018	December 31, 2017	December 31, 2016
Asia, Australia and New Zealand	**50**	46	46
Europe	**541**	537	539
Latin America, Caribbean and Africa	**5**	7	7
North America	**362**	388	365
Total	**958**	978	957

The Company employed an average of 38 temporary employees during 2018.

The decrease in the number of employees in 2018 compared to 2017 was primarily driven by the timing of natural employee turnover. The increase in 2017 compared to 2016 was primarily driven by the inclusion of Aurigen employees in 2017.

E. Share ownership

As more fully described in section B. Compensation above, and in Note 14 to the Consolidated Financial Statements in Item 18 of this report, the Company has designated, granted, and issued Class B common shares to certain executives and directors of the Company.

As of March 20, 2019, 100,000,000 Class A common shares are held by EXOR Nederland N.V. and 427,516 Class B common shares are held by certain executive officers and directors of the Company, either by grant of restricted or by purchase of unrestricted Class B common shares.

The Class B common shares issued and outstanding represent less than 0.5% of the beneficial ownership and voting rights of the Company as of March 20, 2019.

Except as otherwise required by law or the Certificate of Designation, or any sub-plan or addendum thereto, holders of Class B common shares have the same voting rights as the holders of Class A common shares.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

As more fully described in Note 1 to the Consolidated Financial Statements in Item 18 of this report, 100% of the Company's Class A shares are owned by EXOR Nederland N.V.

B. Related Party Transactions

As at December 31, 2018 and 2017 EXOR Nederland N.V. held 100% of the Class A shares and more than 99% of the total voting shares (Class A and Class B) of the Company and therefore has the power to make decisions that impact the Company.

The Company has entered into certain related party transactions as disclosed in Notes 10 and 18 to the Consolidated Financial Statements in Item 18 of this report.

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

See the Consolidated Financial Statements, Notes to the Consolidated Financial Statements and Financial Statements Schedules in Item 18 of this report.

B. Significant Changes

See Note 21 to the Consolidated Financial Statements in Item 18 for a disclosure of events subsequent to year end and prior to the date of filing.

ITEM 9. THE OFFER AND LISTING

A. Offer and Listing Details

The Company's common shares are no longer listed as a result of the acquisition by Exor N.V. in March 2016. The Company's preferred shares are listed on the NYSE under the symbols PRE-F, PRE-G, PRE-H, and PRE-I. Refer to Note 11 to the Consolidated Financial Statements in Item 18 of this report for further details.

B. Plan of Distribution

Not applicable.

C. Markets

Each series of the Company's preferred shares is listed and traded on the NYSE. The 5.875% Series F Non-Cumulative Preferred Shares began trading on February 19, 2013 and the 6.50% Series G Cumulative Preferred Shares, the 7.25% Series H Cumulative Preferred Shares and the 5.875% Series I Non-Cumulative Preferred Shares began trading on May 6, 2016.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

The Company's Amended Memorandum of Association has been filed as exhibit 3.1 to Form F-3 (File no 333-7094) filed with the SEC on June 20, 1997, and is hereby incorporated by reference into this Annual Report.

The Company's Bye-laws were adopted on March 18, 2016 and filed as exhibit 3.1 to the Company's Report on Form 8-K (File No 001-14536) filed with the SEC on March 18, 2016, and are hereby incorporated by reference into this Annual Report.

Corporate Registration and Objectives

PartnerRe Ltd. is incorporated under the laws of Bermuda. The Company is registered at the Bermuda Registrar of Companies under the number 18620. The objects and powers of the Company are set forth in the Memorandum of Association of the Company.

Board of Directors

The Companies Act authorizes the directors of a company, subject to its bye-laws, to exercise all powers of the company except those that are required by the Companies Act or its bye-laws to be exercised by the shareholders. The Company's Bye-Laws provide that its business is to be generally managed and conducted by the Board and that the Board shall be such number not less than three as the Company by resolution may, from time to time, determine. The Directors shall be elected or appointed at the Annual General Meeting, at any Special General Meeting called for that purpose or by Resolution. Directors shall hold office for such term as the Shareholders may determine or, in the absence of such determination, until the next Annual General Meeting or until their successors are elected or appointed or their office is otherwise vacated.

Under the Insurance Act, we must serve notice to the BMA of the fact that any person has become or ceased to be a director or officer of the Company. Such notice shall be served before the end of forty-five days beginning with the day on which the designated insurer becomes aware of the relevant facts.

Under the Company’s Bye-laws and subject to the Companies Act, a Director is not prohibited from being a party to or otherwise have an interest in, any transaction or arrangement with the Company or in which the Company is otherwise interested. A Director who has complied with the Companies Act and with the Company’s Bye-laws with regard to declaring the nature of his interest in a transaction or arrangement with the Company, or in which the Company is otherwise interested, may be counted in the quorum and vote at any meeting at which such transaction or arrangement is considered by the Board.

In addition to its powers granted under Bye-Law 27, the Board for and on behalf of the Company may provide benefits, whether by the payment of gratuities or pensions or otherwise, for any person including any Director or former Director who has held any executive office or employment with the Company or with any body corporate which is or has been a subsidiary or Affiliate of the Company or a predecessor in the business of the Company or of any such subsidiary or Affiliate, and to any member of his family or any person who is or was dependent on him, and may contribute to any fund and pay premiums for the purchase or provision of any such gratuity, pension or other benefit, or for the insurance of any such person.

The Company may in a Special General Meeting called for that purpose remove a Director, provided notice of any such meeting shall be served upon the Director concerned not less than fourteen (14) days before such meeting and s/he shall be entitled to be heard at such meeting. The Shareholders may authorize the Directors to fill any vacancy in their number, from time to time.

Under the Company’s Bye-Laws the quorum necessary for the transaction of the business of the Board may be fixed by the Board and, unless so fixed at any other number, shall be three (3) individuals and requires the presence of at least one Majority Shareholder Director Designee for so long as the Board consists of at least one Majority Shareholder Director Designee. Any Director who ceases to be a Director at a meeting of the Board may continue to be present and to act as a Director and be counted in the quorum until the termination of the meeting if no other Director objects and if otherwise a quorum of Directors would not be present.

A resolution in writing signed by all the Directors for the time being entitled to receive notice of a meeting of the Board shall be valid and effectual as a resolution pass at a meeting of the Board.

A meeting of the Board or a committee appointed by the Board may be held by means of such telephone, electronic or other communication facilities (including, without limiting the generality of the foregoing, by telephone or by video conferencing) as permit all persons participating in the meeting to communicate with each other simultaneously and instantaneously and participation in such a meeting shall constitute presence in person at such meeting. Such a meeting shall be deemed to take place where the largest group of those Directors participating in the meeting is physically assembled, or, if there is no such group, where the chairman of the meeting then is.

Among the powers of the Company which the Board may exercise, the Board is allowed to borrow money and to mortgage or charge all or any part of the undertaking, property and assets (present and future) and uncalled capital of the Company. The Board may also issue debentures and other securities (whether outright or as collateral security for any debt, liability or obligation of the Company or of any other persons).

Bermuda law provides that the Directors owe a fiduciary duty to the Company to act in good faith in their dealings with or on behalf of the Company and exercise their powers and fulfill the duties of their office honestly. This duty include the following essential elements:

- a duty to act in good faith in the best interests of the Company;

- a duty not to make a personal profit from opportunities that arise from the office of director;
- a duty to avoid situations in which there is an actual or potential conflict between a personal interest or the duties owed to third parties and/or the Director's duty to the Company; and
- a duty to exercise powers for the purpose for which such powers were intended.

The Companies Act imposes a duty on the Directors and Officers to:

- act honestly and in good faith with a view to the best interests of the Company; and
- exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

The Companies Act also imposes various duties on the Directors and Officers with respect to certain matters of management and administration of the Company.

Under Bermuda law, the Directors and Officers generally owe fiduciary duties to the Company itself, not to the Company's individual shareholders, members, or creditors.

Shares and Share Rights

Subject to any special rights conferred on the holders of any Share or class of Shares, any Share in the Company may be issued with or have attached thereto such preferred, deferred, qualified or other special rights or such restrictions, whether in regard to dividend, voting, return of capital or otherwise, as the Board may determine.

Subject to the general provisions of Bermuda law, the Board may, at its discretion and without the sanction of a Resolution, authorize the acquisition by the Company of its own Shares, of any class, at any price (whether at par or above or below par). Under Bermuda law, the Company must pay for such share purchases out of capital paid-up for these shares, out of funds that would otherwise be available for a dividend or distribution or out of proceeds of the issue of additional shares for the purpose of the purchase. However, to the extent that any premium over the par value is payable on the purchase, the premium must be provided out of funds that would otherwise be available for a dividend or distribution or out of the Company's share premium account.

Any Shares to be purchased may be selected in any manner whatsoever, to be either cancelled or held as Treasury Shares, upon such terms as the Board may in its discretion determine, provided always that such acquisition is effected in accordance with the provisions of the Companies Act. The whole or any part of the amount payable on any such acquisition may be paid or satisfied otherwise than in cash, to the extent permitted by the Companies Act.

As provided in our Bye-Laws and subject to the Companies Act, all or any of the special rights for the time being attached to any class of Shares for the time being issued may from time to time (whether or not the Company is being wound up) be altered or abrogated with the consent in writing of the holders of not less than seventy five percent (75%) of the issued Shares of that class or with the sanction of a resolution passed at a separate general meeting of the holders of not less than seventy five percent (75%) of the issued Shares of that class, voting in person or by proxy. To any such separate general meeting, all the provisions of these Bye-Laws as to general meetings of the Company shall mutatis mutandis apply, but so that the necessary quorum shall be two (2) or more persons holding or representing by proxy any of the Shares of the relevant class, that every holder of Shares of the relevant class shall be entitled on a poll to one vote for every such Share held by him and that any holder of Shares of the relevant class present in person or by proxy may demand a poll; provided however, that if the Company or a class of Shareholders shall have only one Shareholder, one Shareholder present in person or by proxy shall constitute the necessary quorum.

Subject to Bermuda law and except insofar as the rights attaching to, or the terms of issue of, any Share otherwise provide, the Board may from time to time declare dividends or distributions out of contributed surplus to be paid to the Shareholders according to their rights and interests, including such interim dividends as appear to the Board to be justified by the position of the Company. The Board, in its discretion, may determine that any dividend shall be paid in cash or shall be satisfied, subject to the Bye-Laws, in paying up in full Shares in the Company to be issued to the Shareholders credited as fully paid or partly paid or partly in one way and partly the other. The Board may also pay any fixed cash dividend which is payable on any Shares of the Company half yearly or on such other dates, whenever the position of the Company, in the opinion of the Board, justifies such payment.

The Board may from time to time resolve to capitalize all or any part of any amount for the time being standing to the credit of any reserve or fund which is available for distribution or to the credit of any Share premium account and accordingly that such amount be set free for distribution amongst the Shareholders or any class of Shareholders who would be entitled thereto.

If the Company shall be wound up, the liquidator may, with the sanction of a Resolution of the Company and any other sanction required by the Companies Act, divide amongst the Shareholders in specie or kind the whole or any part of the assets of the Company (whether they shall consist of property of the same kind or not) and may for such purposes set such values as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the

Shareholders or different classes of Shareholders. The liquidator may, with the like sanction, vest the whole or any part of such assets in trustees upon such trust for the benefit of the contributories as the liquidator, with the like sanction, shall think fit, but so that no Shareholder shall be compelled to accept any Shares or other assets upon which there is any liability.

General Meetings of Shareholders and Voting Rights

If required under the Companies Act, the Board shall convene and the Company shall hold general meetings as Annual General Meetings in accordance with the requirements of the Companies Act at such times and places as the Board shall appoint or, if requested in writing signed by the Majority Common Shareholder, at such times and places as the Majority Common Shareholder shall request. The Board may, whenever it thinks fit, and shall, when required by the Companies Act or when requested by the Majority Common Shareholder, convene general meetings other than Annual General Meetings which shall be called Special General Meetings, at such time and place as the Board may appoint or, if requested in writing signed by the Majority Common Shareholder, at such time and place as the Majority Common Shareholder shall request. Except as required by the Companies Act or when requested by the Majority Common Shareholder, Special General Meetings may not be called by any person other than the Board. Save where a greater majority is required by the Companies Act or the Bye-Laws, any question proposed for consideration at any general meeting shall be decided on by a simple majority of votes cast.

Except in the case of the removal of auditors or Directors, anything which may be done by resolution of the Shareholders in general meeting or by resolution of any class of Shareholders in a separate general meeting may be done by resolution in writing. Any such Resolution shall be signed by such number of Shareholders (or the holders of such class of Shares) as would be required if the Resolution had been voted on at a meeting of Shareholders or, all the Shareholders, or such other majority of the Shareholders as may be provided by the Bye-Laws. Such resolution in writing may be signed by the Shareholder or its proxy, or in the case of a Shareholder that is a corporation (whether or not a company within the meaning of the Companies Act) by its representative on behalf of such Shareholder, in as many counterparts as may be necessary.

Under our Bye-laws should any person (other than EXOR or any member of the Exor Group) be a Ten Percent Shareholder, notwithstanding any provision to the contrary in these Bye-Laws, the votes conferred by the Controlled Shares of such person are hereby reduced (and shall be automatically reduced in the future) by whatever amount is necessary so that after any such reduction such person shall not be a Ten Percent Shareholder. Notwithstanding the foregoing, the Board may waive the restrictions in its discretion and on a case by case basis.

Change in Control

Subject to the Companies Act and pursuant our Bye-Laws, in addition to the approval of the Board, any resolution proposed for consideration at any general meeting to approve the amalgamation or merger of the Company with any other company, wherever incorporated, shall require the approval of a simple majority of votes cast at such meeting. A poll may be demanded in respect of such resolution in accordance with the Bye-Laws. Under Bermuda law, in the event of an amalgamation or a merger of a Bermuda Company with another, a shareholder of the Bermuda company who has not voted in favor of the amalgamation or merger and is not satisfied that a fair value has been offered for such shareholder’s shares, may apply to the Supreme Court of Bermuda, within one month’s notice of the special general meeting, to appraise the fair value of the shares.

Changes in Capital

Subject to the Companies Act, Bye-Laws and Amended Memorandum of Association, the Company may from time to time by Resolution authorize the reduction of its issued Share Capital or any Share premium account in any manner.

C. Material Contracts

On October 20, 2016, the Company entered into a definitive agreement to acquire 100% of the outstanding ordinary shares of Aurigen for a total purchase price of CAD 370 million (or approximately $278 million). The acquisition was completed on April 3, 2017.

D. Exchange Controls

Securities may be offered or sold in Bermuda only in compliance with the provisions of the Bermuda Companies Act 1981, Investment Business Act 2003, and the Exchange Control Act 1972 and related regulations, each as amended, which regulate the sale of securities in Bermuda. In addition, specific permission is required from the BMA, pursuant to the provisions of the Exchange Change Control Act 1972 and related regulations (Exchange Control Act), for all issuances and transfers of securities of Bermuda companies, other than in cases where the BMA has granted a general permission. The BMA, in its policy dated June 1, 2005, provides that where any equity securities of a Bermuda company are listed on an appointed stock exchange (the NYSE is deemed to be an appointed stock exchange under Bermuda law), general permission is given for the issue and subsequent transfer of any equity

securities of such company from and/or to a non-resident of Bermuda, for as long as any equity securities of the company remain so listed. Our common shares are not listed on the NYSE and accordingly the general permission will not apply to them.

The BMA has, however, granted us permission for the issue, sale and transfer of up to 20% of any security as defined in the Exchange Control Act including (without limitation) the grant or creation of options, warrants, coupon, rights and depository receipts (collectively, Securities) to and among persons who are resident of Bermuda for exchange control purposes, whether or not the Securities are listed on an appointed stock exchange.

Under the Insurance Act, where neither the shares of the insurer nor the shares of its parent company are not traded on any stock exchange, no person shall become a 10%, 20%, 33% or 50% shareholder controller of the insurer unless (a) he has filed a notice in writing to the BMA that he intends to become a controller of the insurer and (b) the BMA has, not later than 45 days beginning on the date of service of that notice, notified him in writing that there is no objection to him becoming such a controller of the insurer or the 45 days have elapsed without the BMA having served written notice of objection. Likewise, any person who ceases to become a holder of at least 10%, 20%, 33% or 50% of our voting shares must notify the BMA in writing no later than 45 days of such disposal. As described herein, our Bye-Laws contain restrictions on the transfer of shares that generally would have the effect of prohibiting any shareholder, other than EXOR or any member of the Exor Group, from owning 10% or more of our common shares.

E. Taxation

The Company and PartnerRe Bermuda are not subject to income or profits tax, withholding tax, capital gains tax or capital transfer tax in Bermuda. See Business Overview—Taxation of the Company and its Subsidiaries in Item 4 for further details.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

Documents that have been filed by the Company with the U.S. Securities and Exchange Commission (SEC) can be read or copied at the SEC’s office of Investor Education and Advocacy located at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the public reference rooms and their copy charges by calling the SEC at 1-800-SEC-0330. Filings with the SEC are also available to the public from commercial document retrieval services, and from the website maintained by the SEC at http://www.sec.gov.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Overview

Management believes that the Company is principally exposed to six types of market related risk: interest rate risk, credit spread risk, foreign currency risk, counterparty credit risk, equity price risk and real estate price risk. How these risks relate to the Company, and the process used to manage them, is discussed below.

The Company's investment philosophy distinguishes between assets that are generally matched against the estimated net reinsurance liabilities (liability funds) and those assets that represent shareholder capital (capital funds). Liability funds are invested in a way that generally matches them to the corresponding liabilities in both duration and currency composition to provide a natural hedge against changes in interest rates and foreign exchange rates.

The Company's investment philosophy is to reduce foreign currency risk on capital funds by investing primarily in U.S. dollar denominated investments. In considering the market risk of capital funds, it is important to recognize the benefits of portfolio diversification. Although these asset classes in isolation may introduce more risk into the portfolio, market forces have a tendency to influence each class in different ways and at different times. Consequently, the aggregate risk introduced by a portfolio of these assets should be less than might be estimated by summing the individual risks.

Although the focus of this discussion is to identify risk exposures that impact the market value of assets alone, it is important to recognize that the risks discussed herein are significantly mitigated to the extent that the Company's investment strategy allows market forces to influence the economic valuation of assets and liabilities in a way that is generally offsetting.

As described above in this report, the Company's investment strategy allows the use of derivative investments, subject to strict limitations. The Company also imposes a high standard for the credit quality of counterparties in all derivative transactions and aims to diversify its counterparty credit risk exposure. See Note 6 to the Consolidated Financial Statements in Item 18 of this report for additional information related to derivatives.

The following addresses those areas where the Company believes it has exposure to material market risk in its operations.

Interest Rate Risk

The Company's fixed maturity portfolio and the fixed maturity securities in the investment portfolio are exposed to interest rate risk. Fluctuations in interest rates have a direct impact on the market valuation of these securities. The Company manages interest rate risk on liability funds by constructing bond portfolios in which the economic impact of a general interest rate shift is comparable to the impact on the related liabilities. The Company believes that this process of matching the duration mitigates the overall interest rate risk on an economic basis. For Non-life business and the mortality line of the Life business, the estimated duration of the Company's liabilities is based on projected claims payout patterns. For policy benefits related to annuity business, the Company estimates duration based on its commitment to annuitants. The Company manages the exposure to interest rate volatility on capital funds by choosing a duration profile that it believes will optimize the risk-reward relationship.

This matching of duration insulates the Company from the economic impact of interest rate changes. The Company's liabilities are carried at their nominal value, and are not adjusted for changes in interest rates, with the exception of certain policy benefits for life and annuity contracts and deposit liabilities that are interest rate sensitive. However, substantially all of the Company's invested assets are carried at fair value, which reflects such changes. As a result, an increase in interest rates will result in a decrease in the fair value of the Company's investments and a corresponding decrease, net of applicable taxes, in the Company's shareholders' equity. A decrease in interest rates would have the opposite effect.

At December 31, 2018 and 2017, the Company held approximately $2,390 million and $1,879 million, respectively, of mortgage/asset-backed securities. These assets are exposed to prepayment risk, the adverse impact of which is more evident in a declining interest rate environment.

At December 31, 2018 and 2017, the fair value of investments exposed to interest rate risk was $14,131 million and $14,115 million, respectively.

At December 31, 2018, the Company estimates that the hypothetical case of an immediate 100 basis points or 200 basis points parallel shift in global bond curves would result in a change in the fair value of investments exposed to interest rate risk, total invested assets and shareholders' equity as follows (in millions of U.S. dollars):

	-200 Basis Points	% Change	-100 Basis Points	% Change	December 31, 2018	+100 Basis Points	% Change	+200 Basis Points	% Change
Fair value of investments exposed to interest rate risk [(1)]	$ 15,346	9%	$ 14,739	4%	$ 14,131	$ 13,524	(4)%	$ 12,916	(9)%
Total invested assets [(2)]	$ 17,598	7%	$ 16,991	4%	$ 16,383	$ 15,776	(4)%	$ 15,168	(7)%
Shareholders' equity	$ 7,732	19%	$ 7,124	9%	$ 6,517	$ 5,910	(9)%	$ 5,302	(19)%

(1) Includes fixed income securities, short term investments, certain other invested assets, certain cash and cash equivalents and funds holding fixed income securities.

(2) Includes total investments, cash and cash equivalents and accrued interest.

The changes do not take into account any potential mitigating impact from the equity market, taxes or the corresponding change in value of the Company's reinsurance liabilities, which would substantially offset the economic impact on invested assets, although the offset would not be reflected in the Consolidated Balance Sheet.

The Company strives to match the foreign currency exposure in its fixed income portfolio to its U.S. dollar, Euro and Canadian dollar liabilities. The Company believes that this matching process creates a diversification benefit. Consequently, the exact market value effect of a change in interest rates will depend on which countries experience interest rate changes and the foreign currency mix of the Company's fixed maturity portfolio at the time of the interest rate changes. See Foreign Currency Risk below.

The impact of an immediate change in interest rates on the fair value of investments exposed to interest rate risk, the Company's total invested assets and shareholders' equity, in both absolute terms and as a percentage of total invested assets and shareholders' equity, has not changed significantly at December 31, 2018 compared to December 31, 2017.

Interest rate movements also affect the economic value of the Company's outstanding debt obligations and preferred securities in the same way that they affect the Company's fixed maturity investments. This can result in a liability whose economic value is different from the carrying value reported in the Consolidated Balance Sheet given the Company records the carrying value of its outstanding debt obligations and preferred securities at the original issued principal amount. For the Company's preferred shares, fair value is based on quoted market prices, while carrying value is based on the aggregate liquidation value of the shares. See Note 3(b) to the Consolidated Financial Statements in Item 18 of this report for further details regarding the fair value of debt.

See also Notes 10 and 11 to Consolidated Financial Statements in Item 18 of this report for further details regarding debt and preferred shares respectively as at December 31, 2018 and 2017 and related changes during the year.

Credit Spread Risk

The Company's fixed maturity portfolio and the fixed maturity securities in the investment portfolio are exposed to credit spread risk. Fluctuations in market credit spreads have a direct impact on the market valuation of these securities. The Company manages credit spread risk by the selection of securities within its fixed maturity portfolio. Changes in credit spreads directly affect the market value of certain fixed maturity securities, but do not necessarily result in a change in the future expected cash flows associated with holding individual securities. Other factors, including liquidity, supply and demand, and changing risk preferences of investors, may affect market credit spreads without any change in the underlying credit quality of the security.

As with interest rates, changes in credit spreads impact the shareholders' equity of the Company as invested assets are carried at fair value, which includes changes in credit spreads. As a result, an increase in credit spreads will result in a decrease in the fair value of the Company's investments and a corresponding decrease, net of applicable taxes, in the Company's shareholders' equity. A decrease in credit spreads would have the opposite effect.

At December 31, 2018 and 2017, the fair value of investments exposed to credit spread risk was $14,131 million and $14,115 million, respectively.

At December 31, 2018, the Company estimates that the hypothetical case of an immediate 100 basis points or 200 basis points parallel shift in global credit spreads would result in a change in the fair value of investments exposed to interest rate risk (as presented in the table above), total invested assets and shareholders' equity as follows (in millions of U.S. dollars):

	-200 Basis Points	% Change	-100 Basis Points	% Change	December 31, 2018	+100 Basis Points	% Change	+200 Basis Points	% Change
Fair value of investments exposed to credit spread risk [1]	$ 14,876	5%	$ 14,504	3%	$ 14,131	$ 13,759	(3)%	$ 13,386	(5)%
Total invested assets [2]	$ 17,128	5%	$ 16,756	2%	$ 16,383	$ 16,011	(2)%	$ 15,638	(5)%
Shareholders' equity	$ 7,262	11%	$ 6,890	6%	$ 6,517	$ 6,145	(6)%	$ 5,772	(11)%

(1) Includes fixed income securities, short term investments, certain other invested assets, certain cash and cash equivalents and funds holding fixed income securities.
(2) Includes total investments, cash and cash equivalents and accrued interest.

The changes above also do not take into account any potential mitigating impact from the taxes, which may offset the economic impact on invested assets.

The impact of an immediate change in credit spreads on the overall fair value of investments exposed to credit spread risk, the Company's total invested assets and shareholders' equity, as a percentage of total invested assets and shareholders' equity has not changed significantly at December 31, 2018 compared to December 31, 2017.

Foreign Currency Risk

Through its multinational reinsurance operations, the Company conducts business in a variety of non-U.S. currencies, with the principal exposures being the Euro, Canadian dollar, Swiss Franc, British pound and Japanese yen. As the Company's reporting currency is the U.S. dollar, foreign exchange rate fluctuations may materially impact the Company's Consolidated Financial Statements.

The Company is generally able to match its liability funds against its net reinsurance liabilities both by currency and duration to protect the Company against foreign exchange and interest rate risks. However, a natural offset does not exist for all currencies. For the non-U.S. dollar currencies for which the Company deems the net asset or liability exposures to be material, the Company employs a hedging strategy utilizing foreign exchange forward contracts and other derivative financial instruments, as appropriate, to reduce exposure and more appropriately match the liability funds by currency. The Company does not hedge currencies for which its asset or liability exposures are not material or where it is unable or impractical to do so. In such cases, the Company is exposed to foreign currency risk. However, the Company does not believe that the foreign currency risks corresponding to these unhedged positions are material, except for those related to the Company's capital funds.

For the Company's capital funds, including its net investment in foreign subsidiaries and branches and equity securities, the Company does not typically employ hedging strategies for certain foreign currencies. From time to time, the Company does enter into net investment hedges to offset foreign exchange volatility (see Liquidity and Capital Resources—Currency in Item 5 of this report). Derivatives are included in Other invested assets in the Consolidated Balance Sheets (see Note 6 to the Consolidated Financial Statements in Item 18 of this report for further details).

The Company's gross and net exposure in its Consolidated Balance Sheets at December 31, 2018 and 2017 to foreign currency as well as the associated foreign currency derivatives the Company has entered into to manage this exposure, was as follows (in millions of U.S. dollars):

December 31, 2018	Euro	CAD	CHF	GBP	JPY[(1)]	Other	Total[(2)]
Total assets	$ 2,805	$ 1,213	$ 23	$ 1,531	$ 309	$ 1,103	$ 6,984
Total liabilities	(3,814)	(396)	(272)	(1,648)	(324)	(1,521)	(7,975)
Total gross foreign currency exposure	$ (1,009)	$ 817	$ (249)	$ (117)	$ (15)	$ (418)	$ (991)
Total derivative amount	—	(807)	—	108	(70)	—	(769)
Net foreign currency exposure	$ (1,009)	$ 10	$ (249)	$ (9)	$ (85)	$ (418)	$ (1,760)
December 31, 2017							
Total assets	$ 2,319	$ 1,415	$ 20	$ 1,509	$ 32	$ 976	$ 6,271
Total liabilities	(4,150)	(507)	(336)	(1,531)	(89)	(1,507)	(8,120)
Total gross foreign currency exposure	$ (1,831)	$ 908	$ (316)	$ (22)	$ (57)	$ (531)	$ (1,849)
Total derivative amount	1,839	(912)	—	67	—	78	1,072
Net foreign currency exposure	$ 8	$ (4)	$ (316)	$ 45	$ (57)	$ (453)	$ (777)

(1) *The JPY exposure as at December 31, 2018 excludes assets of approximately $50 million denominated in U.S. dollars for which the underlying value is linked to JPY.*

(1) *As the U.S. dollar is the Company's reporting currency, there is no currency risk attached to the U.S. dollar and it is excluded from the above tables. The U.S. dollar accounts for the difference between the Company's total foreign currency exposure and the total assets and total liabilities in the Consolidated Balance Sheets at December 31, 2018 and 2017.*

The above numbers include the Company's investment in certain of its subsidiaries, branches and equity method investees, whose functional currencies are the Euro, British pound, and Canadian dollar, and the foreign exchange forward contracts that the Company entered into during the year to hedge a portion of its translation exposure in light of the significant volatility in foreign exchange markets.

At December 31, 2018, the Company's most significant net foreign currency exposure to the Euro presented in the table above reflects the unhedged net investment in its European subsidiaries and branches.

At December 31, 2018, assuming all other variables remain constant and disregarding any tax effects, a change in the U.S. dollar of 10% or 20% relative to all of the other currencies held by the Company simultaneously would result in a change in shareholders' equity of $176 million and $352 million, respectively, inclusive of the effect of foreign exchange forward contracts and other derivative financial instruments.

Counterparty Credit Risk

Investments and Cash

The Company has exposure to credit risk primarily as a holder of fixed maturity securities. The Company controls this exposure by emphasizing investment grade credit quality in the fixed maturity securities it purchases. At December 31, 2018 and 2017, approximately 55% and 52%, respectively, of the Company's fixed maturity portfolio (including the funds-held directly managed account in 2017) was rated AA (or equivalent rating) or better.

At December 31, 2018 and 2017, approximately 74% and 71%, respectively, of the Company's fixed maturity and short-term investments were rated A or better and 4% and 3%, respectively, were rated below investment grade or not rated. The Company believes this high quality concentration reduces its exposure to credit risk on fixed maturity investments to an acceptable level. At December 31, 2018 and 2017, the Company was not exposed to any significant credit concentration risk on its investments, excluding securities issued by the U.S. government which are rated AA+. At December 31, 2018 and 2017, the single largest corporate issuer accounted for less than 4% and 3%, respectively, and the top 10 corporate issuers accounted for less than 21% and 19%, respectively, of the Company's total corporate fixed maturity securities.

The Company keeps cash and cash equivalents in several banks and ensures that there are no significant concentrations of credit risk in any one bank.

Derivatives

To a lesser extent, the Company also has credit risk exposure as a party to foreign exchange forward contracts and other derivative contracts. The Company's investment strategy allows the use of derivative investments, subject to strict limitations. The

Company imposes a high standard for the credit quality of counterparties in all derivative transactions. To mitigate credit risk, the Company monitors its exposure by counterparty, aims to diversify its counterparty credit risk and ensures that counterparties to these contracts are high credit quality international banks or counterparties. These contracts are generally of short duration (approximately 90 days) and settle on a net basis, which means that the Company is exposed to the movement of one currency against the other, as opposed to the notional amount of the contracts. At December 31, 2018 and 2017, the Company's net notional exposure of foreign exchange forward contracts was $2,458 million and $2,863 million, respectively, while the net fair value of those contracts was a $14 million asset position and $12 million liability position at December 31, 2018 and 2017, respectively. See Note 6 to the Consolidated Financial Statements in Item 18 of this report for additional information related to derivatives.

Underwriting Operations

The Company is also exposed to credit risk in its underwriting operations, most notably in the credit/surety line. Loss experience in these lines of business is cyclical and is affected by the general economic environment. The Company provides its clients in these lines of business with protection against credit deterioration, defaults or other types of financial non-performance of or by the underlying credits that are the subject of the protection provided and, accordingly, the Company is exposed to the credit risk of those credits. As with all of the Company's business, these risks are subject to rigorous underwriting and pricing standards. In addition, the Company strives to mitigate the risks associated with these credit-sensitive lines of business through the use of risk management techniques such as risk diversification, careful monitoring of risk aggregations and accumulations and, at times, through the use of retrocessional reinsurance protection and the purchase of credit default swaps and total return and interest rate swaps.

The Company is subject to the credit risk of its cedants in the event of their insolvency or their failure to honor the value of the funds held balances due to the Company for any other reason. However, the Company's credit risk in some jurisdictions is mitigated by a mandatory right of offset of amounts payable by the Company to a cedant against amounts due to the Company. In certain other jurisdictions the Company is able to mitigate this risk, depending on the nature of the funds held arrangements, to the extent that the Company has the contractual ability to offset any shortfall in the payment of the funds held balances with amounts owed by the Company to cedants for losses payable and other amounts contractually due. Funds held balances for which the Company receives an investment return based upon either the results of a pool of assets held by the cedant or the investment return earned by the cedant on its investment portfolio are exposed to counterparty credit risk. The Company is also exposed, to some extent, to the underlying financial market risk of the pool of assets, to the extent the underlying policies may have guaranteed minimum returns on GMDB business.

The Company has exposure to credit risk as it relates to its business written through brokers if any of the Company's brokers are unable to fulfill their contractual obligations with respect to payments to the Company. In addition, in some jurisdictions, if the broker fails to make payments to the insured under the Company's policy, the Company might remain liable to the insured for the deficiency. The Company's exposure to such credit risk is somewhat mitigated in certain jurisdictions by contractual terms. See Note 19 to the Consolidated Financial Statements in Item 18 of this report of this report for information related to two brokers that accounted for 44% and 47%, respectively, of the Company's gross premiums written for the years ended December 31, 2018 and 2017.

The Company has exposure to credit risk as it relates to its reinsurance balances receivable and reinsurance recoverable on paid and unpaid losses.

Reinsurance balances receivable from the Company's cedants at December 31, 2018 and 2017 were $2,977 million and $2,725 million, respectively, including balances both currently due and accrued. The Company believes that credit risk related to these balances is mitigated by several factors, including but not limited to, credit checks performed as part of the underwriting process and monitoring of aged receivable balances. In addition, as the majority of its reinsurance agreements permit the Company the right to offset reinsurance balances receivable from clients against losses payable to them, the Company believes that the credit risk in this area is substantially reduced. Provisions are made for amounts considered potentially uncollectible and the allowance for uncollectible premiums receivable was $5 million at December 31, 2018 and 2017.

The Company purchases retrocessional reinsurance and requires its reinsurers to have adequate financial strength. The Company evaluates the financial condition of its reinsurers and monitors its concentration of credit risk on an ongoing basis. Provisions are made for amounts considered potentially uncollectible. At December 31, 2018 and 2017, the balance of reinsurance recoverable on paid and unpaid non-life and life reserves was $863 million and $729 million respectively, which is net of the allowance provided for uncollectible reinsurance recoverables of $0 million in both years. At December 31, 2018 and 2017, 33% and 37%, respectively, of the Company's reinsurance recoverable on paid and unpaid non-life and life reserves were either due from reinsurers with an A- or better rating from Standard & Poor's, and the remaining 67% and 63%, respectively, was collateralized. See Liquidity and Capital Resources—Reinsurance Recoverable on Paid and Unpaid Losses in Item 5 of this report for details of the Company's reinsurance recoverable on paid and unpaid losses categorized by the reinsurer's Standard & Poor's rating.

Other than the items discussed above, the concentrations of the Company's counterparty credit risk exposures have not changed materially at December 31, 2018 compared to December 31, 2017.

Equity Price Risk

The Company invests a portion of its capital funds in public equity securities. At December 31, 2018 and 2017, the fair market value of these securities was $640 million and $632 million, respectively, excluding funds holding fixed income securities of $54 million and $7 million at December 31, 2018 and 2017, respectively. These equity investments are primarily mutual funds and exchange traded funds and are exposed to equity price risk, defined as the potential for loss in market value due to a decline in equity prices. The Company believes that the effects of diversification and the relatively small size of its investments in equities relative to total invested assets mitigate its exposure to equity price risk. At December 31, 2018, the Company estimates that a 10% and 20% movement in the S&P 500 Index would result in a change in the fair value of the Company's public equity portfolio, total invested assets and shareholders' equity by $30 million and $61 million, respectively. This change does not take into account any potential mitigating impact from the fixed maturity securities or taxes.

Real Estate Price Risk

The Company invests a portion of its capital funds in real estate assets either through direct investment or through investments in variable interest entities that hold underlying real estate assets as follows:

- Investments in real estate with a carrying value of $73 million and $83 million at December 31, 2018 and 2017, respectively, recorded in the Consolidated Balance Sheets
- Equity method investment in Almacantar with a carrying value of $498 million and $538 million at December 31, 2018 and 2017, respectively, recorded in Other invested assets in the Consolidated Balance Sheets
- Investments in limited partnerships with underlying real estate assets with a fair value of $48 million and $16 million at December 31, 2018 and 2017, respectively, recorded in Other invested assets in the Consolidated Balance Sheets.

These investments are exposed to real estate market price risk, defined as the potential for loss in market value due to a decline in real estate prices. The Company believes that the effects of diversification and the relatively small size of its investments in real estate assets relative to total invested assets mitigate its exposure to real estate price risk. At December 31, 2018, the Company estimates that a 10% and 20% movement in comparable real estate prices would result in a change in the total carrying value of $618 million of the Company's real estate asset investments referred to above, total invested assets, and shareholders' equity by $62 million and $124 million, respectively. This change does not take into account any potential mitigating impact from taxes.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not applicable.

PART II

ITEM 13. DEFAULTS, DIVIDENDS ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

The Company carried out an evaluation, under the supervision and with the participation of management, including the CEO and CFO, as of December 31, 2018, of the effectiveness of the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based upon that evaluation, the CEO and CFO concluded that, as of December 31, 2018, the disclosure controls and procedures are effective such that information required to be disclosed by the Company in reports that it files or submits pursuant to the Securities 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 Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is designed to provide reasonable assurance regarding the preparation of financial statements for external purposes in accordance with U.S. GAAP.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect material misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has assessed the effectiveness of internal control over financial reporting as of December 31, 2018. 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 our assessment and those criteria, management believes that the Company maintained effective internal control over financial reporting as of December 31, 2018.

Changes in Internal Control over Financial Reporting

There have been no changes in the Company's internal control over financial reporting that occurred during the year ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal controls over financial reporting.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

The Company's Board has determined that Ms. Mary Ann Brown is an independent director and audit committee financial expert in accordance with the NYSE listing rules.

ITEM 16B. CODE OF ETHICS

The Board of PartnerRe has adopted the Code of Business Conduct and Ethics, which applies to all directors, officers and employees. Any specific waiver of its provisions requires the approval of the Audit Committee. Any waiver required to be publicly disclosed will be posted on our website at www.partnerre.com within four business days of such waiver being granted. During fiscal 2018, there were minor updates and revisions to the Code of Business Conduct and Ethics and no disclosable waivers. Any violation to the Code of Business Conduct and Ethics will be investigated and may result in disciplinary action, as appropriate.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The Audit Committee is directly responsible for the appointment, retention, compensation and oversight of the work of the Company's independent registered public accounting firm. The Audit Committee also pre-approves the audit services and non-audit services to be provided, including the fees for such services, before the public accounting firm is engaged to render such services. The Audit Committee may delegate the authority to grant such approval to one or more designated members of the Audit Committee, provided that the decisions of any member to whom authority is delegated shall be presented to the full Audit Committee at its next meeting. The Audit Committee has sole authority to approve all audit fees and terms. All services of Ernst & Young Ltd. and their respective affiliates (collectively, EY) were pre-approved by the Audit Committee.

During 2018, the Audit Committee had two meetings and three informational calls to discuss the Company's quarterly results as well as to receive updates on legal matters, matters relating to internal and external auditors, and other matters as deemed necessary. The meetings and informational calls were conducted to encourage communication among the members of the Audit Committee, management, the internal auditors and EY. The Audit Committee also discussed with EY the overall scope and plans for EY's audits and the results of such audits. The Audit Committee met with representatives from EY, both with and without management present.

The following table presents fees for professional services rendered by the independent auditors for the years ended December 31, 2018 and 2017 (in U.S. dollars):

	2018	2017
Audit Fees[(1)]	**$ 5,021,071**	$ 4,949,268
Audit-Related Fees[(2)]	**70,995**	82,095
Tax Fees[(3)]	**—**	507,000
Total	**$ 5,092,066**	$ 5,538,363

(1) For the years ended December 31, 2018 and 2017, audit fees relate to professional services rendered by EY for the audit of the Company's annual financial statements and other audit services provided in connection with statutory and regulatory filings.

(2) Audit-related fees are fees for services performed that are reasonably related to the performance of the audit or review of the Company's financial statements but are not described in (1) above. Audit-related fees were for services performed by EY related to employee benefit plan audits of $60,995 and $72,095 for the years ended December 31, 2018 and 2017, respectively, and agreed upon procedures related to one of the Company's regulated branches for $10,000 in both 2018 and 2017.

(3) Tax fees in 2017 related to services performed by Ernst & Young entities for annual U.S. tax preparation, compliance and filing assistance and certain on-going projects (including on-call advisory).

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

None.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

None.

ITEM 16G. CORPORATE GOVERNANCE

Pursuant to exemptions available under the NYSE listing standards, as PartnerRe is a foreign private issuer and a controlled company with no common shares listed, we are not required to comply with all of the corporate governance practices followed by U.S. domestic filer companies under the NYSE listing standards. Below is a summary of the significant differences between our corporate governance practices and the NYSE standards applicable to listed U.S. companies that are domestic filers:

- Nominating/Corporate Governance Committee: The NYSE requires that listed companies must have a nominating/corporate governance committee composed entirely of independent directors and a committee charter detailing the committee's purpose and responsibilities and an annual performance evaluation of the committee. Under Bermuda law and our Bye-Laws as well as the NYSE exemptions applicable to controlled companies, we are not required to have, and do not have, a separate nominating or corporate governance committee; instead, that function is filled by our full Board.

- Compensation Committee: The NYSE requires that listed companies must have a compensation committee composed entirely of independent directors and a committee charter detailing the committee's purpose and responsibilities, an annual performance evaluation of the committee and the rights and responsibilities of the committee with respect to retaining or obtaining advice from an independent adviser. Under Bermuda law and our Bye-Laws, as well as the NYSE exemptions applicable to controlled companies, we are not required to have, and do not have, a separate compensation committee; instead, that function is filled by our full Board.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

See Item 18 of this report.

ITEM 18. FINANCIAL STATEMENTS

PartnerRe Ltd.
Consolidated Balance Sheets
(Expressed in thousands of U.S. dollars, except parenthetical share data)

	December 31, 2018	December 31, 2017
Assets		
Investments:		
Fixed maturities, at fair value (amortized cost: 2018, $12,627,921; 2017, $12,480,569)	**$ 12,639,845**	$ 12,654,859
Short-term investments, at fair value (amortized cost: 2018, $495,050; 2017, $4,394)	**493,726**	4,400
Equities, at fair value (cost: 2018, $621,312; 2017, $567,848)	**694,301**	638,596
Investments in real estate	**72,573**	83,098
Other invested assets	**1,488,995**	1,385,258
Total investments	**15,389,440**	14,766,211
Funds held–directly managed (cost: 2017, $429,326)	**—**	424,765
Cash and cash equivalents	**877,907**	1,772,012
Accrued investment income	**115,735**	120,805
Reinsurance balances receivable	**2,976,644**	2,724,844
Reinsurance recoverable on paid and unpaid losses	**940,291**	828,807
Funds held by reinsured companies	**829,695**	801,451
Deferred acquisition costs	**743,046**	672,307
Deposit assets	**80,661**	78,542
Net tax assets	**157,690**	133,169
Goodwill	**456,380**	456,380
Intangible assets	**128,899**	160,234
Other assets	**63,506**	41,237
Total assets	**$ 22,759,894**	$ 22,980,764
Liabilities		
Non-life reserves[(1)]	**$ 9,895,376**	$ 10,102,172
Life and health reserves[(1)]	**2,198,080**	2,098,759
Unearned premiums	**2,072,953**	1,818,999
Other reinsurance balances payable	**281,744**	292,077
Deposit liabilities	**7,172**	10,864
Net tax liabilities	**101,525**	154,947
Accounts payable, accrued expenses and other	**266,524**	302,021
Debt related to senior notes	**1,349,017**	1,384,824
Debt related to capital efficient notes	**70,989**	70,989
Total liabilities	**16,243,380**	16,235,652
Shareholders' Equity		
Common shares (par value $0.00000001; issued and outstanding: 100,000,000 shares)	**—**	—
Preferred shares (par value $1.00; issued and outstanding: 28,169,062 shares; aggregate liquidation value: $704,227)	**28,169**	28,169
Additional paid-in capital	**2,396,530**	2,396,530
Accumulated other comprehensive loss	**(138,634)**	(90,281)
Retained earnings	**4,230,449**	4,410,694
Total shareholders' equity	**6,516,514**	6,745,112
Total liabilities and shareholders' equity	**$ 22,759,894**	$ 22,980,764

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(1) Effective July 1, 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, reserves of $392 million as at December 31, 2017 have been reclassified from Life and Health reserves to Non-Life reserves to conform to current presentation.

See accompanying Notes to Consolidated Financial Statements.

PartnerRe Ltd.
Consolidated Statements of Operations and Comprehensive (Loss) Income
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	**December 31, 2017**	**December 31, 2016**
Revenues			
Gross premiums written	**$ 6,299,929**	$ 5,587,894	$ 5,356,942
Net premiums written	**$ 5,803,364**	$ 5,119,926	$ 4,953,470
(Increase) decrease in unearned premiums	**(289,554)**	(94,945)	16,126
Net premiums earned	**5,513,810**	5,024,981	4,969,596
Net investment income	**415,921**	402,071	410,864
Net realized and unrealized investment (losses) gains	**(389,632)**	232,491	26,266
Other income	**50,127**	15,242	15,232
Total revenues	**5,590,226**	5,674,785	5,421,958
Expenses			
Losses and loss expenses	**4,193,255**	3,840,982	3,248,091
Acquisition costs	**1,237,464**	1,119,773	1,186,602
Other expenses	**305,568**	348,398	471,905
Interest expense	**43,152**	42,500	48,603
Loss on redemption of debt	**—**	1,566	22,203
Amortization of intangible assets	**35,473**	24,646	25,919
Net foreign exchange (gains) losses	**(119,151)**	108,244	(77,515)
Total expenses	**5,695,761**	5,486,109	4,925,808
(Loss) income before taxes and interest in earnings (losses) of equity method investments	**(105,535)**	188,676	496,150
Income tax (benefit) expense	**(8,934)**	10,358	25,923
Interest in earnings (losses) of equity method investments	**10,607**	85,703	(22,919)
Net (loss) income	**(85,994)**	264,021	447,308
Preferred dividends	**46,416**	46,416	55,043
Loss on redemption of preferred shares	**—**	—	4,908
Net (loss) income attributable to common shareholder	**$ (132,410)**	$ 217,605	$ 387,357
Comprehensive (loss) income			
Net (loss) income	**$ (85,994)**	$ 264,021	$ 447,308
Change in currency translation adjustment	**(74,797)**	(15,135)	12,202
Change in unfunded pension obligation, net of tax	**24,859**	(274)	(1,909)
Change in fair value of designated cash flow hedges	**1,877**	—	—
Change in unrealized gains or losses on investments, net of tax	**(292)**	(303)	(1,579)
Other comprehensive (loss) income	**(48,353)**	(15,712)	8,714
Comprehensive (loss) income	**$ (134,347)**	$ 248,309	$ 456,022

In March 2016, the Company's common shares were acquired by Exor N.V. and are no longer traded on the NYSE. As such, earnings per share data is not meaningful to present.

See accompanying Notes to Consolidated Financial Statements.

PartnerRe Ltd.
Consolidated Statements of Shareholders' Equity
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	**December 31, 2017**	**December 31, 2016**
Common shares			
Balance at beginning of year	**$ —**	$ —	$ 87,237
Cancellation of treasury shares	**—**	—	(39,082)
Cancellation of outstanding common shares	**—**	—	(48,155)
Balance at end of year	**—**	—	—
Preferred shares			
Balance at beginning of year	**28,169**	28,169	34,150
Redemption of preferred shares	**—**	—	(5,981)
Balance at end of year	**28,169**	28,169	28,169
Additional paid-in capital			
Balance at beginning of year	**2,396,530**	2,396,530	3,982,147
Stock compensation expense, net of taxes paid	**—**	—	48,731
Reissuance of common shares	**—**	—	(2,193)
Cancellation of treasury shares	**—**	—	(1,466,363)
Cancellation of outstanding common shares	**—**	—	48,155
Settlement of stock options and SSARs	**—**	—	(75,311)
Redemption of preferred shares	**—**	—	(138,636)
Balance at end of year	**2,396,530**	2,396,530	2,396,530
Accumulated other comprehensive loss			
Balance at beginning of year	**(90,281)**	(74,569)	(83,283)
Currency translation adjustment			
Balance at beginning of year	**(56,903)**	(41,768)	(53,970)
Change in foreign currency translation adjustment	**(74,797)**	(15,135)	6,175
De-designated net investment hedge	**—**	—	6,027
Change in currency translation adjustment	**(74,797)**	(15,135)	12,202
Balance at end of year	**(131,700)**	(56,903)	(41,768)
Unfunded pension obligation			
Balance at beginning of year	**(34,044)**	(33,770)	(31,861)
Change in unfunded pension obligation, net of tax	**24,859**	(274)	(1,909)
Balance at end of year (net of tax: 2018, $2,479; 2017, $9,744; 2016, $9,512)	**(9,185)**	(34,044)	(33,770)
Unrealized gain on investments			
Balance at beginning of year	**666**	969	2,548
Change in fair value of designated cash flow hedge	**1,877**	—	—
Change in unrealized losses on investments, net of tax	**(292)**	(303)	(1,579)
Balance at end of year (net of tax: 2018, 2017 and 2016: $nil)	**2,251**	666	969
Balance at end of year	**(138,634)**	(90,281)	(74,569)
Retained earnings			
Balance at beginning of year	**4,410,694**	4,337,782	6,146,802
Net (loss) income	**(85,994)**	264,021	447,308
Reissuance of common shares	**—**	—	(17,229)
Cancellation of treasury shares	**—**	—	(1,742,718)
Dividends on common shares	**(47,835)**	(144,693)	(436,430)
Dividends on preferred shares	**(46,416)**	(46,416)	(55,043)
Loss on redemption of preferred shares	**—**	—	(4,908)
Balance at end of year	**4,230,449**	4,410,694	4,337,782

PartnerRe Ltd.
Consolidated Statements of Shareholders' Equity
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	**December 31, 2017**	**December 31, 2016**
Common shares held in treasury			
Balance at beginning of year	**—**	—	(3,266,552)
Reissuance of common shares	**—**	—	18,390
Cancellation of treasury shares	**—**	—	3,248,162
Balance at end of year	**—**	—	—
Total shareholders' equity	**$ 6,516,514**	$ 6,745,112	$ 6,687,912

See accompanying Notes to Consolidated Financial Statements.

PartnerRe Ltd.
Consolidated Statements of Cash Flows
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	December 31, 2017	December 31, 2016
Cash flows from operating activities			
Net (loss) income	**$ (85,994)**	$ 264,021	$ 447,308
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Amortization of net premium on investments	**52,495**	69,080	96,402
Amortization of intangible assets	**35,473**	24,646	25,919
Net realized and unrealized investment losses (gains)	**389,632**	(232,491)	(26,266)
Changes in:			
Reinsurance balances, net	**(427,220)**	(84,767)	(95,737)
Reinsurance recoverable on paid and unpaid losses, net of ceded premiums payable	**(98,086)**	(481,173)	(46,235)
Funds held by reinsured companies and funds held–directly managed	**(23,483)**	47,383	(59,069)
Deferred acquisition costs	**(98,475)**	(34,822)	2,000
Net tax assets and liabilities	**(82,247)**	42,337	(135,153)
Non-life and life and health reserves	**637,652**	571,907	214,071
Unearned premiums	**289,554**	94,945	(16,126)
Other net changes in operating assets and liabilities	**(141,808)**	(38,190)	38,195
Net cash provided by operating activities	**447,493**	242,876	445,309
Cash flows from investing activities			
Sales of fixed maturities	**14,665,938**	12,524,296	12,404,085
Redemptions of fixed maturities	**494,148**	572,638	595,381
Purchases of fixed maturities	**(15,638,777)**	(12,465,127)	(12,704,275)
Sales and redemptions of short-term investments	**247,843**	169,555	148,665
Purchases of short-term investments	**(733,431)**	(143,859)	(124,079)
Sales of equities	**89,349**	16,232	402,481
Purchases of equities	**(218,751)**	(275,928)	(7,119)
Consideration paid to acquire Aurigen, net of cash acquired	**—**	(233,233)	—
Other, net	**(167,230)**	(65,753)	(749,194)
Net cash (used in) provided by investing activities	**(1,260,911)**	98,821	(34,055)
Cash flows from financing activities			
Dividends paid to common and preferred shareholders	**(94,251)**	(191,109)	(491,473)
Settlement of share-based awards upon change in control	**—**	—	(75,531)
Issuance of unrestricted Class B common shares[(1)]	**—**	11,000	—
Reissuance of treasury shares, net of taxes	**—**	—	10,965
Redemption of preferred shares	**—**	—	(149,523)
Issuance of senior notes	**—**	—	824,002
Redemption of debt	**—**	(207,130)	(271,961)
Net cash used in financing activities	**(94,251)**	(387,239)	(153,521)
Effect of foreign exchange rate changes on cash	**13,564**	44,226	(61,502)
(Decrease) increase in cash and cash equivalents	**(894,105)**	(1,316)	196,231
Cash and cash equivalents—beginning of year	**1,772,012**	1,773,328	1,577,097
Cash and cash equivalents—end of year	**$ 877,907**	$ 1,772,012	$ 1,773,328
Supplemental cash flow information:			
Taxes paid	**$ 139,543**	$ 66,228	$ 188,650
Interest paid	**$ 41,551**	$ 40,989	$ 46,417

(1) Class B shares are recorded as a liability on the Company's Consolidated Balance Sheet. See Note 14 for further details.

See accompanying Notes to Consolidated Financial Statements.

PartnerRe Ltd.
Notes to Consolidated Financial Statements

1. Organization

PartnerRe Ltd. provides reinsurance on a worldwide basis through its principal wholly-owned subsidiaries, including Partner Reinsurance Company Ltd. (PartnerRe Bermuda), Partner Reinsurance Europe SE (PartnerRe Europe), Partner Reinsurance Company of the U.S. (PartnerRe U.S.) and Partner Reinsurance Asia Pte. Ltd. (PartnerRe Asia). Non-life risks reinsured include agriculture, aviation/space, casualty, catastrophe, energy, engineering, financial risks, marine, motor, multiline, property and U.S. health. Life and health risks include mortality, morbidity, longevity, and non-U.S. health. Reinsurance of alternative risk products include weather and credit protection to financial, industrial and service companies on a worldwide basis.

PartnerRe Ltd. and it subsidiaries are collectively referred to hereinafter as PartnerRe or the Company.

The Company was incorporated in August 1993 under the laws of Bermuda. The Company commenced operations in November 1993 upon completion of the sale of common shares and warrants pursuant to subscription agreements and an initial public offering.

The Company completed the acquisition of Societe Anonyme Francaise de Reassurances (SAFR, subsequently renamed PartnerRe SA and reinsurance business transferred into PartnerRe Europe) in 1997, the acquisition of Winterthur Re in 1998, the acquisition of PARIS RE Holdings Limited (Paris Re) in 2009 and the acquisition of Presidio Reinsurance Group, Inc. (Presidio) in 2012.

On March 18, 2016, following receipt of regulatory approvals, the Company's publicly held common shares were acquired by Exor N.V., a subsidiary of EXOR S.p.A., one of Europe’s leading investment companies controlled by the Agnelli family. In October 2016, Exor N.V. changed its name to EXOR Nederland N.V. In December 2016, EXOR S.p.A. merged with and into EXOR HOLDING N.V., a newly formed entity organized in the Netherlands and, in conjunction with the merger, EXOR HOLDING N.V. changed its name to EXOR N.V. EXOR N.V. is listed on the Milan Stock Exchange.

As a result of the acquisition, PartnerRe's publicly issued common shares were cancelled and are no longer traded on the NYSE. The Company’s preferred shares continue to be traded on the NYSE.

At December 31, 2018 and 2017, the Company's 100 million common shares (Class A shares) issued to EXOR Nederland N.V. (see Note 11) are included in Shareholders' Equity in the Consolidated Balance Sheets. At December 31, 2018 and 2017, the Company also has 345,644 and 255,492, respectively, of Class B shares issued to certain executives of the Company (see Note 14) which are recognized in Accounts payable, accrued expenses and other in the Consolidated Balance Sheets. The percentage of total common shares owned by EXOR Nederland N.V. at December 31, 2018 and 2017 was approximately 99.7%.

On April 3, 2017, the Company completed the acquisition of 100% of the outstanding ordinary shares of Aurigen Capital Limited (Aurigen), a North American life reinsurance company. This acquisition enables the Company to expand its life reinsurance footprint in Canada and the U.S. with limited overlap in market coverage.

2. Significant Accounting Policies

The Company’s Consolidated Financial Statements have been prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP). The Consolidated Financial Statements include the accounts of the Company and its subsidiaries. Intercompany accounts and transactions have been eliminated.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of 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:

- Non-life reserves;
- Life and health reserves;
- Gross and net premiums written and net premiums earned;
- Recoverability of deferred acquisition costs;
- Recoverability of deferred tax assets;
- Valuation of certain investments that are measured using significant unobservable inputs; and

- Valuation of goodwill and intangible assets.

The following are the Company's significant accounting policies:

(a) Premiums

Gross premiums written and earned are based upon reports received from ceding companies, supplemented by the Company's own estimates of premiums written and earned for which ceding company reports have not been received. The determination of premium estimates requires a review of the Company's experience with cedants, familiarity with each market, an understanding of the characteristics of each line of business and management's assessment of the impact of various other factors on the volume of business written and ceded to the Company. Premium estimates are updated as new information is received from cedants and differences between such estimates and actual amounts are recorded in the period in which the estimates are changed or the actual amounts are determined. Net premiums written and earned are presented net of ceded premiums, which represent the cost of retrocessional protection purchased by the Company. Premiums are earned on a basis that is consistent with the risks covered under the terms of the reinsurance contracts, which is generally one to two years. Reinstatement premiums are recognized as written and earned at the time a loss event occurs, where coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. The accrual of reinstatement premiums is based on management's estimate of losses and loss expenses associated with the loss event. Unearned premiums represent the portion of premiums written which is applicable to the unexpired risks under contracts in force.

Premiums related to individual life and annuity business are recorded over the premium-paying period on the underlying policies. Premiums on contracts for which there is no significant mortality or critical illness risk are accounted for in a manner consistent with accounting for interest-bearing financial instruments and are not reported as revenues, but rather as direct deposits to the contract. Amounts assessed against annuity and universal life policyholders are recognized as revenue in the period assessed.

(b) Losses and Loss Expenses

The reserves for non-life business include amounts determined from loss reports on individual treaties (case reserves), additional case reserves when the Company's loss estimate is higher than reported by the cedants (ACRs) and amounts for losses incurred but not yet reported to the Company (IBNR). Such reserves are estimated by management based upon reports received from ceding companies, supplemented by the Company's own actuarial estimates of reserves for which ceding company reports have not been received, and based on the Company's own historical experience. To the extent that the Company's own historical experience is inadequate for estimating reserves, such estimates may be determined based upon industry experience and management's judgment. The estimates are continually reviewed and the ultimate liability may be in excess of, or less than, the amounts provided. Any adjustments are reflected in the periods in which they are determined, which may affect the Company's operating results in future periods.

The life and health reserves have been established based upon information reported by ceding companies, supplemented by the Company's actuarial estimates, which for life include mortality, morbidity, critical illness, persistency and future investment income, with appropriate provision to reflect uncertainty. For traditional long-duration contracts, the assumptions are locked in at contract inception and modified if the Company deems the reserves to be inadequate. Future policy benefit reserves for annuity and universal life contracts are carried at their accumulated values. Reserves for policy claims and benefits include both mortality, morbidity and critical illness claims in the process of settlement, and claims that have been incurred but not yet reported.

The Company purchases retrocessional contracts to reduce its exposure to risk of losses on reinsurance assumed. Reinsurance recoverable on paid and unpaid losses involves actuarial estimates consistent with those used to establish the associated liabilities for non-life and life and health reserves.

(c) Deferred Acquisition Costs

Acquisition costs, comprising incremental brokerage fees, commissions and excise taxes, which vary directly with, and are related to, the acquisition of reinsurance contracts, are capitalized and charged to expense as the related premium is earned. All other acquisition related costs, including indirect costs, are expensed as incurred.

Acquisition costs related to individual life and annuity contracts are deferred and amortized over the premium-paying periods in proportion to anticipated premium income, allowing for lapses, terminations and anticipated investment income. Acquisition costs related to universal life and single premium annuity contracts for which there is no significant mortality or critical illness risk are deferred and amortized over the lives of the contracts as a percentage of the estimated gross profits expected to be realized on the contracts.

The Company establishes a premium deficiency reserve to the extent the deferred acquisition costs are insufficient to cover the excess of expected losses and loss expenses, settlement costs and deferred acquisition costs over the related unearned premiums.

Actual and anticipated losses and loss expenses, other costs, and investment income related to underlying premiums are considered in determining the recoverability of deferred acquisition costs for the Company's short-duration contracts. Actual and anticipated loss experience, together with the present value of future gross premiums, the present value of future benefits, and settlement and maintenance costs are considered in determining the recoverability of deferred acquisition costs related to the Company's Life business.

(d) Funds Held by Reinsured Companies (Cedants)

The Company writes certain business on a funds held basis. Under such contractual arrangements, the cedant retains the premiums that would have otherwise been paid to the Company and the Company is credited with investment income on these funds. The Company generally earns investment income on the funds held balances based upon a predetermined interest rate, either fixed contractually at the inception of the contract or based upon a recognized index (e.g. LIBOR). However, in certain circumstances, the Company may receive an investment return based upon either the result of a pool of assets held by the cedant, generally used to collateralize the funds held balance, or the investment return earned by the cedant on its entire investment portfolio. In these arrangements, gross investment returns are typically reflected in net investment income with a corresponding increase or decrease (net of a spread) being recorded in losses and loss expenses in the Company's Consolidated Statements of Operations. In these arrangements, the Company is exposed, to a limited extent, to the underlying credit risk of the pool of assets inasmuch as the underlying life policies may have guaranteed minimum returns. In such cases, an embedded derivative exists and its fair value is recorded by the Company as an increase or decrease to the funds held balance.

(e) Deposit Assets and Liabilities

In the normal course of its operations, the Company writes certain contracts that do not meet the risk transfer provisions of U.S. GAAP. While these contracts do not meet risk transfer provisions for accounting purposes, there is a remote possibility that the Company will suffer a loss. The Company accounts for these contracts using the deposit accounting method, originally recording deposit liabilities for an amount equivalent to the consideration received. The difference between the consideration received or paid and the estimated liability for unpaid losses is determined upon entering into the contract and, if a loss, recognized into income immediately, and if a gain, the gain is deferred and earned over the expected settlement period of the contract, with the unearned portion recorded as a component of deposit liabilities. Actuarial studies are used to estimate the liabilities under these contracts and the appropriate accretion rates to increase or decrease the liabilities over the term of the contracts. The change in the estimated liability for the period is recorded in Other income or loss in the Consolidated Statements of Operations.

Under some of these contracts, cedants retain the assets on a funds-held basis. In those cases, the Company records those assets as deposit assets and records the related income in net investment income in the Consolidated Statements of Operations.

(f) Investments

The Company elects the fair value option for Fixed maturities and Equities with changes in fair value recorded in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations.

The Company recognizes Other invested assets at fair value (except for those that are accounted for using the equity method of accounting). Other invested assets consist of equity investments in non-publicly traded companies; privately placed corporate loans, notes and loans receivable and notes securitization; and derivative financial instruments. Non-publicly traded entities in which the Company has significant influence, including an ownership of more than 20% and less than 50% of the voting rights, and limited partnerships in which the Company has more than a minor interest (typically more than 3 to 5%), are accounted for using either the equity method or the fair value option. Where the equity method is used, the Company's share of profits or losses of the investee are recorded in Interest in earnings or losses of equity method investees in the Consolidated Statements of Operations. Where the fair value option is elected, the investment is recognized in the Consolidated Balance Sheets at fair value with changes in fair value recorded in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations. See Note 2(n) below for significant accounting policy for derivatives.

Short-term investments, which comprise securities with a maturity greater than three months but less than one year from the date of purchase, are recorded at fair value by electing either the fair value option with changes in fair value recorded in Net realized and unrealized gains or losses included in the Consolidated Statements of Operations or by designating as available-for-sale with changes in fair value recorded in Other comprehensive income or loss.

Investments in real estate are recorded at cost less any write down for impairment, where applicable. Real estate assets held for investment are reviewed for impairment at least annually, or more frequently when events or changes in circumstances indicate the carrying value may not be recoverable and exceeds its estimated fair value.

Net investment income includes interest and dividend income, amortization of premiums and discounts on fixed maturities and short-term investments, and is net of investment expenses and withholding taxes. Investment income is recognized when earned

and accrued to the balance sheet date. Realized gains or losses on the disposal of investments are determined on a first-in, first-out basis. Investment purchases and sales are recorded on a trade-date basis.

The Company defines fair value as the price received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company measures the fair value of financial instruments according to a fair value hierarchy that prioritizes the information used to measure fair value into three broad levels. The Company's policy is to recognize transfers between the hierarchy levels at the beginning of the period. The valuation techniques used by the Company are generally commensurate with standard valuation techniques for each asset class (see Note 3).

(g) Funds Held–Directly Managed

The Company elected the fair value option for substantially all of the fixed maturities, short-term investments and certain other invested assets in the segregated investment portfolio underlying the funds held–directly managed account. The changes in fair value and the realized gains or losses related to the segregated investment portfolio underlying the funds held–directly managed account were recorded in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations. The funds were settled prior to December 31, 2018 as a result of a commutation of the related business (see Notes 3, 4 and 5).

(h) Cash and Cash Equivalents

Cash equivalents are carried at fair value and include fixed income securities that, from the date of purchase, have a maturity of three months or less.

(i) Business Combinations

The Company accounts for transactions in which it obtains control over one or more businesses using the acquisition method. The purchase price is allocated to identifiable assets and liabilities, including any intangible assets, based on their estimated fair value at the acquisition date. The estimates of fair values for assets and liabilities acquired are determined based on various market and income analyses and appraisals. Any excess of the purchase price over the fair value of net assets acquired is recorded as goodwill in the Company's Consolidated Balance Sheets, while any excess of the fair value of net assets acquired over the purchase price is recorded as a gain in the Consolidated Statements of Operations. All costs associated with an acquisition are expensed as incurred.

(j) Goodwill

Goodwill represents the excess of the purchase price over the fair value of the net assets acquired in a business combination. The Company assesses the appropriateness of its valuation of goodwill on at least an annual basis (as at December 31) or more frequently if events or changes in circumstances indicate that the carrying amount may not be recoverable. If, as a result of the assessment, the Company determines that the value of its goodwill is impaired, goodwill will be written down in the period in which the determination is made.

(k) Intangible Assets

Intangible assets represent the fair value adjustments related to non-life reserves, renewal rights, and customer relationships; value of life business acquired; and U.S. licenses arising from acquisitions. Definite-lived intangible assets are amortized over their useful lives and the amortization expense is recorded in the Consolidated Statement of Operations. Indefinite-lived intangible assets are not subject to amortization. The carrying values of indefinite-lived intangible assets are reviewed for indicators of impairment on at least an annual basis (as at December 31) or more frequently if events or changes in circumstances indicate that impairment may exist. Impairment is recognized if the carrying values of the intangible assets are not recoverable from their undiscounted cash flows and is measured as the difference between the carrying value and the fair value.

(l) 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 loss or, in certain cases, to accumulated other comprehensive income or loss, based upon 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 management's assessment indicates that it is more likely than not that deferred tax assets will not be realized, a valuation allowance is recorded against the deferred tax assets.

The Company recognizes a tax benefit relating to uncertain tax positions only where the position is more likely than not to be sustained assuming examination by tax authorities. A liability is recognized for any tax benefit (along with any interest and penalty,

if applicable) claimed in a tax return in excess of the amount recognized in the financial statements under U.S. GAAP. Any changes in amounts recognized are recorded in the period in which they are determined.

(m) Translation of Foreign Currencies

The reporting currency of the Company is the U.S. dollar. The national currencies of the Company's subsidiaries and branches are generally their functional currencies, except for the Company's Bermuda subsidiaries, its Swiss branch and its Singapore subsidiary and branches, whose functional currency is the U.S. dollar. In translating the financial statements of those subsidiaries or branches whose functional currency is other than the U.S. dollar, assets and liabilities are converted into U.S. dollars using the rates of exchange in effect at the balance sheet dates, and revenues and expenses are converted using the average foreign exchange rates for the period. The effect of translation adjustments are reported in the Consolidated Balance Sheets as Currency translation adjustment, a separate component of Accumulated other comprehensive income or loss. The change in currency translation adjustment is reflected in Other comprehensive income or loss.

In recording foreign currency transactions, revenue and expense items are converted into the functional currency at the average rates of exchange for the period. Assets and liabilities originating in currencies other than the functional currency are translated into the functional currency at the rates of exchange in effect at the balance sheet dates. The resulting foreign exchange transaction gains or losses are included in Net foreign exchange gains or losses in the Consolidated Statements of Operations.

(n) Derivatives

The Company's investment strategy allows for the use of derivative instruments, subject to strict limitations. The Company may use derivative financial instruments such as foreign exchange forward contracts, foreign currency option contracts, futures contracts, to-be-announced mortgage-backed securities (TBAs) and credit default swaps for the purpose of managing overall currency risk, market exposures and portfolio duration, for hedging certain investments, or for enhancing investment performance that would be allowed under the Company's investment policy if implemented in other ways.

On the date the Company enters into a derivative contract, management determines whether or not the derivative is to be used and designated as a hedge of an identified underlying risk exposure (a designated hedge). The Company's derivative instruments are recorded in Other invested assets in the Consolidated Balance Sheets at fair value, with gains and losses associated with changes in fair value recognized in either Net realized and unrealized investment gains or losses or Net foreign exchange gains or losses in the Consolidated Statements of Operations, or in Other comprehensive income, depending on the nature and designation of the derivative instrument, as described below (see also Note 6).

The Company has entered into derivatives, in the form of foreign exchange forward contracts, designated as a highly effective hedge of the foreign exchange rate risk exposure related to certain short-term investments which are foreign currency denominated debt securities purchased in December 2018. The hedged assets were designated as available-for-sale with changes in fair value recorded in Change in unrealized gains or losses on investments, net of tax, within Other comprehensive income. The changes in fair value of the designated hedges are recorded in Change in fair value of designated cash flow hedges within Other comprehensive income.

The Company enters from time to time into insurance-linked securities, including weather and longevity related transactions, structured as derivatives, which are recorded at fair value with the changes in fair value reported in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations.

The Company also enters from time to time into total return and interest rate swaps. Margins related to these swaps are included in Other income or loss in the Consolidated Statements of Operations and any changes in the fair value of the swaps are included in Net realized and unrealized investment gains or losses in the Consolidated Statements of Operations.

Other than the designated cash flow hedge referred to above, for the remaining derivatives employed by the Company to address foreign currency risk exposure related to fixed income securities, and for other reinsurance assets and liabilities, the derivatives are not designated as hedges. The changes in fair value of foreign exchange forward contracts and foreign currency option contracts not designated as hedges are recognized in Net foreign exchange gains or losses in the Consolidated Statements of Operations. Margin balances required by counterparties, which are equal to a percentage of the total value of open futures contracts, are included in Cash and cash equivalents.

As part of its overall strategy to manage its level of currency exposure, up to September 30, 2016 the Company had used foreign exchange forward contracts to hedge or partially hedge the net investment in certain subsidiaries and branches whose functional currencies are not the U.S. dollar. Such designated hedges were de-designated in 2016. Up to the time of de-designation, the changes in fair value of this designated hedge and the hedged item related to foreign currency risk exposure were recognized in Currency translation adjustment in the Consolidated Balance Sheets. For foreign exchange forward contracts not designated as net

investment hedges, the change in fair value is included in Net foreign exchange gains (losses). At December 31, 2018 and 2017 the Company did not have any designated net investment hedges.

The Company also uses, from time to time, interest rate swaps to mitigate exposure to interest rate volatility. The changes in fair value of these derivatives are recorded in Net realized and unrealized gains or losses.

The Company formally documents all relationships between designated hedging instruments and hedged items, as well as its risk management objectives and strategy for undertaking various hedge transactions. In this documentation, the Company specifically identifies the asset or liability that has been designated as a hedged item and states how the hedging instrument is expected to hedge the risks related to the hedged item. The Company formally measures effectiveness of its designated hedging relationships both at the hedge inception and on an ongoing basis. The Company's method for assessing the effectiveness of the designated hedge entered in December 2018 is a qualitative assessment as the Company has determined that the hedging instrument (the designated foreign currency forward contracts) and the hedged assets (the available-for-sale foreign currency denominated short-term investments) are perfectly aligned as they relate to the hedged risk, the foreign currency exchange rate risk exposure.

The Company will discontinue hedge accounting prospectively if it is determined that the derivative is no longer effective in hedging the exposure to variability in expected future cash flows that is attributable to the risk it was meant to hedge; if the derivative instruments expires, is sold, or otherwise terminated; or if the Company removes the designation of the hedge. To the extent that the Company discontinues hedge accounting because, based on management's assessment, the derivative no longer qualifies as an effective hedge, or the Company otherwise de-designates the hedge, the derivative will continue to be carried in the Consolidated Balance Sheet at its fair value, with changes in its fair value recognized in in the Consolidated Statements of Operations, or in Other comprehensive income, depending on the type of derivative held.

(o) Pensions

The Company recognizes an asset or a liability in the Consolidated Balance Sheets for the funded status of its defined benefit plans that are overfunded or underfunded, respectively, measured as the difference between the fair value of plan assets and the pension obligation and recognizes changes in the funded status of defined benefit plans in the year in which the changes occur as a component of Accumulated other comprehensive income or loss, net of tax.

(p) Variable Interest Entities

The Company is involved in the normal course of business with variable interest entities (VIEs). An assessment is performed as of the date the Company becomes initially involved in the VIE followed by a reassessment upon certain events related to its involvement in the VIE. The Company consolidates a VIE when it is the primary beneficiary having a controlling financial interest as a result of having the power to direct the activities that most significantly impact the economic performance of the VIE and the obligation to absorb losses, or right to receive benefits, that could potentially be significant to the VIE.

(q) Segment Reporting

The Company monitors the performance of its operations in three segments: Property & Casualty (P&C), Specialty, and Life and Health. Segments represent markets that are reasonably homogeneous in terms of client types, buying patterns, underlying risk patterns or approach to risk management.

In 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the financial results for U.S. health business for 2018 has been included in the P&C segment and the impacted 2017 and 2016 comparatives have been reclassified from the Life and Health to the P&C segment to conform to current presentation.

Since the Company does not manage its assets by segment, net investment income is not allocated to the P&C and Specialty segments. However, because of the interest-sensitive nature of some of the Company's life products, allocated net investment income is considered in management's assessment of the profitability of the Life and Health segment. The following items are not considered in evaluating the results of the P&C, Specialty and Life and Health segments: Net realized and unrealized investment gains or losses, Interest expense, Loss on redemption of debt, Amortization of intangible assets, Net foreign exchange gains or losses, Income tax expense or benefit and Interest in earnings and losses of equity method investments. These items are included in the Corporate and Other component, which is comprised of the Company's investment and corporate activities, including other expenses.

(r) Recent Accounting Pronouncements

In January 2016, the Financial Accounting Standards Board (FASB) issued updated guidance that focused on improving the recognition and measurement of financial instruments by adjusting the reporting model for financial instruments to provide improved financial information to readers of the financial statements by requiring equity investments, except for those accounted for

using the equity method, to be measured at fair value with changes in fair value recognized in net income rather than other comprehensive income. The guidance was effective for the year ended December 31, 2018. Upon adoption of this guidance the Company remeasured four equity investments, previously recorded at cost, to fair value, recognizing $13 million in Net realized and unrealized (losses) gains in the Consolidated Statement of Operations for the year ended December 31, 2018.

In October 2016, the FASB issued updated guidance on income taxes with respect to intra-entity transfers of assets. This update requires recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The guidance was effective for the December 31, 2018 year end. The adoption of this guidance for the year ended December 31, 2018 did not have a significant impact on the Company's Consolidated Financial Statements.

In March 2017, the FASB issued updated guidance on presentation of net periodic pension cost and net periodic post-retirement benefit cost. This update requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the employees during the period. It also requires the other components of net periodic pension cost and net periodic post-retirement benefit cost to be presented in income separately from the service cost component. Additionally, only the service cost component is eligible for capitalization, when applicable. The guidance was effective for the year ended December 31, 2018. The adoption of this guidance did not have a significant impact on the Company's Consolidated Financial Statements and disclosures. See Note 15 for disclosures on retirement benefit arrangements.

In August 2017, the FASB issued updated guidance on accounting for hedging activities. This update expands and refines hedge accounting for both non-financial and financial risk components and aligns the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. The amendments also make certain targeted improvements to simplify the application of hedge accounting guidance and ease the administrative burden of hedge documentation requirements and for assessing hedge effectiveness. The guidance is effective for annual periods beginning after December 15, 2018, with early adoption permitted. The Company early adopted this guidance for the year ended December 31, 2018 which resulted in changes to the significant accounting policy Note 2(n) for Derivatives above to reflect the new guidance. See also Note 6 for further details of the new foreign exchange forward contracts designated as hedges in December 2018 which are accounted for and disclosed in accordance with this new guidance. The adoption of this guidance did not have a significant impact on the Company's Consolidated Financial Statements as there were no other designated hedges as at December 31, 2018 or 2017.

In January and April 2017, the FASB issued updated guidance on the accounting for goodwill impairment. This update removes the second step of the goodwill impairment test and requires entities to apply a one-step quantitative test and record the amount of goodwill impairment as the excess of a reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. The new guidance does not amend the optional qualitative assessment of goodwill impairment. The guidance is effective for annual impairment tests performed after December 15, 2019, with early adoption permitted. The Company does not expect the adoption of this guidance to have a significant impact on its Consolidated Financial Statements and disclosures.

In February 2016, the FASB issued updated guidance on the accounting for leases. This update requires the recognition of lease assets and lease liabilities for leases classified as operating leases and expands required disclosures. The guidance is effective for annual periods beginning after December 15, 2018, with early adoption permitted. In July 2018, the FASB issued targeted improvements to the updated guidance, which provide an option to recognize a cumulative effect adjustment to the opening retained earnings in the period of adoption and a practical expedient related to the separation of non-lease components under certain circumstances. The adoption of this guidance for the year ended December 31, 2019 will result in recognition of an asset and liability related to lease assets and liabilities but is not expected to have a significant impact on the Company's Consolidated Statements of Operations.

In June 2016, the FASB issued updated guidance on the recognition of credit losses by replacing the incurred loss impairment methodology with new accounting models related to how credit losses on financial instruments are determined. The new guidance is applicable to financial assets such as loans, reinsurance receivables, trade receivables, debt securities, off-balance sheet credit exposures, and other financial assets that have a contractual right to receive cash. The guidance is effective for annual periods beginning after December 15, 2019, with early adoption permitted. The Company is currently evaluating the impact of this guidance on its Consolidated Financial Statements and disclosures required to be adopted for the year ended December 31, 2020.

In August 2018, the FASB issued updated guidance to the disclosure requirements for fair value measurement as part of the disclosure framework project. The updated guidance allows for the removal and modification of certain disclosures to improve the effectiveness of disclosures in the notes to financial statements. This guidance is effective for fiscal years beginning after December 15, 2019. The Company is currently evaluating the impact of this guidance on its Consolidated Financial Statements and disclosures required to be adopted for the year ended December 31, 2020.

In August 2018, the FASB issued updated guidance to improve financial reporting for insurance companies that issue long-duration contracts such as life insurance and annuities. The objective of the new guidance is to improve, simplify, and enhance the financial reporting of long-duration contracts by providing financial statement users with useful information in a timely and

transparent manner. This guidance is effective for annual periods beginning after December 15, 2020. The Company is currently evaluating the impact of this guidance on its Consolidated Financial Statements and disclosures required to be adopted for the year ended December 31, 2021. This guidance could have a material on the measurement recognition of long duration contracts and will result in additional disclosures once adopted.

In August 2018, the FASB issued updated guidance to the disclosure requirements for defined benefit plans as part of the disclosure framework project. The updated guidance allows for the removal and modification of certain disclosures to improve the effectiveness of disclosures in the notes to financial statements. This guidance is effective for fiscal years beginning after December 15, 2020. The Company is currently evaluating the impact of this guidance on its disclosures once adopted.

3. Fair Value

(a) Fair Value of Financial Instrument Assets

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value by maximizing the use of observable inputs and minimizing the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing an asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about what market participants would use in pricing the asset or liability based on the best information available in the circumstances. 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 Company determines the appropriate level in the hierarchy for each financial instrument that it measures at fair value. In determining fair value, the Company uses various valuation approaches, including market, income and cost approaches. The hierarchy is broken down into three levels based on the observability of inputs as follows:

- Level 1 inputs—Unadjusted, quoted prices in active markets for identical assets or liabilities that the Company has the ability to access.

  The Company's financial instruments that it measures at fair value using Level 1 inputs generally include: equities listed on a major exchange and exchange traded derivatives, including futures that are actively traded.

- Level 2 inputs—Quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in inactive markets and significant directly or indirectly observable inputs, other than quoted prices, used in industry accepted models.

  The Company's financial instruments that it measures at fair value using Level 2 inputs generally include: U.S. government issued bonds; U.S. government sponsored enterprises bonds; U.S. state, territory and municipal entities bonds; non-U.S. sovereign government, supranational and government related bonds; investment grade and high yield corporate bonds; asset-backed securities; mortgage-backed securities; short-term investments; certain common and preferred equities; notes and loans receivable; foreign exchange forward contracts, interest rate swaps and TBAs.

- Level 3 inputs—Unobservable inputs.

  The Company's financial instruments that it measures at fair value using Level 3 inputs generally include: inactively traded fixed maturities including U.S. state, territory and municipal bonds; special purpose financing asset-backed bonds; unlisted or private equities; certain other mutual fund or exchange traded fund equities; privately placed corporate loans, notes and loans receivable and notes securitizations included in other invested assets; and certain other derivatives, including weather derivatives, longevity insurance-linked securities and total return swaps included in other invested assets.

At December 31, 2018 and 2017, the Company's financial instruments measured at fair value were classified between Levels 1, 2 and 3 as follows (in thousands of U.S. dollars):

December 31, 2018	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
Fixed maturities				
U.S. government and government sponsored enterprises	$ —	$ 2,345,008	$ —	$ 2,345,008
U.S. states, territories and municipalities	—	13,695	120,898	134,593
Non-U.S. sovereign government, supranational and government related	—	2,158,642	—	2,158,642
Corporate bonds	—	5,590,208	21,470	5,611,678
Asset-backed securities	—	41,087	17,596	58,683
Residential mortgage-backed securities	—	2,331,230	—	2,331,230
Other mortgage-backed securities	—	11	—	11
Fixed maturities	$ —	$ 12,479,881	$ 159,964	$ 12,639,845
Short-term investments[(1)]	$ —	$ 493,726	$ —	$ 493,726
Equities				
Finance	$ 11,307	$ 1	$ 13,710	$ 25,018
Technology	5,492	—	12,256	17,748
Consumer noncyclical	13,334	—	—	13,334
Consumer cyclical	6,435	—	—	6,435
Industrials	4,797	—	—	4,797
Insurance	1,771	1,189	—	2,960
Communications	1,451	—	—	1,451
Other	799	—	—	799
Mutual funds and exchange traded funds	—	—	621,759	621,759
Equities	$ 45,386	$ 1,190	$ 647,725	$ 694,301
Other invested assets				
Derivative assets				
Foreign exchange forward contracts	$ —	$ 17,820	$ —	$ 17,820
Insurance-linked securities	—	—	2,824	2,824
Total return swaps	—	—	1,697	1,697
Interest rate swaps	—	10	—	10
Other				
Corporate loans	—	—	401,702	401,702
Notes and loans receivable and notes securitization	—	—	6,507	6,507
Private equities	—	—	372,710	372,710
Derivative liabilities				
Foreign exchange forward contracts	—	(3,673)	—	(3,673)
Total return swaps	—	—	(3,232)	(3,232)
Interest rate swaps	—	(9,194)	—	(9,194)
Insurance-linked securities	—	—	(2,568)	(2,568)
Other invested assets	$ —	$ 4,963	$ 779,640	$ 784,603
Total	$ 45,386	$ 12,979,760	$ 1,587,329	$ 14,612,475

(1) Short-term investments includes $229 million of available-for-sale securities with readily determinable fair values. These securities were purchased in 2018 and are recorded at fair value, which approximated amortized cost given the short term to maturity of approximately three to four months.

December 31, 2017	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
Fixed maturities				
U.S. government and government sponsored enterprises	$ —	$ 2,205,964	$ —	$ 2,205,964
U.S. states, territories and municipalities	—	561,505	128,806	690,311
Non-U.S. sovereign government, supranational and government related	—	1,750,770	—	1,750,770
Corporate bonds	—	6,128,636	—	6,128,636
Asset-backed securities	—	30,965	20,738	51,703
Residential mortgage-backed securities	—	1,822,725	—	1,822,725
Other mortgage-backed securities	—	4,750	—	4,750
Fixed maturities	$ —	$ 12,505,315	$ 149,544	$ 12,654,859
Short-term investments	$ —	$ 4,400	$ —	$ 4,400
Equities				
Finance	$ 11,115	$ 1	$ 21,926	$ 33,042
Industrials	16,534	—	—	16,534
Technology	1,990	—	10,961	12,951
Insurance	—	7,558	—	7,558
Communications	3,215	—	—	3,215
Consumer cyclical	2,170	—	—	2,170
Consumer noncyclical	897	—	—	897
Other	3,493	—	—	3,493
Mutual funds and exchange traded funds	—	—	558,736	558,736
Equities	$ 39,414	$ 7,559	$ 591,623	$ 638,596
Other invested assets				
Derivative assets				
Foreign exchange forward contracts	$ —	$ 8,559	$ —	$ 8,559
Futures contracts	3,367	—	—	3,367
Insurance-linked securities	—	—	11,985	11,985
Total return swaps	—	—	2,505	2,505
TBAs	—	391	—	391
Other				
Corporate loans	—	—	205,331	205,331
Notes and loans receivable and notes securitization	—	3,425	108,563	111,988
Private equities	—	—	331,932	331,932
Derivative liabilities				
Foreign exchange forward contracts	—	(20,328)	—	(20,328)
Total return swaps	—	—	(3,269)	(3,269)
Interest rate swaps	—	(12,298)	—	(12,298)
TBAs	—	(591)	—	(591)
Other invested assets	$ 3,367	$ (20,842)	$ 657,047	$ 639,572
Funds held–directly managed				
U.S. government and government sponsored enterprises	$ —	$ 161,023	$ —	$ 161,023
Non-U.S. sovereign government, supranational and government related	—	95,812	—	95,812
Corporate bonds	—	41,090	—	41,090
Other	—	453	2,067	2,520
Funds held–directly managed	$ —	$ 298,378	$ 2,067	$ 300,445
Total	$ 42,781	$ 12,794,810	$ 1,400,281	$ 14,237,872

At December 31, 2018 and 2017, the aggregate carrying amounts of items included in Other invested assets that the Company did not measure at fair value were $704 million and $746 million, respectively, which primarily related to the Company's investments that are accounted for using the equity method of accounting.

In addition to the investments underlying the funds held–directly managed account held at fair value of $300 million at December 31, 2017, the funds held–directly managed account also included cash and cash equivalents of $74 million and accrued investment income of $3 million carried at fair value. At December 31, 2017, the aggregate carrying amount of items included in the funds held–directly managed account that the Company did not measure at fair value was $47 million, which primarily related to other assets and liabilities held by Colisée Re related to the underlying business, which were carried at cost prior to the funds being settled in 2018 (see Note 5).

At December 31, 2018 and 2017, the carrying value of accrued investment income approximated fair value due to its short-term nature.

During the year ended December 31, 2018, a corporate longevity bond valued at $25 million was transferred from Level 2 to Level 3 due to the lack of multiple independent pricing services (see in table below). Transfers into Level 3 also included four private equity securities valued at $31 million that were previously held at cost and were measured to fair value upon adoption of new accounting guidance described in Note 2(r). During the years ended December 31, 2018 and 2017, there were no transfers between Level 1 and Level 2.

Disclosures about the fair value of financial instruments that the Company does not measure at fair value exclude insurance contracts and certain other financial instruments. At December 31, 2018 and 2017, the fair values of financial instrument assets recorded in the Consolidated Balance Sheets not described above approximate their carrying values.

The reconciliations of the beginning and ending balances for all financial instruments measured at fair value using Level 3 inputs for the years ended December 31, 2018 and 2017, were as follows (in thousands of U.S. dollars):

For the year ended December 31, 2018	Balance at beginning of year	Realized and unrealized investment (losses) gains included in net income	Purchases and issuances [1]	Settlements and sales [2]	Net transfers into (out of) Level 3	Balance at end of year	Change in unrealized investment (losses) gains relating to assets held at end of year
Fixed maturities							
U.S. states, territories and municipalities	$ 128,806	$ (4,417)	$ —	$ (3,491)	$ —	$ 120,898	$ (4,320)
Asset-backed securities	20,738	(2,552)	—	(590)	—	17,596	(2,552)
Corporate	—	(139)	—	(3,745)	25,354	21,470	(139)
Fixed maturities	$ 149,544	$ (7,108)	$ —	$ (7,826)	$ 25,354	$ 159,964	$ (7,011)
Equities							
Finance	$ 21,926	$ 5,065	$ —	$ (13,281)	$ —	$ 13,710	$ (3,544)
Technology	10,961	1,295	—	—	—	12,256	1,295
Mutual funds and exchanged traded funds	558,736	10,996	55,027	(3,000)	—	621,759	10,996
Equities	$ 591,623	$ 17,356	$ 55,027	$ (16,281)	$ —	$ 647,725	$ 8,747
Other invested assets							
Derivatives, net	$ 11,221	$ 5,038	$ (1,623)	$ (15,915)	$ —	$ (1,279)	$ 372
Corporate loans	205,331	(21,522)	367,975	(150,082)	—	401,702	(20,823)
Notes and loan receivables and notes securitization	108,563	(4,054)	—	(98,002)	—	6,507	(3,884)
Private equities	331,932	(12,422)	55,114	(32,994)	31,080	372,710	(15,048)
Other invested assets	$ 657,047	$ (32,960)	$ 421,466	$ (296,993)	$ 31,080	$ 779,640	$ (39,383)
Funds held–directly managed	$ 2,067	$ 238	$ 268	$ (2,573)	$ —	$ —	$ —
Total	$1,400,281	$ (22,474)	$ 476,761	$ (323,673)	$ 56,434	$1,587,329	$ (37,647)

(1) Purchases and issuances of derivatives include issuances of $2 million.

(2) Settlements and sales of Equities, Other invested assets, and Funds held–directly managed include sales of $16 million, $248 million and $3 million, respectively. Sales of Other invested assets of $248 million included sales of derivatives of $16 million, corporate loans of $107 million, notes and loan receivables and notes securitization of $96 million, and private equities of $29 million.

For the year ended December 31, 2017	Balance at beginning of year	Realized and unrealized investment gains (losses) included in net income	Purchases and issuances [1]	Settlements and sales [2]	Net transfers into (out of) Level 3	Balance at end of year	Change in unrealized investment gains (losses) relating to assets held at end of year
Fixed maturities							
U.S. states, territories and municipalities	$ 123,827	$ 5,804	$ —	$ (825)	$ —	$ 128,806	$ 5,804
Asset-backed securities	99,351	3,300	1,360	(83,273)	—	20,738	1,316
Fixed maturities	$ 223,178	$ 9,104	$ 1,360	$ (84,098)	$ —	$ 149,544	$ 7,120
Equities							
Finance	$ 20,934	$ 992	$ —	$ —	$ —	$ 21,926	$ 992
Technology	9,800	1,611	—	(450)	—	10,961	1,611
Mutual funds and exchanged traded funds	153	51,476	507,250	(143)	—	558,736	51,486
Equities	$ 30,887	$ 54,079	$ 507,250	$ (593)	$ —	$ 591,623	$ 54,089
Other invested assets							
Derivatives, net	$ 8,805	$ 5,977	$ 1,793	$ (5,354)	$ —	$ 11,221	$ 3,231
Corporate loans	—	(709)	206,700	(660)	—	205,331	(695)
Notes and loans receivable and notes securitization	141,693	2,744	2,040	(37,914)	—	108,563	6,977
Private equities	305,729	29,942	17,572	(21,311)	—	331,932	27,533
Other invested assets	$ 456,227	$ 37,954	$ 228,105	$ (65,239)	$ —	$ 657,047	$ 37,046
Funds held–directly managed	$ 4,540	$ (516)	$ 495	$ (2,452)	$ —	$ 2,067	$ (629)
Total	$ 714,832	$ 100,621	$ 737,210	$ (152,382)	$ —	$1,400,281	$ 97,626

(1) *Purchases and issuances of derivatives include issuances of $2 million.*

(2) *Settlements and sales of equities include sales of $1 million.*

The significant unobservable inputs used in the valuation of financial instruments measured at fair value using Level 3 inputs at December 31, 2018 and 2017 were as follows (fair value in thousands of U.S. dollars):

December 31, 2018	Fair value	Valuation techniques	Unobservable inputs	Range (Weighted average)
Fixed maturities				
U.S. states, territories and municipalities	**$120,898**	Discounted cash flow	Credit spreads	**0.2% – 10.2% (4.3%)**
Asset backed securities	**17,596**	Discounted cash flow	Credit spreads	**6.7% (6.7%)**
Equities				
Finance[1]	**13,710**	Lag reported market value	Transaction price	**12.0 (12.0)**
Technology	**12,256**	Reported market value	Tangible book value multiple	**1.0 (1.0)**
Other invested assets				
Total return swaps, net	**(1,535)**	Discounted cash flow	Credit spreads	**2.5% – 23.0% (16.0%)**
Insurance-linked securities – longevity swaps	**2,824**	Discounted cash flow	Credit spreads	**2.6% (2.6%)**
Insurance-linked securities – pandemic swaps	**(1,301)**	Discounted cash flow	Credit spreads	**27.3% (27.3%)**
Insurance-linked securities – weather index swap	**(1,267)**	Proprietary option model	Index value (temperature)	**80.7 – 3,293.8 (175.3)**
Notes and loans receivable	**2,660**	Discounted cash flow	Credit spreads	**41.5% – 41.9% (41.5%)**
Notes and loans receivable	**2,688**	Discounted cash flow	Credit spreads	**17.5% (17.5%)**
			Gross revenue/fair value	**1.1 (1.1)**
Note securitization	**1,159**	Discounted cash flow	Credit spreads	**0.8% (0.8%)**
Private equity - direct	**1,889**	Weighted market comparables	Revenue multiple	**1.1 (1.1)**
			Adjusted earnings multiple	**9.8 (9.8)**
			Liquidity discount	**30% (30%)**
Private equity funds	**14,438**	Reported market value	Net asset value, as reported	**100.0% (100.0%)**
			Market adjustments	**-6.5% (-6.5%)**
Private equity - other	**19,997**	Discounted cash flow	Effective yield	**4.1% (4.1%)**

(1) During the year, the Company sold a portion of its investment and used the arm's length transaction price as an estimate of the fair value of the remaining holdings. This change was not considered material to the Company's financial position or results of operations.

December 31, 2017	Fair value	Valuation techniques	Unobservable inputs	Range (Weighted average)
Fixed maturities				
U.S. states, territories and municipalities	$128,806	Discounted cash flow	Credit spreads	0.2% – 10.2% (4.7%)
Asset backed securities	20,738	Discounted cash flow	Credit spreads	4.7% (4.7%)
Equities				
Finance	21,926	Weighted market comparables	Net income multiple	16.7 (16.7)
			Tangible book value multiple	2.0 (2.0)
			Liquidity discount	25.0% (25.0%)
			Comparable return	4.1% (4.1%)
Technology	10,961	Reported market value	Tangible book value multiple	1.0 (1.0)
Other invested assets				
Total return swaps, net	(764)	Discounted cash flow	Credit spreads	2.4% – 30.8% (18.5%)
Insurance-linked securities – longevity swaps	11,962	Discounted cash flow	Credit spreads	1.7% (1.7%)
Notes and loans receivable	102,907	Discounted cash flow	Credit spreads	3.9% – 39.3% (6.1%)
Notes and loans receivable	4,265	Discounted cash flow	Credit spreads	17.5% (17.5%)
			Gross revenue to fair value ratios	1.1 (1.1)
Note securitization	1,391	Discounted cash flow	Credit spreads	1.5% (1.5%)
Private equity - direct	3,011	Discounted cash flow and market multiples	Tangible book value multiple	0.8 (0.8)
			Recoverability of intangible assets	0% (0%)
Private equity funds	12,559	Reported market value	Net asset value, as reported	100.0% (100.0%)
			Market adjustments	-0.7% (-0.7%)
Private equity - other	24,241	Discounted cash flow	Effective yield	3.8% (3.8%)
Funds held–directly managed				
Other invested assets	2,067	Reported market value	Net asset value, as reported	100.0% (100.0%)
			Market adjustments	0% (0%)

The tables above do not include financial instruments that are measured using unobservable inputs (Level 3) where the unobservable inputs were obtained from external sources and used without adjustment. These financial instruments include corporate bonds (included within Fixed maturities), mutual fund and exchange traded funds investments (included within Equities), certain private equity funds (private equities included within Other invested assets), privately placed corporate loans (included within Other invested assets) and certain derivatives (included within Other invested assets).

The Company has established a Valuation Committee which is responsible for determining the Company's invested asset valuation procedures, reviewing significant changes in the fair value measurements of securities classified as Level 3 and ensuring that there is an appropriate independent peer analysis, on at least an annual basis, on the fair value measurements of significant securities that are classified as Level 3. The Valuation Committee is comprised of members of the Company's senior management team.

Changes in the fair value of the Company's financial instruments subject to the fair value option during the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands of U.S. dollars):

	2018	2017	2016
Fixed maturities and short-term investments	**$ (150,926)**	$ 124,033	$ (90,334)
Equities	**2,791**	60,460	(14,850)
Other invested assets	**(12,987)**	28,144	11,066
Funds held–directly managed	**(6,484)**	(5,612)	(721)
Total	**$ (167,606)**	$ 207,025	$ (94,839)

Substantially all of the above changes in fair value are included in the Consolidated Statements of Operations under the caption Net realized and unrealized investment (losses) gains. The change in the fair value of Other invested assets subject to the fair value option does not include certain derivatives.

The following methods and assumptions were used by the Company in estimating the fair value of each class of financial instrument recorded in the Consolidated Balance Sheets. There have been no material changes in the Company's valuation techniques during the periods presented.

Fixed maturities

- *U.S. government and government sponsored enterprises*—consists primarily of bonds issued by the U.S. Treasury and corporate debt securities issued by government sponsored enterprises and federally owned or established corporations. These securities are generally priced by independent pricing services. The independent pricing services may use actual transaction prices for securities that have been actively traded. For securities that have not been actively traded, each pricing source has its own proprietary method to determine the fair value, which may incorporate option adjusted spreads (OAS), interest rate data and market news. The Company generally classifies these securities in Level 2.
- *U.S. states, territories and municipalities*—consists primarily of bonds issued by U.S. states, territories and municipalities and the Federal Home Loan Mortgage Corporation. These securities are generally priced by independent pricing services using the techniques described for U.S. government and government sponsored enterprises above. The Company generally classifies these securities in Level 2. Certain of the bonds that are issued by municipal housing authorities and the Federal Home Loan Mortgage Corporation are not actively traded and are priced based on internal models using unobservable inputs (credit spreads). Accordingly, the Company classifies these securities in Level 3. A significant increase (decrease) in credit spreads in isolation could result in a significantly lower (higher) fair value measurement.
- *Non-U.S. sovereign government, supranational and government related*—consists primarily of bonds issued by non-U.S. national governments and their agencies, non-U.S. regional governments and supranational organizations. These securities are generally priced by independent pricing services using the techniques described for U.S. government and government sponsored enterprises above. The Company generally classifies these securities in Level 2.
- *Corporate*—consists primarily of bonds issued by U.S. and foreign corporations covering a variety of industries and issuing countries. Corporate securities also include real estate investment trusts, catastrophe bonds, longevity and mortality bonds and government guarantee corporate debt. These securities are generally priced by independent pricing services and brokers. The pricing provider incorporates information including credit spreads, interest rate data and market news into the valuation of each security. The Company generally classifies these securities in Level 2. When a corporate security is inactively traded or the valuation model uses unobservable inputs, the Company classifies the security in Level 3.
- *Asset-backed securities*—primarily consists of bonds issued by U.S. and foreign corporations that are predominantly backed by student loans, automobile loans, credit card receivables, equipment leases, and special purpose financing. With the exception of special purpose financing securities, these asset-backed securities are generally priced by independent pricing services and brokers. The pricing provider applies dealer quotes and other available trade information, prepayment speeds, yield curves and credit spreads to the valuation. The Company generally classifies these securities in Level 2. Special purpose financing securities are generally inactively traded and are priced based on valuation models using unobservable inputs (credit spreads). The Company generally classifies these securities in Level 3. A significant increase (decrease) in credit spreads in isolation could result in a significantly lower (higher) fair value measurement.
- *Residential mortgage-backed securities*—primarily consists of bonds issued by the Government National Mortgage Association, the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, as well as private, non-agency issuers. These residential mortgage-backed securities are generally priced by independent pricing services and brokers. When current market trades are not available, the pricing provider or the Company will employ proprietary models with observable inputs including other trade information, prepayment speeds, yield curves and credit spreads. The Company generally classifies these securities in Level 2.

- *Other mortgage-backed securities*—primarily consists of commercial mortgage-backed securities. These securities are generally priced by independent pricing services and brokers. The pricing provider applies dealer quotes and other available trade information, prepayment speeds, yield curves and credit spreads to the valuation. The Company generally classifies these securities in Level 2.

In general, the methods employed by the independent pricing services to determine the fair value of the securities that have not been actively traded primarily involve the use of "matrix pricing" in which the independent pricing source applies the credit spread for a comparable security that has traded recently to the current yield curve to determine a reasonable fair value. The Company generally uses one pricing source per security and uses a pricing service ranking to consistently select the most appropriate pricing service in instances where it receives multiple quotes on the same security. When fair values are unavailable from these independent pricing sources, quotes are obtained directly from broker-dealers who are active in the corresponding markets. Most of the Company's fixed maturities are priced from the pricing services or dealer quotes. The Company will typically not make adjustments to prices received from pricing services or dealer quotes; however, in instances where the quoted external price for a security uses significant unobservable inputs, the Company will classify that security as Level 3. The methods used to develop and substantiate the unobservable inputs used are based on the Company's valuation policy and are dependent upon the facts and circumstances surrounding the individual investments which are generally transaction specific. The Company's inactively traded fixed maturities are classified as Level 3. For all fixed maturity investments, the bid price is used for estimating fair value.

To validate prices, the Company compares the fair value estimates to its knowledge of the current market and will investigate prices that it considers not to be representative of fair value. The Company also reviews an internally generated fixed maturity price validation report which converts prices received for fixed maturity investments from the independent pricing sources and from broker-dealers quotes and plots OAS and duration on a sector and rating basis. The OAS is calculated using established algorithms developed by an independent risk analytics platform vendor. The OAS on the fixed maturity price validation report are compared for securities in a similar sector and having a similar rating, and outliers are identified and investigated for price reasonableness. In addition, the Company completes quantitative analyses to compare the performance of each fixed maturity investment portfolio to the performance of an appropriate benchmark, with significant differences identified and investigated.

Short-term investments

Short-term investments are valued in a manner similar to the Company's fixed maturity investments and are generally classified in Level 2. Short-term investments at December 31, 2018 includes investments in foreign currency denominated bonds issued by a foreign government with durations to maturity of three to four months, as discussed in footnote (1) to the fair value table above. See also Notes 2(f) and 2(n) for further details.

Equities

Equity securities include U.S. and foreign common and preferred stocks, real estate investment trusts, mutual funds and exchange traded funds. Equities, real estate investment trusts and exchange traded funds are generally classified in Level 1 as the Company uses prices received from independent pricing sources based on quoted prices in active markets. Equities classified as Level 2 are generally mutual funds invested in fixed income securities, where the net asset value of the fund is provided on a daily basis, and certain common and preferred equities. Equities classified as Level 3 are generally mutual funds invested in securities other than the common stock of publicly traded companies, where the net asset value is not provided on a daily basis, and inactively traded common stocks. The significant unobservable inputs used in the fair value measurement of inactively traded common stocks classified as Level 3 include market return information, weighted using management's judgment, from comparable selected publicly traded companies in the same industry, in a similar region and of a similar size, including transactional prices, net income multiples, tangible book value multiples, comparable returns, revenue multiples, adjusted earnings multiples and projected return on equity ratios. Significant increases (decreases) in any of these inputs could result in a significantly higher (lower) fair value measurement. Significant unobservable inputs used in measuring the fair value measurement of inactively traded common stocks also include a liquidity discount. A significant increase (decrease) in the liquidity discount could result in a significantly lower (higher) fair value measurement.

To validate prices, the Company completes quantitative analyses to compare the performance of each equity investment portfolio to the performance of an appropriate benchmark, with significant differences identified and investigated.

Other invested assets

The Company's exchange traded derivatives, such as futures, are generally classified as Level 1 as their fair values are quoted prices in active markets. The Company's foreign exchange forward contracts, foreign currency option contracts, interest rate swaps and TBAs are generally classified as Level 2 within the fair value hierarchy and are priced by independent pricing services.

Included in the Company's Level 3 classification, in general, are certain derivatives, including weather derivative insurance-linked securities and total return swaps; corporate loans; notes and loans receivable and notes securitizations; and private equities. For Level 3 instruments, the Company will generally (i) receive a price based on a manager's or trustee's valuation for the asset; (ii) develop an internal discounted cash flow model to measure fair value; or (iii) use market return information, adjusted if necessary and weighted using management's judgment, from comparable selected publicly traded equity funds in a similar region and of a similar size. Where the Company receives prices from the manager or trustee, these prices are based on the manager's or trustee's estimate of fair value for the assets and are generally audited on an annual basis. Where the Company develops its own discounted cash flow models, the inputs will be specific to the asset in question, based on appropriate historical information, adjusted as necessary, and using appropriate discount rates. The significant unobservable inputs used in the fair value measurement of other invested assets classified as Level 3 include variation in regional temperatures, credit spreads, gross revenue to fair value ratios, net income multiples, effective yields, tangible book value multiples and other valuation ratios. Significant increases (decreases) in any of these inputs in isolation could result in a significantly lower (higher) fair value measurement. Significant unobservable inputs used in the fair value measurement of other invested assets classified as Level 3 also include an assessment of the recoverability of intangible assets and market return information, weighted using management's judgment, from comparable selected publicly traded companies in the same industry, in a similar region and of a similar size. Significant increases (decreases) in these inputs in isolation could result in a significantly higher (lower) fair value measurement. As part of the Company's modeling to determine the fair value of an investment, the Company considers counterparty credit risk as an input to the model, however, the majority of the Company's counterparties are investment grade rated institutions and the failure of any one counterparty would not have a significant impact on the Company's consolidated financial statements.

To validate prices, the Company will compare them to benchmarks, where appropriate, or to the business results generally within that asset class and specifically to those particular assets.

Funds held–directly managed

The segregated investment portfolio underlying the funds held–directly managed account was fair valued, and prices validated, on a basis consistent with the methods described above. The funds held–directly managed account was settled prior to December 31, 2018 as a result of a commutation of the related business (see Note 5).

(b) Fair Value of Financial Instrument Liabilities

At December 31, 2018 and 2017, the carrying values of financial instrument liabilities recorded in the Consolidated Balance Sheets approximate their fair values, with the exception of the long-term debt related to senior notes and capital efficient notes (CENts). The fair value of the debt related to senior notes as of December 31, 2018 and 2017 was calculated based on discounted cash flow models using observable market yields and contractual cash flows based on the aggregate principal amount outstanding. The fair value of the debt related to CENts as of December 31, 2018 was calculated based on market data valuation models using observable inputs based on the aggregate principal amount outstanding of the intercompany debt.

See Note 10 for further details related to the Company's debt, including the carrying values and fair values.

At December 31, 2018 and 2017, the Company's debt related to the senior notes and CENts was classified as Level 2 in the fair value hierarchy.

Disclosures about the fair value of financial instrument liabilities exclude insurance contracts and certain other financial instruments.

4. Investments

(a) Net Realized and Unrealized Investment (Losses) Gains

The components of the net realized and unrealized investment (losses) gains for the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands of U.S. dollars):

	2018	2017	2016
Net realized investment (losses) gains on fixed maturities and short-term investments	**$ (224,887)**	$ 28,632	$ 96,994
Net realized investment gains (losses) on equities	**14,601**	(4,052)	157
Net realized investment gains (losses) on other invested assets	**7,136**	(3,217)	5,365
Net realized investment gains on funds held–directly managed	**1,200**	508	1,355
Net realized investment (losses) gains	**$ (201,950)**	$ 21,871	$ 103,871
Change in net unrealized investment gains or losses on fixed maturities and short-term investments	**$ (150,926)**	$ 124,033	$ (90,334)
Change in net unrealized investment gains or losses on equities	**2,791**	60,460	(14,850)
Change in unrealized investment gains or losses on other invested assets	**(25,607)**	32,790	25,488
Change in net unrealized investment gains or losses on funds held–directly managed	**(6,484)**	(5,567)	(676)
Net other realized and unrealized investment gains or losses	**(1,334)**	(1,096)	2,767
Change in net unrealized investment gains or losses	**$ (181,560)**	$ 210,620	$ (77,605)
Impairment loss on investments in real estate	**$ (6,122)**	$ —	$ —
Net realized and unrealized investment (losses) gains	**$ (389,632)**	$ 232,491	$ 26,266

(b) Net Investment Income

The components of net investment income for the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands of U.S. dollars):

	2018	2017	2016
Fixed maturities	**$ 378,726**	$ 382,676	$ 395,831
Short-term investments and cash and cash equivalents	**13,279**	5,363	1,915
Equities	**3,499**	(12)	4,382
Funds held and other[(1)]	**44,699**	29,068	34,161
Funds held–directly managed	**4,674**	7,742	9,993
Investment expenses	**(28,956)**	(22,766)	(35,418)
Net investment income	**$ 415,921**	$ 402,071	$ 410,864

(1) The Company generally earns investment income on funds held by reinsured companies based upon a predetermined interest rate, either fixed contractually at the inception of the contract or based upon a recognized index (e.g., LIBOR). Interest rates ranged from 0.1% to 7.4%, 0.1% to 7.0% and 0.0% to 5.4% for the years ended December 31, 2018, 2017 and 2016, respectively. The increase in the interest rate range in 2018 and 2017 compared to 2016 relates to the inclusion of one contract from the acquired Aurigen business with a total funds held value of less than $2 million as at December 31, 2018.

(c) Pledged and Restricted Assets

At December 31, 2018 and 2017, approximately $152 million and $274 million, respectively, of cash and cash equivalents and approximately $3,849 million and $3,422 million, respectively, of securities were deposited, pledged or held in escrow accounts in favor of ceding companies and other counterparties or government authorities to comply with reinsurance contract provisions and insurance laws. The increase during 2018 was mainly driven by collateral required to secure payment for claims related to hurricane Michael and the California wildfires.

(d) Receivable for Securities Sold and Payable for Securities Purchased

At December 31, 2018, receivables for securities sold of $19 million was recorded within Other assets and payables for securities purchased of $80 million was recorded within Accounts payable, accrued expenses, and other in the Consolidated Balance Sheet.

At December 31, 2017, a net payable for securities purchased of $38 million was recorded within Accounts payable, accrued expenses, and other in the Consolidated Balance Sheet.

(e) Variable Interest Entities

The Company holds variable interests in VIEs including certain limited liability companies or partnerships, trusts, fixed maturity investments and asset-backed securities. The holdings in these VIEs are reported within Fixed maturities and Other invested assets in the Company's Consolidated Balance Sheets. The Company's involvement in these entities is, for the most part, passive in nature. The Company's maximum exposure to loss with respect to these investments is limited to the amounts invested in and advanced to the VIEs, and any unfunded commitments (see Note 16).

(f) Summarized Financial Information of an Equity Method Investee

In 2016, the Company purchased from Exor S.A. a 36% shareholding in the privately held United Kingdom real estate investment and development group, Almacantar Group S.A. (Almacantar) for a total cash consideration of approximately $539 million. At December 31, 2018 and 2017, the total carrying value of this investment, accounted for under the equity method, was $498 million and $538 million, respectively, included within Other invested assets in the Consolidated Balance Sheets. This equity method investment was considered significant as the interest in earnings of this investee exceeded 10% of the consolidated net income before income tax expense of the Company as at December 31, 2017. As at December 31, 2018, the investment in Almacantar was no longer considered significant. The summarized balance sheet and income statement of Almacantar is as follows (in thousands of U.S. dollars):

	December 31, 2018	December 31, 2017
Current assets	**$ 1,007,293**	$ 906,085
Noncurrent assets	**$ 1,341,825**	$ 1,877,519
Current liabilities	**$ 577,660**	$ 553,219
Noncurrent liabilities	**$ 357,625**	$ 690,935

	For the year ended		
	December 31, 2018	December 31, 2017	December 31, 2016
Revenues	**$ 173,646**	$ 130,333	$ 24,646
Operating (loss) profit [1]	**$ (14,562)**	$ 190,613	$ (47,082)
Net (loss) income	**$ (21,038)**	$ 213,241	$ (37,059)

(1) Operating profit referred to in the table above includes revenues, cost of sales, and unrealized gains on properties.

5. Funds Held–Directly Managed

Following Paris Re's acquisition of substantially all of the reinsurance operations of Colisée Re (previously known as AXA RE) in 2006, a subsidiary of AXA SA (AXA), Paris Re and its subsidiaries entered into an issuance agreement and a quota share retrocession agreement to assume business written by Colisée Re from January 1, 2006 to September 30, 2007 as well as the in-force business at December 31, 2005. The agreements provided that the premium related to the transferred business was retained by Colisée Re and credited to a funds held account. The assets underlying the funds held–directly managed account were maintained by Colisée Re in a segregated investment portfolio and managed by the Company. Realized and unrealized investment gains and losses and net investment income related to this account inured to the benefit of the Company. The funds held–directly managed account was settled prior to December 31, 2018 upon commutation of the related run-off business and loss reserves. See also note 8(a) for discussion of the related reserve agreement.

6. Derivatives

The Company's objectives for holding or issuing derivatives are as follows:

Foreign Exchange Forward Contracts—The Company utilizes foreign exchange forward contracts as part of its overall currency risk management and investment strategies and, in December 2018, specifically designated certain foreign exchange forward contracts as a highly effective hedge of certain foreign currency denominated short-term investments. As described below, up to September 30, 2016, the Company also utilized foreign exchange forward contracts to hedge a portion of its net investment exposure resulting from the translation of its foreign subsidiaries and branches whose functional currency is other than the U.S. dollar.

Futures Contracts—The Company uses exchange traded treasury note futures contracts to manage portfolio duration and equity futures to hedge certain investments.

Insurance-linked Securities—The Company enters into various derivatives for which the underlying risks reference parametric weather risks in addition to longevity total return swaps for which the underlying risks reference longevity risks.

Total Return and Interest Rate Swaps—The Company enters into total return swaps referencing certain investments in Other invested assets. The Company enters into interest rate swaps to mitigate the interest rate risk on certain of the total return swaps and certain fixed maturity investments.

TBAs—The Company utilizes TBAs as part of its overall investment strategy and to enhance investment performance.

The net fair values of derivatives included in Other invested assets within the Company's Consolidated Balance Sheets and the related net notional values at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

			Net derivatives	
December 31, 2018	**Asset derivatives at fair value**	**Liability derivatives at fair value**	**Fair value**	**Net notional exposure**
Derivatives designated as hedges				
Foreign exchange forward contracts	**$ —**	**$ (2,464)**	**$ (2,464)**	**$ 226,019**
Total derivatives designated as hedges	**$ —**	**$ (2,464)**	**$ (2,464)**	
Derivatives not designated as hedges				
Foreign exchange forward contracts	**$ 17,820**	**$ (1,209)**	**$ 16,611**	**$ 2,231,871**
Insurance-linked securities [1]	**2,824**	**(2,568)**	**256**	**59,257**
Total return swaps	**1,697**	**(3,232)**	**(1,535)**	**41,980**
Interest rate swaps [2]	**10**	**(9,194)**	**(9,184)**	**1,840**
Total derivatives not designated as hedges	**$ 22,351**	**$ (16,203)**	**$ 6,148**	
Total derivatives	**$ 22,351**	**$ (18,667)**	**$ 3,684**	

			Net derivatives	
December 31, 2017	**Asset derivatives at fair value**	**Liability derivatives at fair value**	**Fair value**	**Net notional exposure**
Derivatives not designated as hedges				
Foreign exchange forward contracts	$ 8,559	$ (20,328)	$ (11,769)	$ 2,862,927
Futures contracts	3,367	—	3,367	917,696
Insurance-linked securities [1]	11,985	—	11,985	78,879
Total return swaps	2,505	(3,269)	(764)	42,147
Interest rate swaps [2]	—	(12,298)	(12,298)	192,215
TBAs	391	(591)	(200)	501,405
Total derivatives not designated as hedges	$ 26,807	$ (36,486)	$ (9,679)	

(1) Insurance-linked securities include longevity swaps for which the notional amounts are not reflective of the overall potential exposure of the swaps. The net notional exposure above included the Company's best estimate of the present value of future expected claims.

(2) The Company enters into interest rate swaps to mitigate notional exposures on certain total return swaps and certain fixed maturities. The net notional exposure for interest rate swaps above relates to fixed maturities.

The fair value of derivatives is recorded in Other invested assets in the Company's Consolidated Balance Sheets. At December 31, 2018 and 2017, the Company held foreign exchange forward contracts, which were not designated as hedges, for the purpose of managing overall foreign currency risk exposure against the U.S. dollar. At December 31, 2018, the Company also held foreign exchange forward contracts which were designated as highly effective hedges of the Japanese Yen foreign exchange rate risk exposure against the U.S. dollar related to specific Japanese government issued bonds recorded in Short-term investments. The gain on foreign exchange forward contracts designated as cash flow hedges recognized in Accumulated other comprehensive loss at December 31, 2018 was less than $2 million. There were no amounts reclassified to income and no amounts excluded from the effectiveness assessment. The time value of money was not considered material to include as the duration to maturity is short (approximately three to four months). There were no derivatives designated as hedges at December 31, 2017.

The gains and losses in the Consolidated Statements of Operations for derivatives not designated as hedges for the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands of U.S. dollars):

	2018	2017	2016
Foreign exchange forward contracts	**$ 45,143**	$ (41,776)	$ (53,437)
Foreign currency option contracts	**—**	—	2,583
Total included in Net foreign exchange gains (losses)	**$ 45,143**	$ (41,776)	$ (50,854)
Futures contracts	**$ 11,043**	$ (11,683)	$ (5,195)
Insurance-linked securities	**6,134**	(563)	3,813
Total return swaps	**—**	464	(1,096)
Interest rate swaps	**2,332**	1,105	10,981
TBAs	**(13,614)**	4,742	6,366
Total included in Net realized and unrealized investment gains (losses)	**$ 5,895**	$ (5,935)	$ 14,869
Total derivatives not designated as hedges	**$ 51,038**	$ (47,711)	$ (35,985)

Offsetting of Derivatives

The gross and net fair values of derivatives that are subject to offsetting in the Consolidated Balance Sheets at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

				Gross amounts not offset in the balance sheet		
December 31, 2018	**Gross amounts recognized [(1)]**	**Gross amounts offset in the balance sheet**	**Net amounts of assets/liabilities presented in the balance sheet**	**Financial instruments**	**Cash collateral received/ pledged**	**Net amount**
Total derivative assets	**$ 22,351**	**$ —**	**$ 22,351**	**$ (544)**	**$ (24,704)**	**$ (2,897)**
Total derivative liabilities	**$ (18,667)**	**$ —**	**$ (18,667)**	**$ 544**	**$ 5,221**	**$ (12,902)**
December 31, 2017						
Total derivative assets	$ 26,807	$ —	$ 26,807	$ (1,142)	$ (43,943)	$ (18,278)
Total derivative liabilities	$ (36,486)	$ —	$ (36,486)	$ 1,142	$ 25,389	$ (9,955)

(1) Amounts include all derivative instruments, irrespective of whether there is a legally enforceable master netting arrangement in place.

7. Goodwill and Intangible Assets

The Company's goodwill related to the acquisitions of PartnerRe SA, Winterthur Re, Paris Re and Presidio and intangible assets related to the acquisitions of Paris Re, Presidio, Aurigen and Claims Analytics at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

2018	Goodwill	Definite-lived intangible assets	Indefinite-lived intangible asset	Total intangible assets
Balance at January 1	**$ 456,380**	**$ 150,679**	**$ 9,555**	**$ 160,234**
Acquired during the year[(1)]	**—**	**4,138**	**—**	**4,138**
Intangible assets amortization	**n/a**	**(35,473)**	**n/a**	**(35,473)**
Balance at December 31	**$ 456,380**	**$ 119,344**	**$ 9,555**	**$ 128,899**

2017	Goodwill	Definite-lived intangible assets	Indefinite-lived intangible asset	Total intangible assets
Balance at January 1	$ 456,380	$ 99,742	$ 7,350	$ 107,092
Acquired during the year[(2)]	—	75,583	2,205	77,788
Intangible assets amortization	n/a	(24,646)	n/a	(24,646)
Balance at December 31	$ 456,380	$ 150,679	$ 9,555	$ 160,234

n/a: Not applicable

(1) In June 2018, the Company completed the acquisition for 100% of the assets in Claim Analytics Inc., a Canadian based provider of predictive analytics solutions for the insurance industry. In relation to this acquisition, the Company recorded intangible assets related to customer relationships of $4 million.

(2) In April 2017, the Company completed the acquisition of Aurigen. The Company recorded intangible assets related to the life value of business acquired (life VOBA) of $76 million and insurance licenses of $2 million. A bargain purchase gain of less than $1 million was included in Other income in the Consolidated Statement of Operations for the year ended December 31, 2017 representing the excess of fair value of the net assets acquired over the purchase price.

The gross carrying value and accumulated amortization of intangible assets included in the Consolidated Balance Sheets at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

	December 31, 2018			December 31, 2017		
	Gross carrying value	Accumulated amortization	Net carrying value	Gross carrying value	Accumulated amortization	Net carrying value
Definite-lived intangible assets:						
Unpaid losses and loss expenses [(1)]	**$ 191,196**	**$ 191,196**	**$ —**	$ 191,196	$ 168,581	$ 22,615
Renewal rights	**48,163**	**31,828**	**16,335**	48,163	27,909	20,254
Customer relationships	**67,546**	**36,188**	**31,358**	63,408	29,353	34,055
Life VOBA	**75,583**	**3,932**	**71,651**	75,583	1,828	73,755
Total definite-lived intangible assets	**$ 382,488**	**$ 263,144**	**$ 119,344**	$ 378,350	$ 227,671	$ 150,679
Indefinite-lived intangible asset:						
Insurance licenses	**9,555**	**n/a**	**9,555**	9,555	n/a	9,555
Total intangible assets	**$ 392,043**	**$ 263,144**	**$ 128,899**	$ 387,905	$ 227,671	$ 160,234

n/a: Not applicable

(1) The remaining intangible asset balance for unpaid losses and loss expenses was reduced to $nil in 2018 following commutation of the related business (see Notes 5 and 8(a)).

Definite-lived intangible assets are amortized over a period of 10-13 years for renewal rights and customer relationships, and 100 years for life VOBA.

The allocation of the goodwill to the Company's segments at December 31, 2018 and 2017 was as follows (in thousands of U.S. dollars):

	2018	2017
P&C segment [(1)]	**$ 242,376**	$ 241,530
Specialty segment	**196,047**	196,047
Life and Health segment [(1)]	**17,957**	18,803
Total	**$ 456,380**	$ 456,380

(1) In 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, goodwill related to the U.S. health business was moved from the Life and Health segment to the P&C segment.

The estimated amortization expense for each of the five succeeding fiscal years related to the Company's definite-lived intangible assets was as follows (in thousands of U.S. dollars):

Year	Amount
2019	$ 11,350
2020	9,941
2021	8,820
2022	8,912
2023	7,924
Total	$ 46,947

8. Non-life and Life and Health Reserves

(a) Non-life reserves

Non-life reserves are categorized into three types of reserves: case reserves, ACRs and IBNR reserves. Case reserves represent unpaid losses reported by the Company's cedants and recorded by the Company. ACRs are established for particular circumstances where, on the basis of individual loss reports, the Company estimates that the particular loss or collection of losses covered by a treaty may be greater than those advised by the cedant. IBNR reserves represent a provision for claims that have been incurred but not yet reported to the Company, as well as future loss development on losses already reported, in excess of the case reserves and ACRs.

The Company's gross liability for non-life reserves reported by cedants (case reserves) and those estimated by the Company (ACRs and IBNR reserves) at December 31, 2018 and 2017 was as follows (in thousands of U.S. dollars):

	December 31, 2018	December 31, 2017[(1)]
Case reserves	**$ 4,217,068**	$ 4,180,554
ACRs	**174,713**	176,369
IBNR reserves	**5,503,595**	5,745,249
Non-life reserves	**$ 9,895,376**	$ 10,102,172

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 comparatives have been reclassified to conform to current presentation.

The reconciliation of the beginning and ending gross and net liability for non-life reserves for the years ended December 31, 2018, 2017 and 2016 was as follows (in thousands of U.S. dollars):

	2018	2017[1]	2016[1]
Gross liability at beginning of year	**$ 10,102,172**	$ 9,247,200	$ 9,317,003
Reinsurance recoverable at beginning of year	**719,998**	295,388	228,961
Net liability at beginning of year	**$ 9,382,174**	$ 8,951,812	$ 9,088,042
Net incurred losses related to:			
Current year	**$ 3,417,366**	$ 3,453,725	$ 3,243,506
Prior years	**(248,719)**	(448,158)	(676,574)
	$ 3,168,647	$ 3,005,567	$ 2,566,932
Change in Paris Re Reserve Agreement[2]	**$ (397,493)**	$ (3,481)	$ 5,518
Net paid losses related to:			
Current year	**$ (336,584)**	$ (472,291)	$ (391,528)
Prior years	**(2,585,403)**	(2,506,760)	(2,096,945)
	$ (2,921,987)	$ (2,979,051)	$ (2,488,473)
Effects of foreign exchange rate changes	**$ (186,911)**	$ 407,327	$ (220,207)
Net liability at end of year	**$ 9,044,430**	$ 9,382,174	$ 8,951,812
Reinsurance recoverable at end of year	**850,946**	719,998	295,388
Gross liability at end of year	**$ 9,895,376**	$ 10,102,172	$ 9,247,200

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

(2) The change in reserve agreement includes (adverse) favorable development on Paris Re's reserves which were guaranteed by Axa under the reserve agreement. For 2018, this balance also includes the reduction of the guaranteed reserves following the commutation of the agreement in the fourth quarter of 2018.

For the year ended December 31, 2018, the Company reported net favorable loss development for prior accident years resulting from favorable loss emergence in both Non-life segments. The favorable loss emergence within the P&C segment was across multiple accident years, mainly driven by the casualty business. The favorable loss emergence within the Specialty segment was across multiple accident years, predominantly from the financial risks and property marine energy business.

For the year ended December 31, 2017, the Company reported net favorable loss development for prior accident years resulting from favorable loss emergence in both Non-life segments. The favorable loss emergence within the P&C segment was across multiple accident years, mainly driven by the casualty business. The favorable loss emergence within the Specialty segment was predominantly from the previous two accident years, mainly driven by the energy and agriculture business.

For the year ended December 31, 2016, the Company reported net favorable loss development for prior accident years resulting from favorable loss emergence in both Non-life segments. The favorable loss emergence within the P&C segment was across multiple accident years, mainly driven by the casualty business. The favorable loss emergence within the Specialty segment was predominantly from the previous two accident years, mainly driven by the marine and energy business.

Paris Re Reserve Agreement

Following Paris Re's acquisition of substantially all of the reinsurance operations of Colisée Re in 2006, Paris Re's French operating subsidiary (Paris Re France) entered into a reserve agreement (Reserve Agreement) whereby AXA and Colisée Re guarantee reserves in respect of Paris Re France and subsidiaries acquired in the acquisition. The Reserve Agreement related to losses incurred prior to December 31, 2005. The reserve guarantee was conditioned upon, among other things, the guaranteed business, including related ceded reinsurance, being managed by AXA Liabilities Managers, an affiliate of Colisée Re. At December 31, 2017, the Company's gross liability for non-life reserves included $426 million of guaranteed reserves, which were settled prior to December 31, 2018 as a result of the commutation of the remaining reserves under the Reserve Agreement. As a result of this commutation, a gain of $29 million was recorded in Other income within the Consolidated Statement of Operations during the year ended December 31, 2018. Prior to the commutation, favorable or adverse development related to the guaranteed reserves was recorded as a change in non-life reserves with an offsetting change in the related payable or receivable to/from Colisée Re within the Funds held–directly managed account in the Consolidated Balance Sheets. See also Note 5.

Asbestos and Environmental Claims

The Company’s net non-life reserves at December 31, 2018 and 2017 included $47 million and $134 million, respectively, related to asbestos and environmental claims. The gross liability for such claims at December 31, 2018 and 2017 was $54 million and $142 million, respectively. This primarily relates to casualty exposures in the United States arising from business written by the French branch of PartnerRe Europe and PartnerRe U.S. For the year ended December 31, 2017, the reserve included business related to Paris Re’s gross liability for asbestos and environmental claims for accident years 2005 and prior of $96 million, with any favorable or adverse development being subject to the Reserve Agreement, which was commuted in 2018.

Ultimate loss estimates for such claims cannot be estimated using traditional reserving techniques and there are significant uncertainties in estimating the Company’s potential losses for these claims. In view of the legal and tort environment that affect the development of such claims, the uncertainties inherent in estimating asbestos and environmental claims are not likely to be resolved in the near future. There can be no assurance that the reserves established by the Company will not be adversely affected by development of other latent exposures, and further, there can be no assurance that the reserves established by the Company will be adequate. The Company does, however, actively evaluate potential exposure to asbestos and environmental claims and establishes additional reserves as appropriate. The Company believes that it has made a reasonable provision for these exposures and is unaware of any specific issues that would materially affect its unpaid losses and loss expense reserves related to this exposure.

Reserving methods

The reserving methods commonly employed by the Company are summarized as follows:

Chain Ladder (CL) Development Methods (Reported or Paid)

These methods use the underlying assumption that losses reported (paid) for each underwriting year at a particular development stage follow a stable pattern. The CL development method assumes that on average, every underwriting year will display the same percentage of ultimate liabilities reported by the Company’s cedants at 24 months after the inception of the underwriting year. The percentages reported (paid) are established for each development stage after examining historical averages from the loss development data. These are sometimes supplemented by external benchmark information. Ultimate liabilities are estimated by multiplying the actual reported (paid) losses by the reciprocal of the assumed reported (paid) percentage. Reserves are then calculated by subtracting paid claims from the estimated ultimate liabilities.

Expected Loss Ratio (ELR) Method

This method estimates ultimate losses for an underwriting year by applying an estimated loss ratio to the earned premium for that underwriting year. Although the method is insensitive to actual reported or paid losses, it can often be useful at the early stages of development when very few losses have been reported or paid, and the principal sources of information available to the Company consist of information obtained during pricing and qualitative information supplied by the cedant. However, the lack of sensitivity to reported or paid losses means that the method is usually inappropriate at later stages of development.

Bornhuetter-Ferguson (B-F) Methods (Reported or Paid)

These methods aim to address the variability at early stages of development and incorporates external information such as pricing. The B-F methods are more sensitive to reported and paid losses than the ELR method, and can be seen as a blend of the ELR and CL development methods. Unreported (unpaid) claims are calculated using an expected reporting (payment) pattern and an externally determined estimate of ultimate liabilities (usually determined by multiplying an *a priori* loss ratio with estimates of premium volume). The accuracy of the *a priori* loss ratio is a critical assumption in this method. Usually *a priori* loss ratios are initially determined on the basis of pricing information, but may also be adjusted to reflect other information that subsequently emerges about underlying loss experience.

Benktander (B-K) Methods (Reported or Paid)

These methods can be viewed as a blend between the CL Development and the B-F methods described above. The blend is based on predetermined weights at each development stage that depend on the reported (paid) development patterns.

Loss Event Specific Method

The ultimate losses estimated under this method are derived from estimates of specific events based on reported claims, client and broker discussions, review of potential exposures, market loss estimates, modeled analysis and other event specific criteria.

Method Weights

In determining the loss reserves, the Company often relies on a blend of the results from two or more methods (e.g., weighted averages). The judgment as to which of the above method(s) is most appropriate for a particular underwriting year and reserving cell could change over time as new information emerges regarding underlying loss activity and other data issues. Furthermore, as each line is typically composed of several reserving cells, it is likely that the reserves for the line will be dependent on several reserving methods. This is because reserves for a line are the result of aggregating the reserves for each constituent reserving cell and that a different method could be selected for each reserving cell.

The principal reserving methods used for each of the Specialty segment and P&C segment were ELR, Reported/Paid B-F, Reported/Paid B-K and Reported/Paid CL, with the exception of catastrophe risks within the P&C segment where the principal reserving methods used were ELR based on exposure analysis and Loss event specific methods.

(b) Life and Health Reserves

The reconciliation of the beginning and ending gross and net liability for life and health reserves for the years ended December 31, 2018, 2017 and 2016 was as follows (in thousands of U.S. dollars):

	2018	2017[1]	2016[1]
Gross liability at beginning of period	**$ 2,098,759**	$ 1,722,330	$ 1,799,643
Reinsurance recoverable at beginning of period	**9,287**	2,726	3,046
Net liability at beginning of period	**$ 2,089,472**	$ 1,719,604	$ 1,796,597
Liability acquired related to the acquisition of Aurigen	**—**	67,916	—
Net incurred losses	**1,024,608**	835,415	681,159
Net losses paid	**(818,916)**	(714,151)	(618,599)
Effects of foreign exchange rate changes	**(108,913)**	180,688	(139,553)
Net liability at end of period	**$ 2,186,251**	$ 2,089,472	$ 1,719,604
Reinsurance recoverable at end of period	**11,829**	9,287	2,726
Gross liability at end of period	**$ 2,198,080**	$ 2,098,759	$ 1,722,330

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

The increase in net losses incurred and paid in 2018 compared to 2017 was primarily due to growth in the business and the inclusion of losses and loss expenses from the acquisition of Aurigen for a full year in 2018 compared to three quarters in 2017.

The increase in net losses incurred and paid in 2017 compared to 2016 was primarily due to the inclusion of Aurigen in 2017, following the acquisition in April 2017.

The Company used interest rate assumptions to estimate its liabilities for policy benefits for life and annuity contracts which ranged from 0% to 7% at December 31, 2018 and 2017.

(c) Losses and Loss Expenses

Losses and loss expenses in the Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016 were comprised as follows (in thousands of U.S. dollars):

	2018	2017[1]	2016[1]
Non-life	**$ 3,168,647**	$ 3,005,567	$ 2,566,932
Life and Health	**1,024,608**	835,415	681,159
Losses and loss expenses	**$ 4,193,255**	$ 3,840,982	$ 3,248,091

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

Non-life net incurred and paid losses and loss expense development

The net incurred and paid losses and loss expenses development by accident year for each of the years ended December 31, 2012 through 2018, and the total of IBNR plus expected development on reported claims included within the net incurred claims amounts, as at each of the years ended December 31, 2012 through 2018, are presented in the tables below (in thousands of U.S. dollars).

The information presented below for incurred and paid claims development for each of the years ended December 31, 2012 through 2017 and the average annual percentage payout of incurred claims by age, net of reinsurance, is presented as supplementary information and is unaudited.

NET INCURRED LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - NON-LIFE

	For the year ended December 31,							December 31, 2018
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Total of IBNR plus expected development on reported claims**
2012	$2,637,210	$2,448,549	$2,293,018	$2,187,326	$2,155,244	$2,186,867	$ 2,163,492	$ 112,104
2013		2,871,364	2,697,368	2,521,182	2,467,928	2,434,587	2,407,116	162,521
2014			2,829,647	2,612,495	2,501,579	2,469,465	2,481,728	236,684
2015				2,882,763	2,593,207	2,487,617	2,502,972	334,162
2016					2,907,786	2,673,642	2,614,830	462,738
2017						2,971,510	2,934,163	829,431
2018							**3,022,655**	**2,250,412**
Total							**$18,126,956**	**$ 4,388,052**

NET PAID LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - NON-LIFE

	For the year ended December 31,						
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2012	$ 283,062	$1,052,510	$1,436,451	$1,603,321	$1,706,739	$1,797,576	$ 1,847,036
2013		242,288	1,292,908	1,644,109	1,845,155	1,975,252	2,068,311
2014			304,066	1,311,788	1,614,941	1,823,531	1,964,856
2015				302,077	1,217,019	1,615,742	1,836,225
2016					324,682	1,366,673	1,722,052
2017						386,326	1,503,129
2018							**259,237**
Total							**$11,200,846**
Net reserves for Accident Years and exposures included in the triangles							$ 6,926,110
All outstanding liabilities before Accident Year 2012, net of reinsurance							1,636,500
Total outstanding liabilities for unpaid claims							**$ 8,562,610**

AVERAGE ANNUAL PERCENTAGE PAYOUT OF INCURRED CLAIMS BY AGE, NET OF REINSURANCE - NON-LIFE

Years	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Non-life	12%	39%	15%	8%	5%	4%	2%

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(1) The table above (and each of the three tables below for property, casualty and specialty) reflects losses incurred and paid losses translated to U.S. dollars at the exchange rate as of the balance sheet date whereas the losses and loss expenses in the Consolidated Statement of Operations reflected losses incurred at the average exchange rate for the period.

NET INCURRED LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - PROPERTY

	For the year ended December 31,							December 31, 2018
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Total of IBNR plus expected development on reported claims**
2012	$ 660,871	$ 660,159	$ 582,063	$ 565,743	$ 550,347	$ 550,104	$ 538,271	$ 5,530
2013		679,013	576,448	544,485	529,249	524,968	514,596	1,160
2014			515,968	471,603	450,264	447,732	444,283	2,067
2015				590,211	548,168	523,012	515,396	7,738
2016					721,172	678,612	632,146	14,941
2017						1,027,772	1,063,309	92,550
2018							**850,603**	**545,540**
Total							**$ 4,558,604**	**$ 669,526**

NET PAID LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - PROPERTY

	For the year ended December 31,						
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2012	$ 99,815	$ 356,469	$ 449,848	$ 483,969	$ 495,215	$ 504,333	$ 507,376
2013		88,603	337,052	437,800	472,185	490,469	493,538
2014			93,134	323,623	387,815	414,068	423,758
2015				95,282	354,313	442,735	471,242
2016					134,960	455,747	536,791
2017						223,180	728,508
2018							**76,618**
Total							**$ 3,237,831**

Net reserves for Accident Years and exposures included in the triangles	$ 1,320,773
All outstanding liabilities before Accident Year 2012, net of reinsurance	105,071
Total outstanding liabilities for unpaid claims	**$ 1,425,844**

AVERAGE ANNUAL PERCENTAGE PAYOUT OF INCURRED CLAIMS BY AGE, NET OF REINSURANCE - PROPERTY

Years	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Property	18%	49%	16%	6%	3%	1%	1%

NET INCURRED LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - CASUALTY

	For the year ended December 31,							December 31, 2018
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Total of IBNR plus expected development on reported claims**
2012	$ 690,205	$ 676,404	$ 648,784	$ 608,535	$ 591,092	$ 599,405	$ 594,889	$ 79,586
2013		799,716	796,471	747,464	729,478	725,012	721,474	136,016
2014			899,068	874,854	854,935	860,154	876,455	194,954
2015				897,153	838,361	814,108	856,355	262,967
2016					847,086	798,784	819,511	315,251
2017						758,715	727,301	399,584
2018							**939,700**	**800,587**
Total							**$ 5,535,685**	**$ 2,188,945**

NET PAID LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - CASUALTY

	For the year ended December 31,						
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2012	$ 51,528	$ 135,448	$ 205,164	$ 278,087	$ 334,143	$ 392,529	$ 423,467
2013		50,403	158,653	266,362	347,899	418,193	479,692
2014			70,987	207,906	311,431	411,596	499,040
2015				66,675	186,585	299,015	397,022
2016					36,622	165,828	265,586
2017						60,845	178,201
2018							**61,932**
Total							**$ 2,304,940**

Net reserves for Accident Years and exposures included in the triangles	$ 3,230,745
All outstanding liabilities before Accident Year 2012, net of reinsurance	1,436,281
Total outstanding liabilities for unpaid claims	**$ 4,667,026**

AVERAGE ANNUAL PERCENTAGE PAYOUT OF INCURRED CLAIMS BY AGE, NET OF REINSURANCE - CASUALTY

Years	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Casualty	7%	15%	13%	12%	10%	9%	5%

NET INCURRED LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - SPECIALTY

	For the year ended December 31,							December 31, 2018
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Total of IBNR plus expected development on reported claims**
2012	$1,286,134	$1,111,986	$1,062,171	$1,013,048	$1,013,805	$1,037,358	$ 1,030,332	$ 26,988
2013		1,392,635	1,324,449	1,229,233	1,209,201	1,184,607	1,171,046	25,345
2014			1,414,611	1,266,038	1,196,380	1,161,579	1,160,990	39,663
2015				1,395,399	1,206,678	1,150,497	1,131,221	63,457
2016					1,339,528	1,196,246	1,163,173	132,546
2017						1,185,023	1,143,553	337,297
2018							**1,232,352**	**904,285**
Total							**$ 8,032,667**	**$ 1,529,581**

NET PAID LOSSES AND LOSS EXPENSES DEVELOPMENT TABLE - SPECIALTY

	For the year ended December 31,						
Accident year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2012	$ 131,719	$ 560,593	$ 781,439	$ 841,265	$ 877,381	$ 900,714	$ 916,193
2013		103,282	797,203	939,947	1,025,071	1,066,590	1,095,081
2014			139,945	780,259	915,695	997,867	1,042,058
2015				140,120	676,121	873,992	967,961
2016					153,100	745,098	919,675
2017						102,301	596,420
2018							**120,687**
Total							**$ 5,658,075**

Net reserves for Accident Years and exposures included in the triangles	$ 2,374,592
All outstanding liabilities before Accident Year 2012, net of reinsurance	95,148
Total outstanding liabilities for unpaid claims	**$ 2,469,740**

AVERAGE ANNUAL PERCENTAGE PAYOUT OF INCURRED CLAIMS BY AGE, NET OF REINSURANCE - SPECIALTY

Years	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Specialty	11%	50%	15%	7%	4%	2%	2%

The Company is predominantly a reinsurer of primary insurers and does not have access to claim frequency information held by our cedants due to the majority of the Company’s business being written on a proportional basis. As such, the Company considers it impracticable to disclose information on the frequency of claims.

The Company has concluded that it is impracticable to provide net incurred and paid losses and loss expenses development data for 10 years and has therefore presented the data for 7 years. As disclosed in the notes to the consolidated financial statements for the year ended December 31, 2016, the Company provided 5 years of data in 2016 and agreed to include an additional year of data for each subsequent year such that by 2021 a full 10 years of data will be disclosed.

The reconciliation of the net incurred and paid claims development information above to the Non-life reserves in the Consolidated Balance Sheet at December 31, 2018 was as follows (in thousands of U.S. dollars):

	December 31, 2018
Total outstanding liability for unpaid claims	
Property	$ 1,425,844
Casualty	4,667,026
Specialty	2,469,740
Total outstanding liabilities for unpaid claims	$ 8,562,610
Unallocated loss expenses	$ 148,700
U.S. health net reserves[(1)]	327,810
Other	5,310
Total other liabilities	$ 481,820
Net liability at end of year	$ 9,044,430
Reinsurance recoverable on paid and unpaid claims	
Property	$ 545,300
Casualty	63,161
Specialty	242,485
Reinsurance recoverable at end of year	$ 850,946
Gross liability at end of year	$ 9,895,376

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(1) U.S. health business is not meaningful to include in the development tables as the estimated average duration of the health reserves is less than one year and substantially all claims are expected to be paid within two years, based on historical payout patterns.

9. Reinsurance

(a) Reinsurance Recoverable on Paid and Unpaid Losses

The Company uses retrocessional agreements to reduce its exposure to risk of loss on reinsurance assumed. These agreements provide for recovery from retrocessionaires of a portion of losses and loss expenses. The Company remains liable to its cedants to the extent that the retrocessionaires do not meet their obligations under these agreements, and therefore the Company evaluates the financial condition of its reinsurers and monitors concentration of credit risk on an ongoing basis. The Company actively manages its reinsurance exposures by generally selecting retrocessionaires having a credit rating of A- or higher. In certain cases where an otherwise suitable retrocessionaire has a credit rating lower than A-, the Company generally requires the posting of collateral, including escrow funds and letters of credit, as a condition to its entering into a retrocession agreement. The Company regularly reviews its reinsurance recoverable balances to estimate an allowance for uncollectible amounts based on quantitative and qualitative factors. There was no allowance for uncollectible reinsurance recoverable at December 31, 2018 and 2017 deemed necessary based on the quantitative and qualitative analysis as collectability was determined to be reasonably assured and given that any recoverables related to reinsurers with ratings below A- or unrated are collateralized.

(b) Ceded Reinsurance

Net premiums written, net premiums earned and losses and loss expenses are reported net of reinsurance in the Company's Consolidated Statements of Operations. Assumed, ceded and net amounts for the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands of U.S. dollars):

2018	Premiums Written	Premiums Earned	Losses and Loss Expenses
Assumed	**$ 6,299,929**	**$ 5,987,931**	**$ 4,601,564**
Ceded	**496,565**	**474,121**	**408,309**
Net	**$ 5,803,364**	**$ 5,513,810**	**$ 4,193,255**
2017			
Assumed	$ 5,587,894	$ 5,471,546	$ 4,458,290
Ceded	467,968	446,565	617,308
Net	$ 5,119,926	$ 5,024,981	$ 3,840,982
2016			
Assumed	$ 5,356,942	$ 5,343,831	$ 3,412,648
Ceded	403,472	374,235	164,557
Net	$ 4,953,470	$ 4,969,596	$ 3,248,091

10. Debt

The debt outstanding related to senior notes and capital efficient notes (CENts) and the carrying value recorded in the Consolidated Balance Sheets at December 31, 2018 and 2017 was comprised as follows (in thousands):

		December 31, 2018		December 31, 2017	
Issuer	Commitment	Carrying Value	Fair Value	Carrying Value	Fair Value
Debt related to senior notes					
PartnerRe Finance B LLC	$ 500,000	**$ 500,000**	**$ 515,518**	$ 500,000	$ 534,179
PartnerRe Ireland Finance DAC	€ 750,000	**849,017**	**825,546**	884,824	882,717
Total Debt related to senior notes		**$ 1,349,017**	**$ 1,341,064**	$ 1,384,824	$ 1,416,896
Debt related to CENts					
PartnerRe Finance II Inc.	$ 63,384	**$ 70,989**	**$ 59,299**	$ 70,989	$ 61,271

PartnerRe Finance B LLC and PartnerRe Finance II Inc. (collectively, U.S. finance entities) were utilized to issue U.S. dollar denominated debt while PartnerRe Ireland Finance DAC (Irish finance entity) was formed in order to issue Euro denominated senior notes.

The U.S. finance entities are wholly-owned by PartnerRe U.S. Corporation, a holding company indirectly 100% owned by the Company. The Irish finance entity is wholly-owned by PartnerRe Holdings Europe Limited, a wholly owned subsidiary of the Company. The proceeds received by the U.S. finance entities upon issuance of debt were provided to PartnerRe U.S. Corporation in exchange for notes receivable for the same principal and interest terms as the related debt issued externally. The proceeds received by the Irish finance entity upon issuance of debt were provided to the Company and PartnerRe U.S. Corporation in exchange for notes receivable.

The Company determined that the U.S. entities were VIEs; however, the Company was not the primary beneficiary and, as a result, did not consolidate the U.S. finance entities. The intercompany notes payable by PartnerRe U.S. Corporation to the U.S. finance entities are recorded within Debt related to senior notes and Debt related to CENts in the Consolidated Balance Sheets and the related interest as interest expense in the Consolidated Statements of Operations.

The Company determined that PartnerRe Ireland Finance DAC is a VIE and the Company is the primary beneficiary. As a result, the debt issued externally has been reflected as Debt related senior notes in the Consolidated Balance Sheets and the related interest as interest expense in the Consolidated Statements of Operations. The cash proceeds and intercompany notes were issued by PartnerRe Ireland Finance DAC to the Company and PartnerRe U.S. Corporation, which has been eliminated on consolidation, together with the related interest.

Debt related to senior notes

In March 2010, PartnerRe Finance B LLC issued 5.500% senior notes with the option to redeem, in whole or in part, at any time. PartnerRe U.S. Corporation has agreed to pay the related 5.500% note payable to PartnerRe Finance B LLC for any unpaid principal amount on June 1, 2020. Interest on these notes is payable semi-annually at an annual fixed rate of 5.500% and cannot be deferred. These senior notes are ranked as senior unsecured obligations of PartnerRe Finance B LLC and the Company has fully and unconditionally guaranteed all obligations of PartnerRe Finance B LLC related to these senior notes. The Company's obligations under this guarantee are senior and unsecured and rank equally with all other senior unsecured indebtedness.

In September 2016, PartnerRe Ireland Finance DAC issued 1.250% senior notes at a price of 99.144% of the principal amount and are listed in the main securities market of the Irish Stock Exchange. Interest is payable annually commencing on September 15, 2017. These senior notes may be redeemed at the option of the issuer, in whole or in part, at any time from September 15, 2026, with any early redemption prior to that date subject to the Bermuda Regulatory Authority's approval. These senior notes are ranked as senior unsecured obligations of PartnerRe Ireland Finance DAC. The Company has fully and unconditionally guaranteed all obligations of PartnerRe Ireland Finance DAC under these senior notes. The Company's obligations under this guarantee are senior and unsecured and rank equally with all other senior unsecured indebtedness.

On November 1, 2016, PartnerRe Finance A LLC early redeemed the 6.875% senior notes, with an aggregate principle of $250 million for a price of $272 million and, as a result, recorded a loss on redemption of debt of $22 million in the Company's Statement of Operations during 2016, representing a make whole provision related to future interest foregone as a result of the early retirement.

Debt related to CENts

In November 2006, PartnerRe Finance II Inc. issued Fixed-to-Floating Rate Junior Subordinated CENts with a principal amount of $250 million and on March 13, 2009, purchased and retired $187 million of this principal amount. As a result, the remaining aggregate principal amount of the CENts is $63 million. In November 2006, PartnerRe U.S. Corporation issued a Fixed-to-Floating Rate promissory note, with a principal amount of $258 million to PartnerRe Finance II Inc. due December 1, 2066. In March 2009, $187 million of the principal amount was extinguished. As a result, the remaining principal amount of the intercompany promissory note, which is included as Debt related to CENts in the Consolidated Balance Sheet, is $71 million.

The CENts have been redeemable at the option of the issuer, in whole or in part, since December 1, 2016 and are ranked as junior subordinated unsecured obligations of PartnerRe Finance II Inc. The Company has fully and unconditionally guaranteed on a subordinated basis all obligations of PartnerRe Finance II Inc. under the CENts. The Company's obligations under this guarantee are unsecured and rank junior in priority of payments to the Company's senior notes.

Interest on both the CENts and the promissory note was payable semi-annually through to December 1, 2016 at an annual fixed rate of 6.440% and payable quarterly thereafter until maturity at an annual rate of 3-month LIBOR plus a margin equal to 2.325%, reset quarterly. Since December 1, 2016, PartnerRe Finance II Inc. has the right to defer one or more interest payments for up to ten years to December 1, 2026.

11. Shareholders' Equity

Authorized Shares

At December 31, 2018 and 2017, the total authorized share capital (common and preferred) of the Company was $200 million.

Common Shares

Upon acquisition by Exor N.V. in March 2016, the publicly traded common shares were cancelled and delisted from the NYSE and one common share at $1.00 par value was issued to Exor N.V., representing 100% common share ownership of the Company's common shareholders' equity.

On October 27, 2016, Exor N.V. was renamed EXOR Nederland N.V.

On November 24, 2016, the one common share of $1.00 par value was subdivided into 100 million authorized and issued Class A shares of $0.00000001 par value each. At December 31, 2018 and 2017, the issued and outstanding common share capital was $1.00, owned by EXOR Nederland N.V.

Redeemable Preferred Shares

At December 31, 2018 and 2017, the Company's issued and outstanding redeemable preferred shares, each with a par value of $1.00 per share, were as follows (in millions of U.S. dollars, except number of shares and percentage amounts):

	Series F	Series G	Series H	Series I	Total
Date of issuance	February 2013	May 2016	May 2016	May 2016	
Number of preferred shares outstanding	2,679,426	6,415,264	11,753,798	7,320,574	28,169,062
Annual dividend rate	5.875%	6.5%	7.25%	5.875%	
Underwriting discounts and commissions (1)	$ 2.3	$ 5.4	$ 9.5	$ 6.4	$ 23.6
Aggregate liquidation value, at $25 per share	$ 67.0	$ 160.4	$ 293.8	$ 183.0	$ 704.2

(1) Underwriting discounts and commissions represent the original amounts paid to issue Series D, E and F shares. These amounts were reallocated on a pro-rata basis between the previously issued and the newly issued shares as a result of the share exchange in May 2016 for $nil consideration described below.

Following the acquisition by Exor N.V., on April 1, 2016, the Company launched an exchange offer whereby participating preferred shareholders could exchange any or all existing preferred shares for newly issued preferred shares reflecting, subject to certain exceptions, an extended call date of the fifth anniversary from the date of issuance, and a restriction on payment of dividends on common shares declared with respect to any fiscal quarter to an amount not exceeding 67% of net income during such fiscal quarter until December 31, 2020. The terms of the newly issued preferred shares would otherwise remain identical in all material respects to the Company's existing preferred shares, as described below. On May 1, 2016, 6,415,264 Series D, 11,753,798 Series E and 7,320,574 Series F preferred shares were exchanged for an equivalent number of Series G, Series H and Series I preferred shares, respectively. There was no consideration paid and no increase in fair value of the preferred shares as a result of the exchange and, accordingly, the exchange was considered a modification of the preferred shares with no gain or loss or deemed dividend arising as a result of the exchange. As a result of the exchange offer, the Company cancelled the Series D, E and F preferred shares tendered in the exchange offer. Non-tendered preferred shares not exchanged and the new Series G, H and I preferred shares remained outstanding and continued to be listed on the NYSE.

On November 1, 2016, the remaining Series D and E preferred shares were redeemed at $25 per share for an aggregate liquidation value of $150 million. In connection with the redemption, the Company recognized a loss on redemption of preferred shares of $5 million in 2016.

The redemption price of all preferred shares is $25 per share plus accrued and unpaid dividends. In the event of liquidation of the Company, the preferred shares rank on parity with each other, but rank senior to the common shares, and the holders of the preferred shares would receive a distribution of $25 per share. In addition, upon liquidation, non-cumulative Series F and I preferred shares would receive any declared but unpaid dividends while the cumulative Series G and H preferred shares would receive any accrued but unpaid dividends.

The Company may redeem the Series F preferred shares at any time or in part from time to time since March 1, 2018.

The Company may redeem each of the Series G, H and I preferred shares on or after May 1, 2021.

Dividends on the Series F and I preferred shares are non-cumulative and are payable quarterly. Dividends on the Series G and H preferred shares are cumulative from the date of issuance and are payable quarterly in arrears.

12. Dividend Restrictions and Statutory Requirements

The Company’s ability to pay common and preferred shareholders’ dividends and its corporate expenses is dependent mainly on cash dividends from PartnerRe Bermuda, PartnerRe Europe, PartnerRe U.S. and PartnerRe Asia (collectively, the reinsurance subsidiaries), which are the Company’s most significant subsidiaries. The payment of such dividends by the reinsurance subsidiaries to the Company is limited under Bermuda and Irish laws and certain statutes of various U.S. states in which PartnerRe U.S. is domiciled. The restrictions are generally based on net income and/or certain levels of policyholders’ earned surplus as determined in accordance with the relevant statutory accounting practices. In addition, in accordance with the terms of the merger agreement between the Company and Exor N.V., subsequent to preferred share exchange (see Note 11), the Company's payment of dividends on common shares declared with respect to any fiscal quarter is restricted to an amount not exceeding 67% of net income per fiscal quarter until December 31, 2020. At December 31, 2018, given the Company complied with its Bermuda solvency requirements, there were no other restrictions on the Company’s ability to pay common and preferred shareholders’ dividends from its retained earnings, except for the reinsurance subsidiaries’ dividend restrictions described below.

The reinsurance subsidiaries are required to file annual statements with insurance regulatory authorities prepared on an accounting basis prescribed or permitted by such authorities (statutory basis), maintain minimum levels of solvency and liquidity and comply with risk-based capital requirements and licensing rules. At December 31, 2018, the reinsurance subsidiaries’ solvency, liquidity and risk-based capital amounts were in excess of the minimum levels required. The typical adjustments to insurance statutory basis amounts to convert to U.S. GAAP include elimination of certain statutory reserves, deferral of certain acquisition costs, recognition of goodwill, intangible assets and deferred income taxes that are limited on a statutory basis, valuation of bonds at fair value and presentation of ceded reinsurance balances gross of assumed balances.

PartnerRe Bermuda may declare dividends subject to it continuing to meet its minimum solvency and capital requirements, which are to hold statutory capital and surplus equal to or exceeding the Target Capital Level, which is equivalent to 120% of the Enhanced Capital Requirement (ECR). The ECR is calculated with reference to the Bermuda Solvency Capital Requirement model, which is a risk-based capital model. At December 31, 2018, the maximum dividend that PartnerRe Bermuda could pay without prior regulatory approval was approximately $921 million.

Effective January 1, 2016, PartnerRe Europe and PartnerRe Ireland are subject to the Solvency II European Directive (Solvency II Regulations). The Solvency II Regulations relate to the solvency standards applicable to insurers and reinsurers and lays down, at the level of PartnerRe Europe and PartnerRe Ireland, the minimum amounts of financial resources required in order to cover the risks to which it is exposed and the principles that should guide its overall risk management and reporting. PartnerRe Europe may declare dividends subject to it continuing to meet its Solvency II requirements, which are to hold available capital, calculated on a Solvency II balance sheet basis, in excess of the solvency capital requirement (SCR). The maximum dividend is limited to “profits available for distribution”, which consist of accumulated realized profits less accumulated realized losses. The reporting deadline for the annual Solvency II submission is April 22, 2019.

PartnerRe U.S. may declare dividends subject to it continuing to meet its minimum solvency and capital requirements and is generally limited to paying dividends from earned surplus. The maximum dividend that can be declared and paid without prior approval is limited, to the lesser of net investment income or 10% of its total statutory capital and surplus as of the most recently filed annual statement. However, as a condition of the acquisition by Exor N.V., PartnerRe U.S. committed that it would not take action to pay any dividend for the two-year period from March 18, 2016 to March 18, 2018 without the prior approval of the New York State Department of Financial Services.

PartnerRe Asia may declare dividends from unappropriated profits subject to meeting the capital requirements, as laid out by the Monetary Authority of Singapore. As a licensed reinsurer, PartnerRe Asia is required to maintain minimum capital of SGD25 million. In addition, PartnerRe Asia is required to establish and maintain separate insurance funds for each class of business that it writes, for both Singapore and offshore policies. The solvency requirement in respect of each insurance fund shall at all times be not less than the total risk requirement of the fund (determined by reference to three components being insurance risks, asset portfolio risks and asset concentration risks) and above 120% of the total risk requirement on a Company basis. The declaration of a dividend by PartnerRe Asia is subject to conditions and requirements being met as specified under the Companies Act and the Insurance Act and its associated regulations. The filing date for the annual submission is March 31, 2019.

The statutory financial statements and returns of the Company’s reinsurance subsidiaries as at, and for the year ended, December 31, 2018 are due to be submitted to the relevant regulatory authorities later in 2019, with different filing dates in each jurisdiction. In certain jurisdictions, the statutory financial statements and returns are subject to the review and final approval of the relevant regulatory authorities. As a result, the comparative figures in the tables below reflect final figures submitted to regulatory authorities for 2017 and 2016.

The statutory net income (loss) of PartnerRe Bermuda, PartnerRe Europe, PartnerRe U.S. and PartnerRe Asia for the years ended December 31, 2018, 2017 and 2016 was as follows (in millions of U.S. dollars):

	2018	2017	2016
PartnerRe Bermuda	**$ 138**	$ (69)	$ 531
PartnerRe Europe	**$ 1**	$ 153	$ 61
PartnerRe U.S.	**$ (197)**	$ 24	$ 72
PartnerRe Asia	**$ (40)**	$ 18	$ 43

The required and actual statutory capital and surplus of PartnerRe Bermuda, PartnerRe Europe, PartnerRe U.S. and PartnerRe Asia at December 31, 2018 and 2017 was as follows (in millions of U.S. dollars):

	PartnerRe Bermuda		PartnerRe Europe		PartnerRe U.S.		PartnerRe Asia	
	2018	2017	2018	2017	2018	2017	2018	2017
Required statutory capital and surplus	**$ 2,260**	$ 1,767	**$ 1,488**	$ 1,639	**$ 732**	$ 662	**$ 56**	$ 57
Actual statutory capital and surplus	**$ 4,274**	$ 3,683	**$ 2,169**	$ 2,215	**$ 1,094**	$ 1,336	**$ 208**	$ 246

At December 31, 2018 and 2017, the Company has Swiss and French branches of PartnerRe Europe that are regulated by the Central Bank of Ireland, as prescribed by the EU Reinsurance Directive.

In addition to the required statutory capital and surplus requirements for the reinsurance subsidiaries in the table above, the Company is required to assess its solvency capital needs both at a Group and subsidiary level. The Company's capital requirements determine the amount of capital available to be declared as dividends to its shareholders. As Group Supervisor, the Bermuda Monetary Authority is tasked with assessing the financial condition of the Group and coordinates the dissemination of information to other relevant competent authorities for the purpose of assisting in their regulatory functions and the enforcement of regulatory action against the Company or any of its subsidiaries, including the power to impose restrictions on the ability of the relevant subsidiaries to declare dividends to the Company, and the ability of the Company to pay dividends to shareholders. In addition, the Company is required to maintain the Group ECR imposed by the BMA under Bermuda law.

13. Taxation

The Company and its Bermuda domiciled subsidiaries are not subject to Bermuda income or capital gains tax under current Bermuda law. In the event that there is a change in current law such that taxes on income or capital gains are imposed, the Company and its Bermuda domiciled subsidiaries would be exempt from such tax until March 2035 pursuant to the Bermuda Exempted Undertakings Tax Protection Act of 1966.

The Company has subsidiaries and branches that operate in various other jurisdictions around the world that are subject to tax in the jurisdictions in which they operate. The significant jurisdictions in which the Company's subsidiaries and branches are subject to tax are Canada, France, Ireland, Singapore, Switzerland and the U.S.

Income tax returns are open for examination for the tax years 2013-2018 in Hong Kong, 2014-2018 in Canada, Ireland, and the U.S., 2015-2018 in Singapore, and 2016-2018 in France and Switzerland. As a global organization, the Company may be subject to a variety of transfer pricing or permanent establishment challenges by taxing authorities in various jurisdictions. While management believes that adequate provision has been made in the Consolidated Financial Statements for any potential assessments that may result from tax examinations for all open tax years, the completion of tax examinations for open years may result in changes to the amounts recognized in the Consolidated Financial Statements.

Income tax (benefit) expense for the years ended December 31, 2018, 2017 and 2016 was as follows (in thousands of U.S. dollars):

	2018	2017	2016
Current income tax (benefit) expense			
U.S.	**$ (6,872)**	$ (10,031)	$ 2,798
Non U.S.	**33,887**	76,425	26,913
Total current income tax expense	**$ 27,015**	$ 66,394	$ 29,711
Deferred income tax (benefit) expense			
U.S.	**$ (40,318)**	$ 5,538	$ 10,070
Non U.S.	**3,256**	(58,702)	(127)
Total deferred income tax (benefit) expense	**$ (37,062)**	$ (53,164)	$ 9,943
Unrecognized tax expense (benefit)			
U.S.	**$ —**	$ —	$ —
Non U.S.	**1,113**	(2,872)	(13,731)
Total unrecognized tax expense (benefit)	**$ 1,113**	$ (2,872)	$ (13,731)
Total income tax (benefit) expense			
U.S.	**$ (47,190)**	$ (4,493)	$ 12,868
Non U.S.	**38,256**	14,851	13,055
Total income tax (benefit) expense	**$ (8,934)**	$ 10,358	$ 25,923

(Loss) income before taxes attributable to the Company’s domestic and foreign operations and a reconciliation of the actual income tax rate to the amount computed by applying the effective tax rate of 0% under Bermuda (the Company’s domicile) law to (loss) income before taxes was as follows for the years ended December 31, 2018, 2017 and 2016 (in thousands of U.S. dollars):

	2018	2017	2016
Domestic (Bermuda)	**$ 33,759**	$ 82,219	$ 334,559
Foreign	**(128,687)**	192,160	138,672
(Loss) income before taxes	**$ (94,928)**	$ 274,379	$ 473,231
Reconciliation of effective tax rate (% of (loss) income before taxes)			
Expected tax rate	**0.0%**	0.0%	0.0%
Foreign taxes at local expected tax rates	**14.3**	11.4	6.9
Impact of foreign exchange gains or losses	**(4.2)**	(3.2)	2.2
Unrecognized tax benefit	**(1.2)**	(1.0)	(2.9)
Tax-exempt income and expenses not deductible	**7.3**	(5.2)	(3.2)
Foreign branch tax	**(4.1)**	(24.6)	0.3
Valuation allowance	**(12.3)**	24.8	0.3
Outside basis difference in subsidiary	**6.7**	—	—
Other	**2.9**	1.6	1.9
Actual tax rate	**9.4%**	3.8%	5.5%

During the year ended December 31, 2017, both the United States and France enacted tax rate changes. On December 22, 2017, the United States enacted the Tax Cuts and Jobs Act ("TCJA") to reduce the corporate income tax rate from 35% to 21% effective for taxable years beginning after December 31, 2017. On December 30, 2017, France enacted legislation to progressively reduce the current corporate income tax rate of 34.43% to specific scheduled effective rates, including the applicable surtax, for each subsequent year end which includes 28.92% on the first €500,000 taxable income and 34.43% on the remainder for 2018 decreasing to 25.83% for 2022. As a result, deferred tax assets and liabilities in the United States and France were revalued at December 31, 2017, resulting in an income tax expense of $5 million for the year ended December 31, 2017. During the year ended December 31, 2018, the Company completed its review of income tax enactment-date effects, including the revaluation of December 31, 2017 deferred tax assets and liabilities in the United States and France, and determined no significant measurement period adjustments were required.

The components of net tax assets and liabilities at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

	December 31, 2018	December 31, 2017
Net tax assets	**$ 157,690**	$ 133,169
Net tax liabilities	**(101,525)**	(154,947)
Net tax assets (liabilities)	**$ 56,165**	$ (21,778)

	December 31, 2018	December 31, 2017
Net current tax assets	**$ 102,091**	$ 53,900
Net deferred tax liabilities	**(37,183)**	(67,737)
Net unrecognized tax benefit	**(8,743)**	(7,941)
Net tax assets (liabilities)	**$ 56,165**	$ (21,778)

Deferred tax assets and liabilities reflect the tax impact of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. Significant components of the net deferred tax assets and liabilities at December 31, 2018 and 2017 were as follows (in thousands of U.S. dollars):

	December 31, 2018	December 31, 2017
Deferred tax assets		
Discounting of loss reserves and adjustment to life policy reserves	**$ 27,103**	$ 34,806
Foreign tax credit carryforwards	**161,177**	163,134
Tax loss carryforwards	**49,721**	36,405
Unearned premiums	**26,071**	14,425
Other deferred tax assets	**47,877**	31,566
	$ 311,949	$ 280,336
Valuation allowance	**(189,090)**	(185,615)
Deferred tax assets	**$ 122,859**	$ 94,721
Deferred tax liabilities		
Deferred acquisition costs	**$ 45,558**	$ 29,204
Goodwill and other intangibles	**65,114**	70,674
Equalization reserves	**16,606**	27,252
Unrealized appreciation and timing differences on investments	**5,012**	13,361
Unrealized appreciation and timing differences on foreign exchange revaluations	**21,117**	13,413
Other deferred tax liabilities	**6,635**	8,554
Deferred tax liabilities	**$ 160,042**	$ 162,458
Net deferred tax liabilities	**$ (37,183)**	$ (67,737)

Realization of the deferred tax assets is dependent on generating sufficient taxable income in future periods. Although realization is not assured, management believes that it is more likely than not that the deferred tax assets will be realized. The valuation allowance recorded at December 31, 2018 relates to a foreign tax credit carryforward of $161 million in Ireland, other deferred foreign tax of $7 million in Ireland, net deferred tax assets of $13 million in Canada and $8 million in the United States. The valuation allowance recorded at December 31, 2017 related to a foreign tax credit carryforward of $163 million in Ireland, other deferred foreign tax of $7 million in Ireland, net deferred tax assets of $10 million in Canada and $7 million in the United States.

At December 31, 2018, the deferred tax assets (after valuation allowance) included tax loss carryforwards of $17 million in Singapore and $1 million in Hong Kong that can be carried forward for an unlimited period of time, and $21 million in the United States that predominantly relates to non-life insurance company taxable losses and can be carried forward for 20 years. At December 31, 2017, the deferred tax assets (after valuation allowance) included tax loss carryforwards of $18 million in Singapore, $8 million in Ireland, and $2 million in Hong Kong, which can be carried forward for an unlimited period of time.

The total amount of unrecognized tax benefits for the years ended December 31, 2018, 2017 and 2016 was as follows (in thousands of U.S. dollars):

	January 1, 2018	Changes in tax positions taken during a prior year	Tax positions taken during the current year	Change as a result of a lapse of the statute of limitations	Impact of the change in foreign currency exchange rates	December 31, 2018
Unrecognized tax benefits that, if recognized, would impact the effective tax rate	**$ 6,460**	**$ 73**	**$ 346**	**$ —**	**$ (240)**	**$ 6,639**
Interest and penalties recognized on the above	**1,481**	**691**	**—**	**—**	**(68)**	**2,104**
Total unrecognized tax benefits, including interest and penalties	**$ 7,941**	**$ 764**	**$ 346**	**$ —**	**$ (308)**	**$ 8,743**

	January 1, 2017	Changes in tax positions taken during a prior year	Tax positions taken during the current year	Change as a result of a lapse of the statute of limitations	Impact of the change in foreign currency exchange rates	December 31, 2017
Unrecognized tax benefits that, if recognized, would impact the effective tax rate	$ 8,722	$ 281	$ 589	$ (4,115)	$ 983	$ 6,460
Interest and penalties recognized on the above	968	900	6	(534)	141	1,481
Total unrecognized tax benefits, including interest and penalties	$ 9,690	$ 1,181	$ 595	$ (4,649)	$ 1,124	$ 7,941

	January 1, 2016	Changes in tax positions taken during a prior year	Tax positions taken during the current year	Change as a result of a lapse of the statute of limitations	Impact of the change in foreign currency exchange rates	December 31, 2016
Unrecognized tax benefits that, if recognized, would impact the effective tax rate	$ 22,255	$ (13,728)	$ 688	$ (112)	$ (381)	$ 8,722
Interest and penalties recognized on the above	1,583	(573)	5	(11)	(36)	968
Total unrecognized tax benefits, including interest and penalties	$ 23,838	$ (14,301)	$ 693	$ (123)	$ (417)	$ 9,690

For the years ended December 31, 2018, 2017 and 2016, there were no unrecognized tax benefits that, if recognized, would create a temporary difference between the reported amount of an item in the Company's Consolidated Balance Sheets and its tax basis. The Company recognizes interest and penalties as income tax (benefit) expense in its Consolidated Statements of Operations.

At December 31, 2018, an unrecognized tax benefit of $5 million is reasonably expected to reverse within twelve months.

14. Share-Based Incentives

During 2017, the Company designated a new class of voting common shares (Class B shares) that can be either granted to certain executives of the Company at the discretion of the Company or purchased by the executives. The granted shares are restricted from sale for a period of three years. Unrestricted Class B shares can be purchased by these executives twice a year at a price based on the latest U.S. GAAP book value as of the most recent valuation date of either June 30 or December 31. Unrestricted Class B shares can be sold or transferred at the option of the employee, and in accordance with the relevant subscription agreement, and can be sold to only the Company, subject to the employee having held a minimum of four times their gross LTI target value, unless otherwise agreed in writing. As a result, the Class B shares are accounted for as liabilities. The restricted Class B shares granted at $nil consideration are recognized at fair value over the restriction period. The compensation expense related to granted awards for the years ended December 31, 2018 and 2017 was approximately $3 million and $2 million, respectively. Shares purchased by executives in 2017 for a total of $11 million in cash were recorded as a liability on the Consolidated Balance Sheets, and was increased by less than $1 million for the excess of estimated fair value of the purchased shares over the purchase price paid as at December 31, 2018.

Upon change in control of the Company on March 18, 2016, all equity share-based awards fully vested and any remaining unrecognized share based compensation was fully expensed. As a result, at December 31, 2018 and 2017 there were no equity share-based awards outstanding. During 2016, the Company recognized a total share-based compensation expense of $36 million, and a related tax benefit of $40 million for tax deductions arising from the accelerated vesting upon change in control.

15. Retirement Benefit Arrangements

For employee retirement benefits, the Company maintains certain defined contributions plans and other active and frozen defined benefit plans. The majority of the defined benefit obligation at December 31, 2018 relates to a hybrid plan accounted for as a defined benefit plan under U.S. GAAP for the Company's Zurich office employees (the Zurich Plan).

Defined Contribution Plans

Contributions are made by the Company, and in some locations, these contributions are supplemented by the local plan participants. Contributions are based on a percentage of the participant's base salary depending upon competitive local market practice and vesting provisions meeting legal compliance standards and market trends. The accumulated benefits for the majority of these plans vest immediately or over a four-year period. As required by law, certain retirement plans also provide for death and disability benefits and lump sum indemnities to employees upon retirement.

The Company incurred expenses for these defined contribution arrangements of $13 million, $11 million and $13 million for the years ended December 31, 2018, 2017 and 2016, respectively, included within Other expenses in the Company's Consolidated Statements of Operations.

Active Defined Benefit Plan

The Company maintains the Zurich Plan, which is classified as a hybrid plan and accounted for as a defined benefit plan under U.S. GAAP. At December 31, 2018 and 2017, the funded status of the Zurich Plan was as follows (in thousands of U.S. dollars):

	2018	2017
Underfunded pension obligation at beginning of year	**$ 64,342**	$ 57,941
Change in pension obligation		
Service cost	**$ 7,203**	$ 7,510
Interest cost	**1,366**	1,295
Plan participants' contributions	**2,938**	2,905
Actuarial loss	**(9,439)**	1,483
Plan amendments	**(19,945)**	—
Benefits paid	**(4,901)**	(2,097)
Foreign currency adjustments	**(584)**	7,489
Change in pension obligation	**$ (23,362)**	$ 18,585
Change in fair value of plan assets		
Actual return on plan assets	**958**	1,131
Employer contributions	**5,245**	5,361
Plan participants' contributions	**2,938**	2,905
Benefits paid	**(4,901)**	(2,097)
Foreign currency adjustments	**(365)**	4,884
Change in fair value of plan assets	**$ 3,875**	$ 12,184
Underfunded pension obligation at end of year	**$ 37,105**	$ 64,342
Additional information:		
Projected benefit obligation at end of year(1)	**$ 161,792**	$ 185,154
Fair value of plan assets at end of year	**$ 124,687**	$ 120,812
Underfunded pension obligation at end of year	**$ 37,105**	$ 64,342
Accumulated pension obligation at end of year(2)	**$ 152,681**	$ 172,806

(1) Represents the actuarial present value of all benefits attributed to employee service rendered to December 31, measured using assumptions as to future compensation levels

(2) Represents the actuarial present value of benefits (whether vested or non-vested) attributed to employee service rendered and compensation to December 31, with no assumption about future compensation levels

At December 31, 2018 and 2017, the underfunded pension obligation of $37 million and $64 million, respectively, was included in Accounts payable, accrued expenses and other in the Consolidated Balance Sheets. The amounts recognized in Accumulated other comprehensive loss at December 31, 2018 and 2017 were $9 million (net of $2 million of taxes) and $34 million (net of $10 million of taxes), respectively.

The net periodic benefit cost reported in Other expenses in the Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016 was $10 million, $11 million and $10 million, respectively.

The investment strategy of the Zurich Plan's Pension Committee is to achieve a consistent long-term return, which will provide sufficient funding for future pension obligations while limiting risk. The expected long-term rate of return on plan assets is based on the expected asset allocation and assumptions concerning long-term interest rates, inflation rates and risk premiums for equities above the risk-free rates of return. These assumptions take into consideration historical long-term rates of return for the relevant asset categories. The investment strategy is reviewed regularly.

The fair value of the Zurich Plan's assets at December 31, 2018 and 2017 were insured funds, including cash, of $125 million and $121 million, respectively. The insured funds comprise the accumulated pension plan contributions and investment returns thereon, which are held in an insurance arrangement that provides at least a guaranteed minimum investment return. The insured funds are held by a collective foundation of AXA Life Ltd. and are guaranteed under the insurance arrangement. These insured funds meet the definition of Level 2 inputs of the fair value hierarchy as defined in Note 3(a).

The assumptions used to determine the Zurich Plan's pension obligation and net periodic benefit cost for the years ended December 31, 2018, 2017 and 2016 were as follows:

	2018		2017		2016	
	Pension obligation	Net periodic benefit cost	Pension obligation	Net periodic benefit cost	Pension obligation	Net periodic benefit cost
Discount rate	1.00%	0.75%	0.75%	0.75%	0.75%	1.00%
Expected long-term return on plan assets	—	0.75%	—	0.75%	—	1.00%
Rate of compensation increase	2.25%	2.25%	2.25%	2.00%	2.00%	2.25%

At December 31, 2018, estimated employer contributions to be paid in 2019 related to the Zurich Plan were $7 million and future benefit payments were estimated to be paid as follows (in thousands of U.S. dollars):

Year	Amount
2019	$ 4,573
2020	$ 4,703
2021	$ 5,952
2022	$ 5,884
2023	$ 6,353
2024 to 2028	$ 38,437

The Company does not believe that any of the Zurich Plan's assets will be returned to the Company during 2019.

In September 2018, the Company approved an amendment to the Zurich Plan which resulted in a reduction of $20 million in the unfunded pension obligation recorded within Accumulated other comprehensive loss in the Consolidated Balance Sheet as at December 31, 2018, the measurement date. The amendments are effective January 1, 2019 and relate to employer contributions, employee contribution choices and spouse's benefits. The pension plan was also changed from a fully insured scheme with a guaranteed level of return to a partially insured scheme.

16. Commitments and Contingencies

(a) Concentration of Credit Risk

Fixed maturities

The Company's investment portfolio is managed following prudent standards of diversification and a prudent investment philosophy. The Company is not exposed to any significant credit concentration risk on its investments, except for debt securities issued by the U.S. government and other highly rated non-U.S. sovereign governments' securities. At December 31, 2018 and 2017, other than the U.S. government, the Company's fixed maturity investment portfolio did not contain exposure to any non-U.S. sovereign government or any other issuer that accounted for more than 10% of the Company's shareholders' equity. The Company keeps cash and cash equivalents in several banks and ensures that there are no significant concentrations of credit risk in any one bank.

Derivatives

The Company's investment strategy allows for the use of derivative instruments, subject to strict limitations. Derivative instruments may be used to replicate investment positions and for the purpose of managing overall currency risk, market exposures and portfolio duration, for hedging certain investments, or for enhancing investment performance that would be allowed under the Company's investment policy if implemented in other ways. The Company is exposed to credit risk in the event of non-performance by the counterparties to the Company's derivative contracts. However, the Company diversifies the counterparties to its derivative contracts to reduce credit risk, and because the counterparties to these contracts are high credit quality international banks, the Company does not anticipate non-performance. These contracts are generally of short duration and settle on a net basis. The difference between the contract amounts and the related market value represents the Company's maximum credit exposure.

Underwriting operations

The Company is also exposed to credit risk in its underwriting operations, most notably in the credit/surety line. Loss experience in these lines of business is cyclical and is affected by the state of the general economic environment. The Company provides its clients in these lines of business with reinsurance protection against credit deterioration, defaults or other types of financial non-performance of or by the underlying credits that are the subject of the reinsurance provided and, accordingly, the Company is exposed to the credit risk of those credits. The Company mitigates the risks associated with these credit-sensitive lines of business through the use of risk management techniques such as risk diversification, careful monitoring of risk aggregations and accumulations and, at times, through the use of retrocessional reinsurance protection and the purchase of credit default, total return and interest rate swaps.

The Company has exposure to credit risk as it relates to its business written through brokers, if any of the Company's brokers is unable to fulfill their contractual obligations with respect to payments to the Company. In addition, in some jurisdictions, if the broker fails to make payments to the insured under the Company's policy, the Company might remain liable to the insured for the deficiency. The Company's exposure to such credit risk is somewhat mitigated in certain jurisdictions by contractual terms.

The Company has exposure to credit risk related to reinsurance balances receivable and reinsurance recoverable on paid and unpaid losses. The credit risk exposure related to these balances is mitigated by several factors, including but not limited to, credit checks performed as part of the underwriting process, monitoring of aged receivable balances and the contractual right to offset premiums receivable or funds held balances against non-life reserves. The Company regularly reviews its reinsurance recoverable balances to estimate an allowance for uncollectible amounts based on quantitative and qualitative factors. At December 31, 2018 and 2017, the Company recorded a provision for uncollectible premiums receivable of $5 million. See also Note 9 for discussion of credit risk related to reinsurance recoverable on paid and unpaid losses.

The Company is also subject to the credit risk of its cedants in the event of insolvency or the cedant's failure to honor the value of funds held balances for any other reason. However, the Company's credit risk in some jurisdictions is mitigated by a mandatory right of offset of amounts payable by the Company to a cedant against amounts due to the Company. In certain other jurisdictions the Company is able to mitigate this risk, depending on the nature of the funds held arrangements, to the extent that the Company has the contractual ability to offset any shortfall in the payment of the funds held balances with amounts owed by the Company to cedants for losses payable and other amounts contractually due.

(b) Lease Arrangements

The Company leases office space under operating leases expiring in various years through 2031. The leases are renewable at the option of the lessee under certain circumstances. The following is a schedule of future minimum rental payments, exclusive of escalation clauses, on noncancelable leases and future sub-lease rental income on noncancelable leases at December 31, 2018 (in thousands of U.S. dollars):

Year	Amount
2019	$ 14,074
2020	17,169
2021	14,783
2022	12,536
2023	12,107
2024-2031	55,409
Total future minimum rental payments	$ 126,078
Total future sub-lease rental income through 2020	$ 1,316

Rent expense for the years ended December 31, 2018, 2017 and 2016 was $20 million, $26 million and $25 million, respectively.

(c) Other Agreements

The Company has entered into service agreements and lease contracts that provide for business and information technology support and computer equipment. Future payments under these contracts amount to $16 million, with $11 million and $4 million to be paid during 2019 and 2020, respectively, and the remainder to be paid through 2023.

The Company has entered into strategic investments, including investments in VIEs (see Note 4(e)), with unfunded capital commitments. The Company expects to fund capital commitments totaling $647 million with $321 million, $199 million, $96 million, $23 million, and $8 million to be paid during 2019, 2020, 2021, 2022, and 2023, respectively, as of December 31, 2018.

The Company has committed to a 10 year structured letter of credit facility issued by a high credit quality international bank which has a final maturity of December 29, 2020. At December 31, 2018 and 2017, the Company's participation in the facility was $67 million. At December 31, 2018, the letter of credit facility has not been drawn down and can only be drawn down in the event of certain specific scenarios, which the Company considers remote. Unless canceled by the bank, the credit facility automatically extends for one year, each year until maturity.

(d) Legal Proceedings

Litigation

The Company's reinsurance subsidiaries, and the insurance and reinsurance industry in general, are subject to litigation and arbitration in the normal course of their business operations. In addition to claims litigation, the Company and its subsidiaries may be subject to lawsuits and regulatory actions in the normal course of business that do not arise from or directly relate to claims on reinsurance treaties. This category of business litigation typically involves, among other things, allegations of underwriting errors or omissions, employment claims or regulatory activity. While the outcome of business litigation cannot be predicted with certainty, the Company will dispute all allegations against the Company and/or its subsidiaries that management believes are without merit.

At December 31, 2018, the Company was not a party to any litigation or arbitration that it believes could have a material effect on the financial condition, results of operations or liquidity of the Company.

17. Credit Agreements

In the normal course of its operations, the Company enters into agreements with financial institutions to obtain unsecured and secured letter of credit facilities. At December 31, 2018, the total amount of such credit facilities available to the Company was approximately $603 million, with the significant facilities as follows:

- $300 million combined credit facility, with the first $100 million being unsecured and any further utilization secured. This credit facility matures each year on November 14, and automatically extends for a further year, unless canceled by either counterparty
- $150 million secured credit facility, which the Company entered into an agreement to modify during 2018. Under the terms of the agreement, the credit facility was increased from $55 million and the maturity date was extended to December 17, 2020, and automatically extends for a further year unless canceled by either counterparty
- $50 million secured credit facility, which the Company entered into an agreement to modify during 2018. Under the terms of the agreement, the credit facility was increased from $12 million and the maturity date was extended to December 21, 2019 , and automatically extends for a further year unless canceled by either counterparty
- $101 million secured and unsecured credit facilities, related to issued letters of credit which had not yet expired under facilities that were terminated prior to December 31, 2018.

Under the terms of certain reinsurance agreements, irrevocable letters of credit were issued for a total of $105 million on an unsecured basis and $370 million on a secured basis at December 31, 2018 in respect of losses and unearned premium reserves.

The committed secured credit facilities maintained by the Company are used for the issuance of letters of credit which must be fully secured with either cash, government bonds and/or investment grade bonds. The agreements include default covenants, which could require the Company to fully secure the outstanding letters of credit to the extent that the facility is not already fully secured and/or result in the Company not being allowed to issue any new letters of credit.

At December 31, 2018, no conditions of default existed under these facilities.

18. Related Party Transactions

During 2018 and 2017 the Company declared and paid to EXOR Nederland N.V. (Exor) common share dividends totaling $48 million and $145 million, respectively.

In the normal course of its underwriting activities, the Company has entered into reinsurance agreements with companies affiliated with the Company.

In the normal course of its investment operations, the Company bought or held securities of companies affiliated with the Company, including the following:

- In 2018, the Company entered into an agreement with Exor to invest in a newly formed limited partnership. At December 31, 2018, the carrying value of the Company's investment in the limited partnership was $11 million. This investment is accounted for using the equity method and is included within Other invested assets in the Consolidated Balance Sheet.
- In 2017, the Company invested $500 million in two Exor managed equity funds. At December 31, 2018 and 2017, the carrying value of these investments totaled $563 million and $551 million, respectively. These investments are recorded at fair value and are included within Equities in the Consolidated Balance Sheets.
- In 2017, the Company purchased certain real estate investments from Almacantar, an equity method investee (see Note 4 (f)) for a total cash consideration of £55 million ($83 million). The carrying value of these investments decreased from $83 million at December 31, 2017 to $73 million at December 31, 2018 as a result of a $6 million writedown to net realizable value in 2018 and a $4 million foreign currency impact of translating the GBP denominated balance to U.S. dollars. These investments are classified as Investments in real estate in the Consolidated Balance Sheets.

During the years ended December 31, 2018, 2017 and 2016, the Company entered into various agreements with Exor whereby Exor provides services in exchange for fees as follows:

- advisory services related to certain real estate investments where the Company paid approximately $45 thousand for services rendered in each of 2018 and 2017
- investment advisory services commencing in September 2018 where the Company paid $273 thousand related to services provided in 2018
- certain advisory services for a fixed annual fee of €300 thousand for 2016 and for the first quarter of 2017. The fees were amended effective April 1, 2017 to an annual fee of $500 thousand. Fees paid for each of 2016 and 2017 were less than $500 thousand. The fees for 2018 were unpaid at December 31, 2018.

The transactions between related parties discussed above were entered into at arm's-length.

19. Segment Information

Effective July 1, 2016, the Company's business units were consolidated into three worldwide business segments: Property and Casualty (P&C), Specialty and Life and Health. As a result, the Company monitors the performance of its operations in these three segments. Effective July 1, 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the financial results for U.S. health business for 2018, 2017 and 2016 has been included in the P&C segment and the impacted 2017 and 2016 comparatives have been reclassified from the Life and Health to the P&C segment to conform to current presentation. The U.S. health results for the year ended December 31, 2018 and the reclassifications made from the Life and Health to the P&C segment for the years ended December 31, 2017 and 2016 are presented below (in millions of U.S. dollars):

	2018	2017	2016
Gross premiums written	$ 405	$ 416	$ 364
Net premiums written	$ 356	$ 379	$ 318
Decrease (increase) in unearned premiums	12	(12)	(1)
Net premiums earned	$ 368	$ 367	$ 317
Losses and loss expenses	(309)	(431)	(246)
Acquisition costs	(30)	(39)	(39)
Technical result	**$ 29**	**$ (103)**	**$ 32**
Other expenses	(12)	(17)	(22)
Underwriting result	**$ 17**	**$ (120)**	**$ 10**

The business in the P&C and Specialty segments is collectively referred to as Non-life business. P&C, Specialty and Life and Health each separately represent markets that are reasonably homogeneous in terms of client types, buying patterns, underlying risk patterns and approach to risk management.

The P&C segment is comprised of property and casualty business underwritten, including property catastrophe and facultative risks. The Specialty segment is comprised of specialty business underwritten, including treaty and facultative contracts. The Life and Health segment in comprised of life, annuity, and non-U.S. health business.

Management measures results for the P&C and Specialty segments on the basis of the loss ratio, acquisition ratio, technical ratio, other expense ratio and combined ratio (all defined below). Management measures results for the Life and Health segment on the basis of the allocated underwriting result, which includes underwriting result and net investment income allocated to life business.

The segment results for the years ended December 31, 2018, 2017 and 2016 are presented below (in millions of U.S. dollars, except ratios).

Segment Information
For the year ended December 31, 2018

	P&C segment [6]	Specialty segment	Total Non-life	Life and Health segment [6]	Corporate and Other	Total
Gross premiums written	$ 3,015	$ 2,050	$ 5,065	$ 1,235	$ —	$ 6,300
Net premiums written	$ 2,722	$ 1,870	$ 4,592	$ 1,211	$ —	$ 5,803
(Increase) decrease in unearned premiums	(187)	(103)	(290)	1	—	(289)
Net premiums earned	$ 2,535	$ 1,767	$ 4,302	$ 1,212	$ —	$ 5,514
Losses and loss expenses	(2,073)	(1,096)	(3,169)	(1,025)	—	(4,194)
Acquisition costs	(606)	(502)	(1,108)	(129)	—	(1,237)
Technical result	**$ (144)**	**$ 169**	**$ 25**	**$ 58**	**$ —**	**$ 83**
Other income	30	—	30	13	7	50
Other expenses	(75)	(27)	(102)	(51)	(153)	(306)
Underwriting result	**$ (189)**	**$ 142**	**$ (47)**	**$ 20**	**n/a**	**$ (173)**
Net investment income				66	350	416
Allocated underwriting result				**$ 86**	**n/a**	**n/a**
Net realized and unrealized investment losses					(390)	(390)
Interest expense					(43)	(43)
Amortization of intangible assets					(35)	(35)
Net foreign exchange gains					119	119
Income tax benefit					9	9
Interest in earnings of equity method investments					11	11
Net loss					**n/a**	**$ (86)**
Loss ratio [1]	81.8%	62.0%	73.7%			
Acquisition ratio [2]	23.9	28.4	25.8			
Technical ratio [3]	105.7%	90.4%	99.5%			
Other expense ratio [4]	3.0	1.5	2.4			
Combined ratio [5]	108.7%	91.9%	101.9%			

(1) Loss ratio is obtained by dividing losses and loss expenses by net premiums earned.

(2) Acquisition ratio is obtained by dividing acquisition costs by net premiums earned.

(3) Technical ratio is defined as the sum of the loss ratio and the acquisition ratio.

(4) Other expense ratio is obtained by dividing other expenses by net premiums earned.

(5) Combined ratio is defined as the sum of the technical ratio and the other expense ratio.

(6) In 2018, the executive management responsibility and reporting for U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the financial results for U.S. health business for 2018 has been included in the P&C segment and the impacted 2017 and 2016 comparatives have been reclassified from the Life and Health to the P&C segment to conform to current presentation.

n/a: Not applicable

Segment Information
For the year ended December 31, 2017

	P&C segment	Specialty segment	Total Non-life	Life and Health segment	Corporate and Other	Total
Gross premiums written	$ 2,671	$ 1,934	$ 4,605	$ 983	$ —	$ 5,588
Net premiums written	$ 2,375	$ 1,780	$ 4,155	$ 965	$ —	$ 5,120
(Increase) decrease in unearned premiums	(45)	(55)	(100)	5	—	(95)
Net premiums earned	$ 2,330	$ 1,725	$ 4,055	$ 970	$ —	$ 5,025
Losses and loss expenses	(2,051)	(955)	(3,006)	(835)	—	(3,841)
Acquisition costs	(534)	(489)	(1,023)	(97)	—	(1,120)
Technical result	**$ (255)**	**$ 281**	**$ 26**	**$ 38**	**$ —**	**$ 64**
Other (loss) income	—	(1)	(1)	14	2	15
Other expenses	(88)	(33)	(121)	(44)	(183)	(348)
Underwriting result	**$ (343)**	**$ 247**	**$ (96)**	**$ 8**	**n/a**	**$ (269)**
Net investment income				60	342	402
Allocated underwriting result				**$ 68**	**n/a**	**n/a**
Net realized and unrealized investment gains					232	232
Interest expense					(42)	(42)
Loss on redemption of debt					(2)	(2)
Amortization of intangible assets					(25)	(25)
Net foreign exchange losses					(108)	(108)
Income tax expense					(10)	(10)
Interest in earnings of equity method investments					86	86
Net income					**n/a**	**$ 264**
Loss ratio	88.0%	55.4%	74.1%			
Acquisition ratio	22.9	28.4	25.2			
Technical ratio	110.9%	83.8%	99.3%			
Other expense ratio	3.8	1.9	3.0			
Combined ratio	114.7%	85.7%	102.3%			

Segment Information
For the year ended December 31, 2016

	P&C segment	Specialty segment	Total Non-life	Life and Health segment	Corporate and Other	Total
Gross premiums written	$ 2,633	$ 1,920	$ 4,553	$ 804	$ —	$ 5,357
Net premiums written	$ 2,379	$ 1,776	$ 4,155	$ 799	$ —	$ 4,954
Decrease (increase) in unearned premiums	24	(9)	15	1	—	$ 16
Net premiums earned	$ 2,403	$ 1,767	$ 4,170	$ 800	$ —	$ 4,970
Losses and loss expenses	(1,494)	(1,073)	(2,567)	(681)	—	(3,248)
Acquisition costs	(595)	(500)	(1,095)	(92)	—	(1,187)
Technical result	**$ 314**	**$ 194**	**$ 508**	**$ 27**	**$ —**	**$ 535**
Other income (loss)	3	(1)	2	10	3	15
Other expenses	(163)	(88)	(251)	(44)	(177)	(472)
Underwriting result	**$ 154**	**$ 105**	**$ 259**	**$ (7)**	**n/a**	**$ 78**
Net investment income				58	353	411
Allocated underwriting result				**$ 51**	**n/a**	**n/a**
Net realized and unrealized investment gains					26	26
Interest expense					(49)	(49)
Loss on redemption of debt					(22)	(22)
Amortization of intangible assets					(26)	(26)
Net foreign exchange gains					78	78
Income tax expense					(26)	(26)
Interest in losses of equity method investments					(23)	(23)
Net income					**n/a**	**$ 447**
Loss ratio	62.1%	60.8%	61.6%			
Acquisition ratio	24.8	28.3	26.3			
Technical ratio	86.9%	89.1%	87.9%			
Other expense ratio	6.8	4.9	6.0			
Combined ratio	93.7%	94.0%	93.9%			

The following table provides the geographic distribution of gross premiums written based on the location of the underlying risk for the years ended December 31, 2018, 2017 and 2016 (in millions of U.S. dollars, except percentages):

	2018		2017		2016	
North America	**$ 2,929**	**47%**	$ 2,620	47%	$ 2,573	48%
Europe	**2,152**	**34**	1,866	33	1,888	35
Asia, Australia and New Zealand	**699**	**11**	565	10	478	9
Latin America, and the Caribbean	**260**	**4**	267	5	182	4
Middle East, Africa, Russia and the Commonwealth of Independent States (CIS)	**260**	**4**	270	5	236	4
Total	**$ 6,300**	**100%**	$ 5,588	100%	$ 5,357	100%

The Company produces its business both through brokers and through direct relationships with insurance company clients. None of the Company's cedants individually accounted for more than 4%, 4% and 4% of total gross premiums written during the years ended December 31, 2018, 2017 and 2016, respectively.

The Company has two brokers that individually accounted for 10% or more of its gross premiums written during the years ended December 31, 2018, 2017 and 2016, as follows:

Broker	2018	2017	2016
Marsh (including Guy Carpenter)	**22%**	25%	22%
Aon Group (including the Benfield Group)	**22%**	22%	22%

The following table summarizes the percentage of gross premiums written through these two brokers by segment for the years ended December 31, 2018, 2017 and 2016:

	2018	2017	2016
P&C	**53%**	53%	52%
Specialty	**52%**	56%	46%
Life and Health	**11%**	12%	13%

20. Other Expenses

For the years ended December 31, 2018 and 2017, the Company recorded $11 million and $29 million of reorganization related costs. In addition, for the year ended December 31, 2017, the Company recorded $4 million of transaction costs related to the acquisition of Aurigen.

For the year ended December 31, 2016, the Company recorded $76 million of transaction related costs and $52 million of reorganization related costs primarily associated with the acquisition of the Company by Exor N.V. The $76 million transaction related costs included $38 million for settlement of share-based awards that fully vested upon the change in control of the Company.

21. Subsequent Events

On March 20, 2019, the Company's Board of Directors declared the payment of dividends on common shares of $80 million.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of PartnerRe Ltd.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of PartnerRe Ltd. (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

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 Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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.

/S/ Ernst & Young Ltd.

Ernst & Young Ltd.

We have served as the Company's auditor since 2016.

Hamilton, Bermuda
March 20, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of PartnerRe Ltd.

We have audited the consolidated financial statements of PartnerRe Ltd. (the Company) as of December 31, 2018 and 2017, and for each of the three years in the period ended December 31, 2018, and have issued our report thereon dated March 20, 2019 (included elsewhere in this Annual Report on Form 20-F). Our audits of the consolidated financial statements included the financial statement schedules listed in Item 18 of this Form 20-F (the “schedules”). These schedules are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company’s schedules, based on our audits.

In our opinion, the schedules present fairly, in all material respects, the information set forth therein when considered in conjunction with the consolidated financial statements.

/S/ Ernst & Young Ltd.

Ernst & Young Ltd.

Hamilton, Bermuda
March 20, 2019

SCHEDULE I

PartnerRe Ltd.

**Consolidated Summary of Investments
Other Than Investments in Related Parties
at December 31, 2018
(Expressed in thousands of U.S. dollars)**

Type of investment	Cost [1]	Fair Value	Amount at which shown in the balance sheet
Fixed maturities			
U.S. government and government sponsored enterprises	$ 2,333,371	$ 2,345,008	$ 2,345,008
U.S. states, territories and municipalities	114,857	134,593	134,593
Non-U.S. sovereign government, supranational and government related	2,122,510	2,158,642	2,158,642
Corporate bonds	5,667,992	5,611,678	5,611,678
Asset-backed securities	56,892	58,683	58,683
Residential mortgage-backed securities	2,332,103	2,331,230	2,331,230
Other mortgage-backed securities	196	11	11
Fixed maturities	$ 12,627,921	$ 12,639,845	$ 12,639,845
Equities			
Banks, trust and insurance companies	$ 22,446	$ 27,978	$ 27,978
Industrial, miscellaneous and all other	598,866	666,323	666,323
Equities	$ 621,312	$ 694,301	$ 694,301
Short-term investments	$ 495,050	$ 493,726	$ 493,726
Other invested assets [2]		$ 784,603	$ 784,603
Total [3]		$ 14,612,475	$ 14,612,475

(1) Original cost of fixed maturities reduced by repayments and adjusted for amortization of premiums or accrual of discounts. Original cost of equity securities.

(2) Other invested assets excludes the Company's investments accounted for using the equity method of accounting of $704 million.

(3) Investments in real estate recorded at cost less accumulated depreciation and impairment of $73 million are excluded from total investments above.

SCHEDULE II

PartnerRe Ltd.

Condensed Balance Sheets—Parent Company Only
(Expressed in thousands of U.S. dollars, except parenthetical share and per share data)

	December 31, 2018	December 31, 2017
Assets		
Fixed maturities, at fair value (amortized cost: 2018, $109,824; 2017, $52,406)	**$ 109,951**	$ 51,748
Cash and cash equivalents	**1,081**	26,681
Investments in subsidiaries	**8,831,161**	8,991,358
Intercompany loans and balances receivable	**657,156**	1,135,749
Other	**4,588**	4,246
Total assets	**$ 9,603,937**	$ 10,209,782
Liabilities		
Intercompany loans and balances payable [1]	**$ 3,061,210**	$ 3,435,693
Accounts payable, accrued expenses and other	**26,213**	28,977
Total liabilities	**3,087,423**	3,464,670
Shareholders' Equity		
Common shares (par value $0.00000001; issued: 100,000,000 shares)	**—**	—
Preferred shares (par value $1.00; issued and outstanding: 28,169,062 shares; aggregate liquidation value: $704,227)	**28,169**	28,169
Additional paid-in capital	**2,396,530**	2,396,530
Accumulated other comprehensive loss	**(138,634)**	(90,281)
Retained earnings	**4,230,449**	4,410,694
Total shareholders' equity	**6,516,514**	6,745,112
Total liabilities and shareholders' equity	**$ 9,603,937**	$ 10,209,782

(1) The parent has fully and unconditionally guaranteed on a subordinated basis all obligations of PartnerRe Finance II Inc., an indirect 100% owned finance subsidiary of the parent, related to the remaining $63 million aggregate principal amount of 6.440% Fixed-to-Floating Rate Junior Subordinated CENts. The parent's obligations under this guarantee are unsecured and rank junior in priority of payments to the parent's senior notes.

The parent has fully and unconditionally guaranteed all obligations of PartnerRe Finance B, indirect 100% owned finance subsidiary of the parent, and PartnerRe Finance Ireland DAC, direct 100% owned subsidiary of the parent, related to the issuance of the 5.500% senior notes and 1.250% senior notes, respectively. The parent's obligations under these guarantees are senior and unsecured and rank equally with all other senior unsecured indebtedness of the parent.

SCHEDULE II

PartnerRe Ltd.

Condensed Statements of Operations and Comprehensive (Loss) Income—Parent Company Only
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	**December 31, 2017**	**December 31, 2016**
Revenues			
Net investment income	**$ 1,844**	$ 1,890	$ 2,690
Interest income on intercompany loans	**13,015**	12,201	12,109
Net realized and unrealized investment (losses) gains	**(1,632)**	91	2,993
Other (loss) income	**(6,778)**	8,418	2,483
Total revenues	**6,449**	22,600	20,275
Expenses			
Other expenses	**25,792**	40,131	116,758
Interest expense on intercompany loans	**15,041**	12,085	7,016
Net foreign exchange (gains) losses	**(50,276)**	35,753	(10,788)
Total expenses	**(9,443)**	87,969	112,986
Income (loss) before equity in net (loss) income of subsidiaries	**15,892**	(65,369)	(92,711)
Equity in net (loss) income of subsidiaries	**(101,886)**	329,390	540,019
Net (loss) income	**(85,994)**	264,021	447,308
Preferred dividends	**46,416**	46,416	55,043
Loss on redemption of preferred shares	**—**	—	4,908
Net (loss) income attributable to common shareholder	**$ (132,410)**	$ 217,605	$ 387,357
Comprehensive (loss) income			
Net (loss) income	**$ (85,994)**	$ 264,021	$ 447,308
Other comprehensive (loss) income	**(48,353)**	(15,712)	8,714
Comprehensive (loss) income	**$ (134,347)**	$ 248,309	$ 456,022

SCHEDULE II

PartnerRe Ltd.

Condensed Statements of Cash Flows—Parent Company Only
(Expressed in thousands of U.S. dollars)

	For the year ended		
	December 31, 2018	December 31, 2017	December 31, 2016
Cash flows from operating activities			
Net (loss) income	**$ (85,994)**	$ 264,021	$ 447,308
Adjustments to reconcile net income to net cash used in operating activities:			
Equity in net loss (income) of subsidiaries	**101,886**	(329,390)	(540,019)
Other, net	**(29,283)**	25,239	11,205
Net cash used in operating activities	**(13,391)**	(40,130)	(81,506)
Cash flows from investing activities			
Advances to/from subsidiaries, net	**(261,666)**	11,138	(167,254)
Net issue of intercompany loans receivable and payable	**299,279**	—	542,193
Sales and redemptions of fixed maturities	**65,025**	40,379	99,888
Purchases of fixed maturities	**(124,932)**	(16,414)	(7,839)
Other, net	**(680)**	414	(2,408)
Net cash (used in) provided by investing activities	**(22,974)**	35,517	464,580
Cash flows from financing activities			
Cash dividends paid to common and preferred shareholders [1]	**—**	—	(240,725)
Redemption of preferred shares	**—**	—	(149,523)
Reissuance of treasury shares, net of taxes	**—**	—	10,965
Settlement of share-based awards upon change in control	**—**	—	(75,531)
Net cash used in financing activities	**—**	—	(454,814)
Effect of foreign exchange rate changes on cash	**10,765**	8,144	55
(Decrease) increase in cash and cash equivalents	**(25,600)**	3,531	(71,685)
Cash and cash equivalents—beginning of year	**26,681**	23,150	94,835
Cash and cash equivalents—end of year	**$ 1,081**	$ 26,681	$ 23,150

(1) During the years ended December 31, 2018, 2017 and 2016, dividends paid to common and preferred shareholders of $94 million, $191 million and $251 million, respectively, were paid by a Bermuda subsidiary on behalf of the parent and have therefore been excluded from the Condensed Statements of Cash Flows—Parent Company Only.

SCHEDULE III

PartnerRe Ltd.

Supplementary Insurance Information
For the years ended December 31, 2018, 2017 and 2016
(Expressed in thousands of U.S. dollars)

	Deferred Policy Acquisition Costs[1]	Gross Reserves[1]	Unearned Premiums[1]	Other Benefits Payable[1]	Premium Revenue[1]	Net Investment Income[2]	Losses Incurred[1]	Amortization of DAC[1]	Other Expenses [1], [3]	Premiums Written[1]
2018										
Non-life	**$ 553,535**	**$ 9,895,376**	**$ 2,062,736**	**$ —**	**$ 4,301,862**	**$ N/A**	**$ 3,168,647**	**$ 1,107,760**	**$ 102,397**	**$ 4,592,282**
Life and Health	**189,511**	**—**	**10,217**	**2,198,080**	**1,211,948**	**65,567**	**1,024,608**	**129,704**	**51,055**	**1,211,082**
Corporate and Other	**—**	**—**	**—**	**—**	**—**	**350,354**	**—**	**—**	**152,116**	**—**
Total	**$ 743,046**	**$ 9,895,376**	**$ 2,072,953**	**$ 2,198,080**	**$ 5,513,810**	**$ 415,921**	**$ 4,193,255**	**$ 1,237,464**	**$ 305,568**	**$ 5,803,364**
2017										
Non-life	$ 493,196	$10,102,172	$ 1,807,013	$ —	$ 4,055,191	$ N/A	$ 3,005,567	$ 1,023,065	$ 121,134	$ 4,154,809
Life and Health	179,111	—	11,986	2,098,759	969,790	59,895	835,415	96,708	44,346	965,117
Corporate and Other	—	—	—	—	—	342,176	—	—	182,918	—
Total	$ 672,307	$10,102,172	$ 1,818,999	$ 2,098,759	$ 5,024,981	$ 402,071	$ 3,840,982	$ 1,119,773	$ 348,398	$ 5,119,926
2016										
Non-life	$ 439,195	$ 9,247,200	$ 1,608,880	$ —	$ 4,170,389	$ N/A	$ 2,566,932	$ 1,095,251	$ 251,306	$ 4,154,707
Life and Health	158,044	—	14,916	1,722,330	799,207	57,664	681,159	91,351	43,502	798,763
Corporate and Other	—	—	—	—	—	353,200	—	—	177,096	—
Total	$ 597,239	$ 9,247,200	$ 1,623,796	$ 1,722,330	$ 4,969,596	$ 410,864	$ 3,248,091	$ 1,186,602	$ 471,904	$ 4,953,470

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

(2) Because the Company does not manage its assets by segment, net investment income is not allocated to the Non-life business of the reinsurance operations. However, because of the interest-sensitive nature of some of the Company's Life products, net investment income is considered in management's assessment of the profitability of the Life and Health segment.

(3) Other expenses are a component of underwriting result for the Non-life business and Life and Health segment as the Company allocates certain other expenses to its operating segments that vary with business written.

SCHEDULE IV

PartnerRe Ltd.

Reinsurance [1]
For the years ended December 31, 2018, 2017 and 2016
(Expressed in thousands of U.S. dollars)

	Gross amount	Ceded to other companies	Assumed from other companies	Net amount	Percentage of amount assumed to net
2018					
Life reinsurance in force	**$ —**	**$ 16,349,433**	**$ 349,064,323**	**$ 332,714,890**	**105%**
Premiums earned					
Life	**$ —**	**$ 24,025**	**$ 1,184,604**	**$ 1,160,579**	**102%**
Accident and health	**—**	**—**	**51,369**	**51,369**	**100%**
P&C[2]	**248,501**	**450,096**	**4,503,457**	**4,301,862**	**105%**
Total premiums	**$ 248,501**	**$ 474,121**	**$ 5,739,430**	**$ 5,513,810**	**104%**
2017					
Life reinsurance in force	$ —	$ 15,136,473	$ 295,171,940	$ 280,035,467	105 %
Premiums earned					
Life	$ —	$ 18,094	$ 944,752	$ 926,658	102 %
Accident and health	—	—	43,132	43,132	100 %
P&C[2]	261,760	428,471	4,221,902	4,055,191	104 %
Total premiums	$ 261,760	$ 446,565	$ 5,209,786	$ 5,024,981	104 %
2016					
Life reinsurance in force	$ —	$ 1,930,291	$ 167,198,163	$ 165,267,872	101 %
Premiums earned					
Life	$ —	$ 4,694	$ 778,754	$ 774,060	101 %
Accident and health	—	—	25,147	25,147	100 %
P&C[2]	251,492	369,541	4,288,438	4,170,389	103 %
Total premiums	$ 251,492	$ 374,235	$ 5,092,339	$ 4,969,596	102 %

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

(2) P&C includes Specialty and U.S. health premiums.

SCHEDULE VI

PartnerRe Ltd.

Supplemental Information
Concerning Property-Casualty Insurance Operations [1]
For the years ended December 31, 2018, 2017 and 2016
(Expressed in thousands of U.S. dollars)

Affiliation with Registrant	Deferred Policy Acquisition Costs	Liability for Unpaid Losses and Loss Expenses	Unearned Premiums	Premiums Earned	Losses and Loss Expenses Incurred Related to		Amortization of Deferred Policy Acquisition Costs	Paid Losses and Loss Expenses	Premiums Written
					Current year	Prior year			
Consolidated subsidiaries									
2018	**$ 553,535**	**$ 9,895,376**	**$ 2,062,736**	**$ 4,301,862**	**$ 3,417,366**	**$ (248,719)**	**$ 1,107,760**	**$ 2,921,987**	**$ 4,592,282**
2017	$ 493,196	$ 10,102,172	$ 1,807,013	$ 4,055,191	$ 3,453,725	$ (448,158)	$ 1,023,065	$ 2,979,051	$ 4,154,809
2016	$ 439,195	$ 9,247,200	$ 1,608,880	$ 4,170,389	$ 3,243,506	$ (676,574)	$ 1,095,251	$ 2,488,473	$ 4,154,707

(1) In 2018, U.S. health business was reallocated from the Life and Health segment to the P&C segment as part of an internal organizational change. As a result, the impacted 2017 and 2016 comparatives have been reclassified to conform to current presentation.

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ITEM 19. EXHIBITS

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	Original Number	Date Filed	SEC File Reference Number	
1.1	Amended Memorandum of Association	F-3	3.1	June 20, 1997	333-7094	
1.2	Bye-laws of PartnerRe Ltd.	8-K	3.1	March 18, 2016	001-14536	
2.4	Specimen Share Certificate for the 5.875% Series F Non-Cumulative Redeemable Preferred Shares	8-K	4.1	February 14, 2013	001-14536	
2.4.1	Certificate of Designation, Preferences and Rights of the Company's 5.875% Series F Non-Cumulative Redeemable Preferred Shares	8-K	3.1	February 14, 2013	001-14536	
2.5	Certificate of Designation of 6.50% Series G Cumulative Redeemable Preferred Shares	8-K	4.1	May 3, 2016	001-14536	
2.6	Certificate of Designation of 7.25% Series H Cumulative Redeemable Preferred Shares	8-K	4.2	May 3, 2016	001-14536	
2.7	Certificate of Designation of 5.875% Series I Non-Cumulative Redeemable Preferred Shares	8-K	4.3	May 3, 2016	001-14536	
2.8	Certificate of Designation of Class B Common Shares	20-F	2.8	March 14, 2018	001-14536	
2.8.1	Junior Subordinated Indenture dated November 2, 2006 among PartnerRe Finance II Inc., the Company, J.P. Morgan Securities Inc., Lehman Brothers Inc. and the other underwriters named therein	8-K	4.1	November 7, 2006	001-14536	
2.8.2	First Supplemental Junior Subordinated Indenture (including the form of the CENts) among PartnerRe Finance II Inc., the Company and The Bank of New York	8-K	4.2	November 7, 2006	001-14536 61194484	
2.9.1	Junior Subordinated Debt Securities Guarantee Agreement dated November 7, 2006 between the Company and The Bank of New York	8-K	4.3	November 7, 2006	001-14536	
2.9.2	First Supplemental Junior Subordinated Debt Securities Guarantee Agreement dated November 7, 2006 between the Company and The Bank of New York	8-K	4.4	November 7, 2006	001-14536	
2.12.1	Indenture dated March 15, 2010 among PartnerRe Finance B LLC, PartnerRe Ltd. and The Bank of New York Mellon	8-K	4.1	March 15, 2010	001-14536	
2.12.2	First Supplemental Indenture dated March 15, 2010 among PartnerRe Finance B LLC, PartnerRe Ltd. and The Bank of New York Mellon	8-K	4.2	March 15, 2010	001-14536	
2.13.1	Senior Debt Securities Guarantee Agreement dated March 15, 2010 between PartnerRe Ltd. and The Bank of New York Mellon	8-K	4.3	March 15, 2010	001-14536	
2.13.2	First Supplemental Senior Debt Securities Guarantee Agreement dated March 15, 2010 between PartnerRe Ltd. and The Bank of New York Mellon	8-K	4.4	March 15, 2010	001-14536	
4.1	Agreement and Plan of Merger by and among Exor N.V., Pillar Ltd., PartnerRe Ltd. and solely with respect to Sections 4.01 and 4.05, Section 6.13 and Section 7.13, EXOR S.p.A.	8-K	2.1	August 3, 2015	001-14536	
4.2	Form of Indemnification Agreement between PartnerRe Ltd. and its directors	10-Q	10.16	November 4, 2009	001-14536	

Exhibit Number	Exhibit Description	Incorporated by Reference: Form	Original Number	Date Filed	SEC File Reference Number	Filed Herewith
4.3	Termination Agreement, dated August 2, 2015, by and among PartnerRe Ltd. and Axis Capital Holdings Limited	8-K	10.2	August 3, 2015	001-14536	
4.4	Capital Management Maintenance Agreement, effective January 1, 2015, between PartnerRe Ltd. and Partner Reinsurance Asia Pte. Ltd.	10-K	10.38	February 25, 2016	001-14536	
8.1	Subsidiaries of the Company					X
11.1	Code of Business Conduct and Ethics					X
12.1	Certification of Emmanuel Clarke, Chief Executive Officer, as required by Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934					X
12.2	Certification of Mario Bonaccorso, Chief Financial Officer, as required by Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934					X
13.1	Certifications of Emmanuel Clarke, Chief Executive Officer, and Mario Bonaccorso, Chief Financial Officer, as required by Rule 13a-14(b) or 15d-14(b) of the Securities Exchange Act of 1934					X
101.1	The following financial information from PartnerRe Ltd.'s Annual Report on Form 20–F for the year ended December 31, 2018 formatted in XBRL: (i) Consolidated Balance Sheets at December 31, 2018 and 2017; (ii) Consolidated Statements of Operations and Comprehensive Income for the years ended December 31, 2018, 2017 and 2016; (iii) Consolidated Statements of Shareholders' Equity for the years ended December 31, 2018, 2017 and 2016; (iv) Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016; (v) Notes to Consolidated Financial Statements and (vi) Financial Statements Schedules.					X

SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

PARTNERRE LTD.

By:	/S/ MARIO BONACCORSO
Name:	**Mario Bonaccorso**
Title:	**Executive Vice President and Chief Financial Officer**

Exhibit 8.1

PartnerRe Ltd.

Subsidiaries of the Company

	Jurisdiction	Percentage Interest Held
PartnerRe Ltd.	Bermuda	
Aurigen Europe Holdings B.V.	Netherlands	100%
PartnerRe Life Reinsurance Company of Canada	Canada	100%
PartnerRe Services Ltd.	Bermuda	100%
Partner Reinsurance Company Ltd.	Bermuda	100%
PartnerRe Americas Services Company, S.A. de C.V.	Mexico	100%
PPF Holdings I Ltd.	Bermuda	100%
PPF Holdings II Ltd.	Bermuda	100%
PPF Holdings III Ltd.	Bermuda	100%
PartnerRe Capital Investments Corp.	Delaware, United States	100%
LFR Collections LLC	Delaware, United States	100%
Almandine I LLC	Delaware, United States	95%
PartnerRe Investment Holding Company Ltd.	Bermuda	100%
PartnerRe ILS Fund Ltd.	Bermuda	100%
PartnerRe ILS Bermuda Feeder Fund Ltd.	Bermuda	100%
PartnerRe ILS Feeder Fund LLC	Delaware, United States	100%
Raccoon River Re Ltd	Bermuda	100%
Partner Reinsurance Life Company of Bermuda Ltd.	Bermuda	100%
PartnerRe Corporate Member Limited	United Kingdom	100%
PartnerRe Corporate Member 2 Limited	United Kingdom	100%
Almacantar Group S.A.	Luxembourg	36%
Partner Reinsurance Asia Pte. Ltd.	Singapore	100%
PartnerRe Holdings Europe Limited	Ireland	100%
PartnerRe Holdings Switzerland GmbH	Switzerland	100%
PartnerRe Connecticut Inc.	Connecticut, United States	100%
PartnerRe Ireland Insurance dac	Ireland	100%
PartnerRe Ireland Finance DAC	Ireland	100%
PartnerRe Holdings B.V.	Netherlands	100%
PartnerRe Holdings SA	France	100%
Partner Reinsurance Europe SE	Ireland	100%
PartnerRe Escritório de Representação no Brasil Ltda.	Brazil	100%
PartnerRe Miami Inc.	Florida, United States	100%
PartnerRe U.S. Corporation	Delaware, United States	100%
PRE Life Bermuda Re Ltd.	Bermuda	100%
PartnerRe Life Reinsurance Company of America	Arkansas, United States	100%
PartnerRe America Insurance Company	Delaware, United States	100%
PPF Finance LLC	Delaware, United States	100%
PartnerRe Finance A LLC	Delaware, United States	100%
PartnerRe Finance B LLC	Delaware, United States	100%
PartnerRe Finance C LLC	Delaware, United States	100%

	Jurisdiction	Percentage Interest Held
PartnerRe Asset Management Corporation	Delaware, United States	100%
Pitts Bay Investment Management Inc.	Delaware, United States	100%
Partner Reinsurance Company of the U.S.	New York, United States	100%
PartnerRe Insurance Company of New York	New York, United States	100%
PartnerRe Finance I Inc.	Delaware, United States	100%
PartnerRe Finance II Inc.	Delaware, United States	100%
PartnerRe Capital Trust II	Delaware, United States	100%
PartnerRe Capital Trust III	Delaware, United States	100%
Presidio Reinsurance Group, Inc.	Delaware, United States	100%
Presidio Excess Insurance Services Inc.	California, United States	100%
PartnerRe Management Limited	United Kingdom	100%
Presidio Reinsurance Corporation	Montana, United States	100%

Code of Business Conduct and Ethics

To All PartnerRe Employees:

Dear Colleagues,

As we continue to make great progress towards our 2020 vision, it is good to remind ourselves of some of the fundamentals of our success, and in particular, of our values of trust, responsibility, openness and initiative. These values set the foundation for PartnerRe as an organization that is committed to integrity and openness; one that continues to build on its strengths and where employees feel pride and ambition in their work.

It is up to each one of us to live these values by transforming them from just words into meaningful actions that shape our culture and our reputation, and the way in which our clients, brokers, future employees and our own communities perceive us. I therefore invite you to take the time to read the Code of Conduct, to think about what our values mean to you and how you can apply them in your everyday work.

I also expect you to have the courage to speak up if you witness any infringements of the Code of Conduct. You can find out how to identify and report a violation by reading PartnerRe's Whistleblowing Procedure, which can be found together with the Reporting Hotline and the Code of Conduct, on the home page of Relink.

If you have any questions or concerns relating to ethics at PartnerRe or how to report a violation, please contact a member of the Legal team.

Thank you for your support,

Emmanuel Clarke
CEO and President
PartnerRe Ltd.

Code of Business Conduct and Ethics
Governance
Work Environment
Reporting Violations
Conflicts of Interest
Legal and Regulatory Integrity
Financial and Non-Financial Integrity
Insider Trading
Sanctions and Anti-Money Laundering
Anti-Trust and Fair Dealing
Bribery and Corruption
Fraud
Protection and Proper Use of PartnerRe Resources
Corporate Opportunities and Resources
Electronic Communications
Confidentiality

Our vision
Our vision is to be the best reinsurance partner to our clients and brokers.

Our Core Purpose
We help insurance companies succeed by making risk manageable for our clients. We combine technical expertise and strong relationships to help fuel their success and their peace of mind.

Our Strategy
We complement our technical capabilities with a client focused approach, to develop successful partnerships with our clients.

We create value through:

- Sourcing diversified and profitable risks by being the go-to reinsurer for our clients
- and brokers
- Executing intelligent and responsible underwriting
- Managing risk and capital for strength and flexibility
- Maintaining an efficient, effective platform
- Attracting, retaining and developing talent

Our Values
Trust

- Ethics first, every time
- Partnership in words and actions
- Committed to earning client trust every day

Responsibilities

- Passionate about results for our business and clients
- Acting like owners - always accountable for our actions
- Mindful, multicultural citizens of the world

Openness

- Transparency in the face of complexity
- Collaboration over competition
- Speaking up and standing out

Initiative

- Proactive solutions, not reactive repairs
- Empowering people to seize opportunities every day
- Extraordinary acts, both big and small

Code of Business Conduct and Ethics

This Code of Business Conduct and Ethics (the “Code of Conduct”) applies to all PartnerRe Group[1] directors and employees (referred to herein as “Employee(s)”). References to “Employee(s)” also include any third party connected to PartnerRe who is notified that the Code of Conduct applies to them.

PartnerRe’s reputation is critical to the success of its business and organization and comes from the everyday actions of Employees when dealing with clients, suppliers, regulators, competitors and fellow Employees. Consistent and sound business practices contribute to building a reputation that creates value and a sustainable competitive advantage.

We are committed to a culture of trust and responsibility; therefore, the highest level of ethical conduct should be reflected in all of our business activities.

At PartnerRe we have common values that apply to the entire organization and that underpin our business activities and behavior.

This Code of Conduct is designed to provide a high-level overview of these core values in practice. It is supplemented by additional policies and guidelines that fully explain the application of these values. Employees are required to read, understand, accept and apply the values contained in the Code of Conduct and in all other policies and guidelines applicable to them, in their everyday work and behavior.

It is not possible for the Code of Conduct to cover every possible situation that may arise; therefore, in the case of doubt, there is one simple question to ask: “If the act or omission were made public, would PartnerRe’s reputation be questioned or damaged?”

If a situation seems questionable with respect to the application of the principles outlined in this Code of Conduct, Employees are encouraged to seek guidance from their Manager, Human Resources Manager, Corporate Audit, Legal Department or Executive Management

[1] PartnerRe Group includes PartnerRe Ltd. and all direct and indirect subsidiaries and branches thereof (“PartnerRe” or the “Company”)

Governance

The Code of Conduct is approved by the Audit Committee of PartnerRe Ltd. which is made up entirely of independent directors.

Any specific waiver of the provisions of this Code of Conduct or material amendment requires the approval of the Audit Committee.

Any violation of the Code of Conduct will result in appropriate disciplinary measures, up to and including dismissal. Criminal misconduct may be referred to the appropriate legal authorities.

If a principle in this Code of Conduct infringes the law, the law shall prevail. If a local custom or policy conflicts with this Code of Conduct, the Code of Conduct shall prevail. Any questions in connection with conflicts should be addressed to the Legal Department.

Q If I comply with local laws and regulations, will this ensure my compliance with the Code of Conduct?

A Not necessarily. Our Code of Conduct may impose standards that are more rigorous than those imposed by local laws and regulations. In these situations, and provided that the Code of Conduct does not conflict with laws and regulations, you should make sure that you comply with the Code of Conduct.

Work Environment

PartnerRe strives to provide each Employee with a healthy and safe work environment. It is the responsibility of each Employee to maintain this healthy and safe workplace by following environmental, health and safety rules and practices and by reporting accidents, injuries and unsafe equipment, practices or conditions.

We expect our work environment to be free from all forms of discrimination, harassment or intimidation and will therefore not tolerate any prejudice, whether based on race, color, age, religion, gender, sexual orientation, national origin or otherwise.

All Employees are expected to perform their duties in a safe manner, free from the influence of alcohol, illegal drugs or other controlled substances (except for prescription medication for medical treatment). The use of illegal drugs in the workplace will not be tolerated.

Although alcohol may be consumed at work-related events when the local custom and occasion make it appropriate to do so, it is the responsibility of each Employee to consume no more than moderate amounts and to ensure that his/her performance, judgment and behavior are unimpaired.

PartnerRe encourages direct and open communication among and between Employees and management. Employees are free to discuss issues with their Managers without fear of reprisal or the need for third-party representation. Any form of retaliation will result in appropriate disciplinary measures.

Reporting Violations

Whistleblowing Procedure

An Employee who becomes aware of any activity that appears to violate any applicable state, federal, local or national laws, rules, regulations applicable to PartnerRe (the "Regulations") or provisions of this Code of Conduct or any other PartnerRe policy and guidelines, is expected to promptly report the possible violation. PartnerRe has a process that governs how Employees may openly, confidentially or anonymously report an actual or potential violation without fear of retaliation. This process is described in the Whistleblowing Procedure[1] which can be accessed via the homepage of Relink.

Employees are encouraged to report an actual or potential violation firstly through the normal business channels i.e. (i) to their direct Manager or, if the employees do not feel that this is appropriate, (ii) to the Human Resources, the Corporate Audit department, the Legal department, or to any member of the Executive Committee.

If an Employee, for any reason, is uncomfortable with making a report through the above channels or if the responses that he/she has received are not satisfactory, the Employee may report the Violation anonymously by using the "Reporting Hotline" button located on the home page of Relink (the "Hotline"). All reports made through the Hotline are sent directly to the Chairman of the Audit Committee.

Q I am concerned that someone may have breached the Regulations or the Code of Conduct, but I am not really sure. What should I do?

A Even in circumstances where you are unsure but have questions or concerns, we encourage you to report the perceived breach of the Regulations or the Code of Conduct. In order to facilitate the reporting of employee concerns, we have established a Whistleblowing Procedure, which provides certain mechanisms for Employees to submit concerns in good faith. There are no repercussions for any Employee with respect to good faith reporting of complaints or questions. Retaliation of any type against an Employee who reports a violation or potential violation in good faith will not be tolerated and is prohibited by principles outlined in the Code of Conduct. Anyone who attempts to retaliate against an Employee for reporting a Violation or potential violation will face discipline, which may include termination.

[1] *The reporting process may differ subject to Employee location*

Conflicts of Interest

PartnerRe is committed to an environment free from conflicts of interest. A conflict of interest occurs when the private interests of an Employee or the private interests of his/her Immediate Family Member[1] interfere, or appear to interfere, with the interests of PartnerRe.

Employees should discuss any circumstance that creates a real or potential conflict of interest with their Manager and, where applicable report it to the Legal department. For Employees, all decisions regarding the Company's interests must be based solely on what is best for the Company and must not be improperly influenced by personal interests. Employees shall not divulge or personally benefit from any information about the Company or its clients that is not available to the public.

Employees shall not accept commissions, gifts, gratuities, credit, loans or favors of any kind ("Special Treatment") from any person, firm or corporation doing business or seeking to do business with the Company under circumstances from which it could be reasonably inferred that the Special Treatment could interfere or appear to interfere with the interests of the Company.

Employees must avoid all other employment and activities which involve obligations which may conflict with the interests of the Company.

Q Every year one of our suppliers sends me a couple of bottles of wine in the festive season - can I accept them?

A You have to decide if the gift is reasonable and appropriate in the circumstances. Gifts of a nominal value are acceptable, but you must be sure that such a gift will in no way influence your business judgment or could be perceived as favoring the giver. If you are unsure how to respond to a receipt of a gift, contact the Legal department.

Some examples of prohibited behavior that are considered to be or could be perceived as being conflicts of interest are listed below. Employees may not:

Accept any personal benefit (such as fees, commissions) from a person or business involved in any transaction with PartnerRe.

Accept gifts, discounts, services, transportation or any other form of services or goods or favors of value from contractors, vendors, brokers, agents, client companies or persons providing services/materials to PartnerRe other than of nominal value.

Offer favors, gifts or services other than those that are reasonable and appropriate for the individuals involved and supported by appropriate documentation and approvals.

Offer or accept cash (or cash equivalent), loans or guarantees (other than in an approved corporate capacity) in any amount to/from a supplier, client, potential supplier or potential client.

Arrange or facilitate certain business transactions between their Immediate Family Member and any client or supplier.

Have a financial interest in clients, suppliers, competitors or any enterprise that is known to have a business relationship with PartnerRe, except where the financial interest is less than 1% of a publicly traded company.

Borrow from or lend to clients, suppliers or fellow Employees except for normal banking transactions with financial institutions conducted on a commercial basis.

Any activity that an Employee is aware of that has similar characteristics to the above, or could be perceived to have similar characteristics, and any material transaction or relationship that could reasonably be expected to give rise to a conflict of interest, requires disclosure to the Legal Department.

Entertainment

Accepting normal business entertainment, at which the giver is present, such as lunch, dinner, theater, a sporting event or other customary business entertainment, is appropriate if it is not frequent and is of a reasonable nature, in the course of a meeting or to foster better business relations. Sound judgment must always be used when deciding whether to attend any event, keeping in mind how your attendance may be viewed by others within and outside the organization.

Q One of my clients has invited me to stay at his holiday home whenever I want - is this permitted under the Code of Conduct?

A No. You may not accept any "favors of value" from a supplier, client, potential supplier, client or competitor, other than of nominal value.

[1] *For the purposes of this Code of Conduct, Immediate Family Member includes an Employee's relatives or partner sharing their household*

Legal and Regulatory Integrity

PartnerRe operates in multiple jurisdictions around the world. PartnerRe and all of its Employees must comply fully with the Regulations of the cities, states and countries in which we operate. Although Employees are not expected to know the details of each of these Regulations, it is important to know enough to determine when to seek advice from the Legal Department or other appropriate persons.

Employees may under no circumstance knowingly mislead or misrepresent any PartnerRe information specifically but without limitation to auditors, regulators or any other official bodies.

Financial and Non-Financial Integrity

All financial transactions must be accurately and fairly recorded in a timely manner in accordance with applicable accounting standards and the policies and guidelines of PartnerRe. All periodic reports that PartnerRe is required to prepare and PartnerRe's other public communications shall contain full, fair, accurate, timely and understandable disclosure.

Insider Trading

Guidelines: Trading

All Employees must comply with all applicable securities laws on the sale and purchase of any PartnerRe preference shares. All Employees are strictly prohibited from trading any securities, not just PartnerRe preference shares, while in possession of Material Non-Public Information (as defined in the Trading guidelines), including shares in EXOR N.V. Trading shares of EXOR N.V. is permitted but any Employee wishing to do so must first obtain approval from the Legal Department.

Sanctions and Anti-Money Laundering

Jurisdictions in which PartnerRe operates often impose legal restrictions against doing business with certain designated countries, people and organizations (the "Applicable Sanctions").

It is generally PROHIBITED to directly or indirectly engage in trade, financial or commercial transactions and other dealings ("Transaction(s)"):

- in a country subject to total embargo in accordance with Applicable Sanctions;
- with or that would benefit individuals, entities and vessels that are the subject of Applicable Sanctions or that are owned or controlled by individuals and/or entities that are the subject of Applicable Sanctions; or
- for activities prohibited by the Applicable Sanctions.

PartnerRe undertakes to take reasonable measures to detect and prevent money laundering[1] and related activities. PartnerRe and its Employees are prohibited from knowingly laundering money and shall be vigilant before engaging in a Transaction with a counterparty.

Employees are required to familiarize themselves and to comply with the instructions set forth in PartnerRe's Sanctions and Anti-Money Laundering Guidelines and other supporting documents in order to detect and prevent money laundering, terrorism financing or transactions with prohibited countries, people and organizations.

Q Where can I find a list of the designated countries that have restrictions in place that may prevent PartnerRe from doing business there?

A A list of the designated countries can be found on Relink.

[1] Practice of disguising the origins of illegally-obtained money in order to create the impression that the funds were derived from a legitimate source. Money laundering occurs in connection with a wide variety of crimes, including illegal arms sales, drug trafficking, robbery, fraud, racketeering, and terrorism

Anti-Trust and Fair Dealing

Guidelines: Anti-Trust

PartnerRe is committed to preserving free competition according to all anti-trust and competition laws and regulations applicable to the jurisdictions in which we conduct business.

Employees are required to compete independently, in an ethical manner and must endeavor to deal fairly with PartnerRe's clients, suppliers, service providers, competitors and other Employees. No Employee should take unlawful advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts or any other unfair dealing practice.

Q Am I permitted to talk to our competitors about pricing trends as long as I don't talk specifically about PartnerRe pricing or our competitors' products?

A General discussions on publicly known industry trends may be permitted. You must however be mindful of how these discussions may be perceived and how this information may be used by others. As a rule, you should always decline to discuss specific pricing and terms with competitors.

Bribery and Corruption

Guidelines: Anti-Bribery

PartnerRe is committed to fighting corruption, in compliance with applicable Regulations. Employees must not accept or offer, directly or indirectly, during the course of their duties, any benefit (including money, gifts or services) from or to public officials, politicians, political parties, or any other person or organization with a view to inducing them to do or not do something within the scope of, or facilitated by, their job or position.

Employees should also at all times be mindful of cultural and geographic differences in the different countries we operate in and disregard any local practice, rule or custom unless in line with the standards set forth in the Code of Conduct or required by local law. Any such situation should be referred to the Legal Department.

Fraud

Guidelines: Anti-Fraud

There is no tolerance of fraud involving any Employees or third party with a business association with PartnerRe. Many of the actions that are prohibited under this Code of Conduct may constitute fraudulent activity, including, but not limited to:

- Any dishonest or intentionally misleading act.
- Misappropriation of funds, securities, supplies, or other PartnerRe assets.
- Impropriety in the handling or reporting of money or financial transactions and statements.
- Profiting as a result of being in possession of Material Non-Public Information relating to PartnerRe activities.
- Disclosing confidential or proprietary information to outside parties.
- Disclosing securities activities or acquisitions engaged in or contemplated by PartnerRe.
- Accepting or seeking anything of material value from contractors, vendors, brokers, agents, client companies, MGAs/TPAs, or persons providing services/materials to PartnerRe.
- Destruction, removal or inappropriate use of records and intellectual property (electronic or physical), furniture, fixtures or equipment.
- Recording of fictitious journal entries or similar adjustments.
- Intentionally biasing assumptions and judgments used to estimate certain account balances such as loss reserves.
- Entering into transactions that are outside PartnerRe's normal or approved course of business and lacking in economic substance.
- Any similar or related irregularity.

Q Should I report a suspicion of fraud even if I don't have any proof?

A If you report a breach of the Regulations or the Code of Conduct, you should be as specific as possible about the possible violation you have witnessed and provide as much detailed information as you can to help facilitate an investigation. Even if you don't have evidence, you should still report suspected fraudulent behavior.

Protection and Proper Use of PartnerRe Resources

Guidelines: Information Technology, Anti-Bribery

Employees have a responsibility to safeguard and make proper and efficient use of PartnerRe's assets (both tangible and intangible) and systems ("PartnerRe Resources").

Each Employee has an obligation to prevent PartnerRe Resources from being lost, damaged, misused, stolen, embezzled or destroyed.

PartnerRe Resources are intended to be used for legitimate business purposes. Limited personal use of PartnerRe Resources is permissible when such use does not lead to inappropriate expense, interfere with business operations or violate the Regulations, the Code of Conduct or any other PartnerRe policies or guidelines.

Corporate Opportunities

Employees have a duty to promote PartnerRe's legitimate interests when the opportunity to do so arises and to use PartnerRe Resources exclusively for that purpose. Corporate opportunities must not be taken or used for personal gain.

Employees shall not take personal advantage of PartnerRe's property, information or their position and shall not compete directly or indirectly with PartnerRe.

Q One of my relatives is looking for a new insurer and has asked me to set up a meeting with one of our cedants. Is this acceptable under the Code of Conduct?

A No. You may not arrange or facilitate any business transaction between any Immediate Family Members and any client or supplier.

In certain circumstances, it is acceptable to make recommendations to third parties in a personal capacity, provided that you are not involved in arranging or facilitating any meeting and you have no involvement with any relationship that may ensue.

Electronic Communications

Guidelines: Electronic Communications

PartnerRe provides information systems and computer networks to Employees. All information conveyed by any type of Electronic Communications (as defined in the Electronic Communications Guidelines) must be conducted lawfully, in an appropriate manner and, consequently, must be clear, concise and unambiguous and at all times respectful of other individuals.

Confidentiality

Guidelines: Data Privacy, Information Security, External Communications, Information Technology

Employees must maintain the confidentiality of all information entrusted to them and shall not use confidential information unless in possession of express and explicit authorization. With respect to personal data, information must always be held in strict compliance of the applicable Regulations concerning the protection of personal data.

Any disclosure of confidential information must be either authorized internally or required by applicable Regulations or legal process.

Confidential information includes any type of non-public business or personal information with respect to PartnerRe, its Employees, clients, prospective clients, suppliers, shareholders and any other persons or entities with whom PartnerRe has a relationship and that have an expectation of confidentiality.

The obligation to preserve confidential information continues even after Employees leave PartnerRe.

Q I meet after work with a number of friends who work for competitor organizations. How do I decide what is and isn't confidential information?

A You must use your own judgment, but be aware that confidential information is any non-public information. If in doubt, be cautious, and don't discuss specific business issues.

This Code of Conduct is supplemented by various documents, which are referenced herein. Employees are required to read, understand, accept and apply the principles contained in the Code of Conduct and in all other documents applicable to them in their everyday work and behavior.

www.partnerre.com

CERTIFICATION

I, Emmanuel Clarke, certify that:

1. I have reviewed this annual report on Form 20-F of PartnerRe Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 20, 2019

By:	/s/ EMMANUEL CLARKE
Name:	**Emmanuel Clarke**
Title:	**President & Chief Executive Officer**

CERTIFICATION

I, Mario Bonaccorso, certify that:

1. I have reviewed this annual report on Form 20-F of PartnerRe Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the company’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting; and

5. The company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company’s auditors and the audit committee of the company’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company’s internal control over financial reporting.

Date: March 20, 2019

By:	/s/ MARIO BONACCORSO
Name:	**Mario Bonaccorso**
Title:	**Executive Vice President & Chief Financial Officer**

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SECTION 906 CERTIFICATIONS

The certification set forth below is being submitted in connection with the Annual Report on Form 20-F for the year ended December 31, 2018 (the "Report") of PartnerRe Ltd. (the "Company") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Emmanuel Clarke, the Chief Executive Officer, and Mario Bonaccorso, the Chief Financial Officer, each certifies that, to the best of his knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 20, 2019

By:	/s/ EMMANUEL CLARKE
Name:	**Emmanuel Clarke**
Title:	**President & Chief Executive Officer**
By:	/s/ MARIO BONACCORSO
Name:	**Mario Bonaccorso**
Title:	**Executive Vice President & Chief Financial Officer**