

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

FORM 10-K

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from to

Commission File No. 001-14428

RENAISSANCERE HOLDINGS LTD.

(Exact Name Of Registrant As Specified In Its Charter)

Bermuda

(State or Other Jurisdiction of Incorporation or Organization)

98-0141974

(I.R.S. Employer Identification Number)

Renaissance House, 12 Crow Lane, Pembroke HM 19 Bermuda

(Address of Principal Executive Offices)

(441) 295-4513

(Registrant's telephone number)

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

Title of each class	Trading symbol	Name of each exchange on which registered
Common Shares, Par Value \$1.00 per share	RNR	New York Stock Exchange
Series C 6.08% Preference Shares, Par Value \$1.00 per share	RNR PRC	New York Stock Exchange
Series E 5.375% Preference Shares, Par Value \$1.00 per share	RNR PRE	New York Stock Exchange
Depository Shares, each representing a 1/1,000th interest in a Series F 5.750% Preference Share, Par Value \$1.00 per share	RNR PRF	New York Stock Exchange

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

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

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company, as defined in Rule 12b-2 of the Act. Large accelerated filer ☒, Accelerated filer ☐, Non-accelerated filer ☐, Smaller reporting company ☐, Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

The aggregate market value of Common Shares held by nonaffiliates of the registrant at June 30, 2019 was \$7.7 billion based on the closing sale price of the Common Shares on the New York Stock Exchange on that date.

The number of Common Shares, par value US \$1.00 per share, outstanding at February 3, 2020 was 44,148,116.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2020 Annual General Meeting of Shareholders are incorporated by reference into Part III of this report.

**RENAISSANCERE HOLDINGS LTD.
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NOTE ON FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K for the year ended December 31, 2019 (this "Form 10-K") of RenaissanceRe Holdings Ltd. (the "Company" or "RenaissanceRe") contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Forward-looking statements are necessarily based on estimates and assumptions that are inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which, with respect to future business decisions, are subject to change. These uncertainties and contingencies can affect actual results and could cause actual results to differ materially from those expressed in any forward-looking statements made by, or on behalf of, us. In particular, statements using words such as "may," "should," "estimate," "expect," "anticipate," "intend," "believe," "predict," "potential," or words of similar import generally involve forward-looking statements. For example, we may include certain forward-looking statements in "Management's Discussion and Analysis of Financial Condition and Results of Operations" with regard to trends in results, prices, volumes, operations, investment results, margins, combined ratios, fees, reserves, market conditions, risk management and exchange rates. This Form 10-K also contains forward-looking statements with respect to our business and industry, such as those relating to our strategy and management objectives, market standing and product volumes, competition and new entrants in our industry, industry capital, insured losses from loss events, government initiatives and regulatory matters affecting the reinsurance and insurance industries.

The inclusion of forward-looking statements in this report should not be considered as a representation by us or any other person that our current objectives or plans will be achieved. Numerous factors could cause our actual results to differ materially from those addressed by the forward-looking statements, including the following:

- the frequency and severity of catastrophic and other events we cover;
- the effectiveness of our claims and claim expense reserving process;
- the effect of climate change on our business, including the trend towards increasingly frequent and severe climate events;
- our ability to maintain our financial strength ratings;
- the effect of emerging claims and coverage issues;
- collection on claimed retrocessional coverage, and new retrocessional reinsurance being available on acceptable terms and providing the coverage that we intended to obtain;
- our reliance on a small and decreasing number of reinsurance brokers and other distribution services for the preponderance of our revenue;
- our exposure to credit loss from counterparties in the normal course of business;
- the effect of continued challenging economic conditions throughout the world;
- soft reinsurance underwriting market conditions;
- the performance of our investment portfolio;
- a contention by the United States (the "U.S.") Internal Revenue Service (the "IRS") that Renaissance Reinsurance Ltd. ("Renaissance Reinsurance"), or any of our other Bermuda subsidiaries, is subject to taxation in the U.S.;
- the effects of U.S. tax reform legislation and possible future tax reform legislation and regulations, including changes to the tax treatment of our shareholders or investors in our joint ventures or other entities we manage;
- the success of any of our strategic investments or acquisitions, including our ability to manage our operations as our product and geographical diversity increases;
- our ability to retain our key senior officers and to attract or retain the executives and employees necessary to manage our business;
- our ability to effectively manage capital on behalf of investors in joint ventures or other entities we manage;
- foreign currency exchange rate fluctuations;

- changes in the method for determining the London Inter-bank Offered Rate (“LIBOR”) and the potential replacement of LIBOR;
- losses we could face from terrorism, political unrest or war;
- the effect of cybersecurity risks, including technology breaches or failure, on our business;
- our ability to successfully implement our business strategies and initiatives;
- our ability to determine any impairments taken on our investments;
- the effects of inflation;
- the ability of our ceding companies and delegated authority counterparties to accurately assess the risks they underwrite;
- the effect of operational risks, including system or human failures;
- our ability to raise capital if necessary;
- our ability to comply with covenants in our debt agreements;
- changes to the regulatory systems under which we operate, including as a result of increased global regulation of the insurance and reinsurance industries;
- changes in Bermuda laws and regulations and the political environment in Bermuda;
- our dependence on the ability of our operating subsidiaries to declare and pay dividends;
- aspects of our corporate structure that may discourage third-party takeovers and other transactions;
- difficulties investors may have in servicing process or enforcing judgments against us in the U.S.;
- the cyclical nature of the reinsurance and insurance industries;
- adverse legislative developments that reduce the size of the private markets we serve or impede their future growth;
- consolidation of competitors, customers and insurance and reinsurance brokers;
- the effect on our business of the highly competitive nature of our industry, including the effect of new entrants to, competing products for and consolidation in the (re)insurance industry;
- other political, regulatory or industry initiatives adversely impacting us;
- our ability to comply with applicable sanctions and foreign corrupt practices laws;
- increasing barriers to free trade and the free flow of capital;
- international restrictions on the writing of reinsurance by foreign companies and government intervention in the natural catastrophe market;
- the effect of Organisation for Economic Co-operation and Development (the “OECD”) or European Union (“EU”) measures to increase our taxes and reporting requirements;
- the effect of the vote by the United Kingdom (the “U.K.”) to leave the EU;
- changes in regulatory regimes and accounting rules that may impact financial results irrespective of business operations;
- our need to make many estimates and judgments in the preparation of our financial statements;
- risks that the ongoing integration of TMR (as defined herein) disrupts or distracts from current plans and operations; and
- our ability to recognize the benefits of the acquisition of TMR.

As a consequence, our future financial condition and results may differ from those expressed in any forward-looking statements made by or on behalf of us. The factors listed above, which are discussed in more detail in “Part I, Item 1A. Risk Factors,” in this Form 10-K, should not be construed as exhaustive. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to revise or update forward-looking statements to reflect new information, events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

PART I

ITEM 1. BUSINESS

In this Form 10-K, references to “RenaissanceRe” refer to RenaissanceRe Holdings Ltd. (the parent company) and references to “we,” “us,” “our” and the “Company” refer to RenaissanceRe Holdings Ltd. together with its subsidiaries, unless the context requires otherwise.

For your convenience, we have included a “Glossary of Selected Insurance and Reinsurance Terms” at the end of “Part I, Item 1. Business” of this Form 10-K.

All dollar amounts referred to in this Form 10-K are in U.S. dollars unless otherwise indicated.

Due to rounding, numbers presented in the tables included in this Form 10-K may not add up precisely to the totals provided.

OVERVIEW

RenaissanceRe is a global provider of reinsurance and insurance. We provide property, casualty and specialty reinsurance and certain insurance solutions to customers, principally through intermediaries. Established in 1993, we have offices in Bermuda, Australia, Ireland, Singapore, Switzerland, the U.K., and the U.S. Our operating subsidiaries include Renaissance Reinsurance, Renaissance Reinsurance U.S. Inc. (“Renaissance Reinsurance U.S.”), RenaissanceRe Specialty U.S. Ltd. (“RenaissanceRe Specialty U.S.”), RenaissanceRe Europe AG (formerly known as Tokio Millennium Re AG) (“RenaissanceRe Europe”), RenaissanceRe (UK) Limited (formerly known as Tokio Millennium Re (UK) Limited) (“RenaissanceRe UK”), Renaissance Reinsurance of Europe Unlimited Company (“Renaissance Reinsurance of Europe”) and our Lloyd’s syndicate, RenaissanceRe Syndicate 1458 (“Syndicate 1458”). We also underwrite reinsurance on behalf of joint ventures, including DaVinci Reinsurance Ltd. (“DaVinci”), Fibonacci Reinsurance Ltd. (“Fibonacci Re”), Top Layer Reinsurance Ltd. (“Top Layer Re”), Upsilon RFO Re Ltd. (“Upsilon RFO”) and Vermeer Reinsurance Ltd. (“Vermeer”). In addition, through RenaissanceRe Medici Fund Ltd. (“Medici”), we invest in various insurance-based investment instruments that have returns primarily tied to property catastrophe risk.

We aspire to be the world’s best underwriter by matching well-structured risks with efficient sources of capital, and our mission is to produce superior returns for our shareholders over the long term. We aim to accomplish these goals by being a trusted, long-term partner to our customers for assessing and managing risk, delivering responsive and innovative solutions, leveraging our core capabilities of risk assessment and information management, investing in these core capabilities in order to serve our customers across market cycles, and keeping our promises. Our strategy focuses on superior risk selection, superior customer relationships and superior capital management. We provide value to our customers and joint venture partners in the form of financial security, innovative products, and responsive service. We are known as a leader in paying valid claims promptly. We principally measure our financial success through long-term growth in tangible book value per common share plus the change in accumulated dividends, which we believe is the most appropriate measure of our financial performance, and in respect of which we believe we have delivered superior performance over time.

Our core products include property, casualty and specialty reinsurance, and certain insurance products principally distributed through intermediaries, with whom we have cultivated long-term relationships. We believe we have been one of the world’s leading providers of catastrophe reinsurance since our founding. In recent years, through the strategic execution of several initiatives, including organic growth and acquisitions, we have expanded and diversified our casualty and specialty platform and products, and believe we are a leader in certain casualty and specialty lines of business. We also pursue a number of other opportunities through our ventures unit, which has responsibility for creating and managing our joint ventures, executing customized reinsurance transactions to assume or cede risk, and managing certain strategic investments directed at classes of risk other than catastrophe reinsurance. From time to time we consider diversification into new ventures, either through organic growth, the formation of new joint ventures, or the acquisition of, or the investment in, other companies or books of business of other companies.

We have determined our business consists of the following reportable segments: (1) Property, which is comprised of catastrophe and other property reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit, and (2) Casualty and Specialty, which is comprised of casualty and specialty reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit.

To best serve our clients in the places they do business, we have operating subsidiaries, branches, joint ventures and underwriting platforms around the world, including DaVinci, Fibonacci Re, Renaissance Reinsurance, Top Layer Re, Upsilon RFO and Vermeer in Bermuda, Renaissance Reinsurance U.S. in the U.S., Syndicate 1458 in the U.K. and RenaissanceRe Europe in Switzerland, which has branches in Australia, Bermuda, the U.K. and the U.S. We write property and casualty and specialty reinsurance through our wholly owned operating subsidiaries, joint ventures and Syndicate 1458 and certain insurance products primarily through Syndicate 1458. Syndicate 1458 provides us with access to Lloyd's extensive distribution network and worldwide licenses, and also writes business through delegated authority arrangements. The underwriting results of our operating subsidiaries and underwriting platforms are included in our Property and Casualty and Specialty segment results as appropriate.

Since a meaningful portion of the reinsurance and insurance we write provides protection from damages relating to natural and man-made catastrophes, our results depend to a large extent on the frequency and severity of such catastrophic events, and the coverages we offer to customers affected by these events. We are exposed to significant losses from these catastrophic events and other exposures we cover. Accordingly, we expect a significant degree of volatility in our financial results and our financial results may vary significantly from quarter-to-quarter and from year-to-year, based on the level of insured catastrophic losses occurring around the world. We view our exposure to casualty and specialty lines of business as an efficient use of capital given these risks are generally less correlated with our property lines of business. This has allowed us to bring additional capacity to our clients, across a wider range of product offerings, while continuing to be good stewards of our shareholders' capital.

We continually explore appropriate and efficient ways to address the risk needs of our clients and the impact of various regulatory and legislative changes on our operations. We have created and managed, and continue to manage, multiple capital vehicles across several jurisdictions and may create additional risk bearing vehicles or enter into additional jurisdictions in the future. In addition, our differentiated strategy and capabilities position us to pursue bespoke or large solutions for clients, which may be non-recurring. This, and other factors including the timing of contract inception, could result in significant volatility of premiums in both our Property and Casualty and Specialty segments. As our product and geographical diversity increases, we may be exposed to new risks, uncertainties and sources of volatility.

Acquisition of Tokio Millennium Re

On March 22, 2019, the Company's wholly owned subsidiary, RenaissanceRe Specialty Holdings (UK) Limited ("RenaissanceRe Specialty Holdings"), completed its previously announced purchase of all of the share capital of RenaissanceRe Europe, RenaissanceRe UK, and their respective subsidiaries (collectively, "TMR") pursuant to a Stock Purchase Agreement by and among RenaissanceRe, Tokio Marine & Nichido Fire Insurance Co. Ltd. ("Tokio") and, with respect to certain sections only, Tokio Marine Holdings, Inc. entered into on October 30, 2018. Refer to "Note 3. Acquisition of Tokio Millennium Re" in our "Notes to the Consolidated Financial Statements" for additional information regarding the acquisition of TMR. TMR comprised the treaty reinsurance business of Tokio Marine Holdings, Inc. The results of operations of TMR from March 22, 2019 through December 31, 2019, are reflected in the Company's consolidated financial results for year ended December 31, 2019.

CORPORATE STRATEGY

We aspire to be the world's best underwriter by matching well-structured risks with efficient sources of capital and our mission is to produce superior returns for our shareholders over the long term. Our strategy for achieving these objectives, which is supported by our core values, our principles and our culture, is to operate an integrated system of what we believe are our three competitive advantages: *superior customer relationships*, *superior risk selection* and *superior capital management*. We believe all three competitive advantages are required to achieve our objectives, and we aim to seamlessly coordinate the delivery of these competitive advantages for the benefit of our ceding insurers, brokers, investors in our joint ventures and shareholders.

Superior Customer Relationships. We aim to be a trusted long-term partner to our customers for assessing and managing risk and delivering responsive solutions. We believe our modeling and technical expertise, our risk management products, and our track record of keeping our promises have made us a provider of first choice in many lines of business to our customers worldwide. We seek to offer stable, predictable and consistent risk-based pricing and a prompt turnaround on claims.

Superior Risk Selection. We aim to build a portfolio of risks that produces an attractive risk-adjusted return on utilized capital. We develop a perspective of each risk using both our underwriters' expertise and sophisticated risk selection techniques, including computer models and databases such as Renaissance Exposure Management System ("REMS©"). We pursue a disciplined approach to underwriting and seek to select only those risks that we believe will produce a portfolio with an attractive return, subject to prudent risk constraints. We manage our portfolio of risks dynamically, both within sub-portfolios and across the Company.

Superior Capital Management. We aim to write as much attractively priced business as is accessible to us and then manage our capital accordingly. We generally look to raise capital when we forecast increased demand in the market, at times by accessing capital through joint ventures or other structures, and return capital to our shareholders or joint venture investors when the demand for our coverages appears to decline and when we believe a return of capital would be beneficial to our shareholders or joint venture investors. In using joint ventures, we aim to leverage our access to business and our underwriting capabilities on an efficient capital base, develop fee income, generate profit commissions, diversify our portfolio, and provide attractive risk-adjusted returns to our capital providers. We also routinely evaluate and review potential joint venture opportunities and strategic investments.

We believe we are well positioned to fulfill our objectives by virtue of the experience and skill of our management team, our integrated and flexible underwriting and operating platform, our significant financial strength, our strong relationships with brokers and customers, our commitment to superior service and our proprietary modeling technology. In particular, we believe our strategy, high performance culture, and commitment to our customers and joint venture partners help us to differentiate ourselves by offering specialized services and products at times and in markets where capacity and alternatives may be limited.

SEGMENTS

Our reportable segments are defined as follows: (1) Property, which is comprised of catastrophe and other property reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit, and (2) Casualty and Specialty, which is comprised of casualty and specialty reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit. In addition to our two reportable segments, we have an Other category, which primarily includes our strategic investments, investments unit, corporate expenses, capital servicing costs, noncontrolling interests, certain expenses related to acquisitions and the remnants of our former Bermuda-based insurance operations. The results of operations of TMR from March 22, 2019 through December 31, 2019, are reflected in the Company's existing reportable segments for the year ended December 31, 2019.

The following table shows gross premiums written allocated between our segments. Operating results relating to our segments are included in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

<u>Year ended December 31,</u>	2019		2018		2017	
(in thousands, except percentages)	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written
Property	\$ 2,430,985	50.6%	\$ 1,760,926	53.2%	\$ 1,440,437	51.5 %
Casualty and Specialty	2,376,765	49.4%	1,549,501	46.8%	1,357,110	48.5 %
Other category	—	—%	—	—%	(7)	— %
Total gross premiums written	<u>\$ 4,807,750</u>	<u>100.0%</u>	<u>\$ 3,310,427</u>	<u>100.0%</u>	<u>\$ 2,797,540</u>	<u>100.0 %</u>

We write proportional business as well as excess of loss business. In addition, we maintain delegated authority arrangements through Syndicate 1458, which are included in our Property and Casualty and Specialty segments, as appropriate. Our relative mix of business between proportional business and excess of loss business has fluctuated in the past and will likely vary in the future. Proportional and delegated authority business typically have relatively higher premiums per unit of expected underwriting income, together with a higher acquisition expense ratio and combined ratio, than traditional excess of loss reinsurance, as these coverages tend to be exposed to relatively more attritional, and frequent, losses while being subject to less expected severity.

The following table shows gross premiums written allocated between excess of loss, proportional and delegated authority for each of our segments:

<u>Year ended December 31, 2019</u>	Property	Casualty and Specialty	Other	Total
(in thousands)				
Excess of loss	\$ 1,758,787	\$ 508,515	\$ —	\$ 2,267,302
Proportional	546,405	1,583,554	—	2,129,959
Delegated authority	125,793	284,696	—	410,489
Total gross premiums written	<u>\$ 2,430,985</u>	<u>\$ 2,376,765</u>	<u>\$ —</u>	<u>\$ 4,807,750</u>
<u>Year ended December 31, 2018</u>				
Excess of loss	\$ 1,473,381	\$ 366,635	\$ —	\$ 1,840,016
Proportional	220,458	965,141	—	1,185,599
Delegated authority	67,087	217,725	—	284,812
Total gross premiums written	<u>\$ 1,760,926</u>	<u>\$ 1,549,501</u>	<u>\$ —</u>	<u>\$ 3,310,427</u>
<u>Year ended December 31, 2017</u>				
Excess of loss	\$ 1,192,980	\$ 262,415	\$ (7)	\$ 1,455,388
Proportional	195,473	894,810	—	1,090,283
Delegated authority	51,984	199,885	—	251,869
Total gross premiums written	<u>\$ 1,440,437</u>	<u>\$ 1,357,110</u>	<u>\$ (7)</u>	<u>\$ 2,797,540</u>

Property Segment

Our Property segment includes our catastrophe class of business, principally comprised of excess of loss reinsurance and excess of loss retrocessional reinsurance to insure insurance and reinsurance companies against natural and man-made catastrophes, and our other property class of business, primarily comprised of proportional reinsurance, property per risk, property (re)insurance, binding facilities and regional U.S. multi-line reinsurance. The following table shows gross premiums written in our Property segment allocated by class of business:

<u>Year ended December 31,</u>	2019		2018		2017	
(in thousands, except percentages)	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written
Catastrophe	\$ 1,595,472	65.6%	\$ 1,349,324	76.6%	\$ 1,104,450	76.7%
Other property	835,513	34.4%	411,602	23.4%	335,987	23.3%
Total Property segment gross premiums written	<u>\$ 2,430,985</u>	<u>100.0%</u>	<u>\$ 1,760,926</u>	<u>100.0%</u>	<u>\$ 1,440,437</u>	<u>100.0%</u>

We write catastrophe reinsurance and insurance coverage protecting against large natural catastrophes, such as earthquakes, hurricanes, typhoons and tsunamis, as well as claims arising from other natural and man-made catastrophes such as winter storms, freezes, floods, fires, windstorms, tornadoes, explosions and acts of terrorism. We offer this coverage to insurance companies and other reinsurers primarily on an excess of loss basis. This means we begin paying when our customers' claims from a catastrophe exceed a certain retained amount. We also offer proportional coverages and other structures on a catastrophe-exposed basis and may increase these offerings on an absolute or relative basis in the future. Recently, as our other property class of business has become a larger percentage of our Property segment gross premiums written, proportional coverage has become a larger percentage of our Property segment.

As noted above, our excess of loss property contracts generally cover all natural perils, and our predominant exposure under such coverage is to property damage. However, other risks, including business interruption and other non-property losses, may also be covered under our property reinsurance contracts when arising from a covered peril.

We offer our coverages on a worldwide basis. Because of the wide range of possible catastrophic events to which we are exposed, including the size of such events and the potential for multiple events to occur in the same time period, our property business is volatile and our financial condition and results of operations reflect this volatility. To moderate the volatility of our risk portfolio, we may increase or decrease our presence in the property business based on market conditions and our assessment of risk-adjusted pricing adequacy. We frequently purchase reinsurance or other protection for our own account for a number of reasons, including to optimize the expected outcome of our underwriting portfolio, to manage capital requirements for regulated entities and to reduce the financial impact that a large catastrophe or a series of catastrophes could have on our results.

Casualty and Specialty Segment

We write casualty and specialty reinsurance and insurance covering primarily targeted classes of business where we believe we have a sound basis for underwriting and pricing the risk we assume. Principally all of the business is reinsurance, however our book of insurance business has been increasing in recent periods, and may continue to do so. The following table shows gross premiums written in our Casualty and Specialty segment allocated by class of business:

<u>Year ended December 31,</u>	<u>2019</u>		<u>2018</u>		<u>2017</u>	
(in thousands, except percentages)	<u>Gross Premiums Written</u>	<u>Percentage of Gross Premiums Written</u>	<u>Gross Premiums Written</u>	<u>Percentage of Gross Premiums Written</u>	<u>Gross Premiums Written</u>	<u>Percentage of Gross Premiums Written</u>
General casualty (1)	\$ 807,901	34.0%	\$ 453,097	29.2%	\$ 417,880	30.8%
Professional liability (2)	650,750	27.4%	485,851	31.4%	452,310	33.3%
Financial lines (3)	457,000	19.2%	352,902	22.8%	303,800	22.4%
Other (4)	461,114	19.4%	257,651	16.6%	183,120	13.5%
Total Casualty and Specialty segment gross premiums written	<u>\$ 2,376,765</u>	<u>100.0%</u>	<u>\$ 1,549,501</u>	<u>100.0%</u>	<u>\$ 1,357,110</u>	<u>100.0%</u>

(1) Includes automobile liability, casualty clash, employer's liability, umbrella or excess casualty, workers' compensation and general liability.

(2) Includes directors and officers, medical malpractice, and professional indemnity.

(3) Includes financial guaranty, mortgage guaranty, political risk, surety and trade credit.

(4) Includes accident and health, agriculture, aviation, cyber, energy, marine, satellite and terrorism. Lines of business such as regional multi-line and whole account may have characteristics of various other classes of business, and are allocated accordingly.

In recent years, we have expanded our Casualty and Specialty segment operations through organic growth initiatives and acquisitions, and we plan to continue to expand these operations over time if market conditions are appropriate.

Our Casualty and Specialty segment gross premiums written may be subject to significant volatility as certain lines of business in this segment can be influenced by a small number of relatively large transactions. We seek to underwrite these lines using a disciplined underwriting approach and sophisticated analytical tools. We generally target lines of business where we believe we can adequately quantify the risks assumed and provide coverage where we believe our underwriting is robust and the market is attractive. We also seek to identify market dislocations and write new lines of business whose risk and return characteristics are estimated to exceed our hurdle rates. Furthermore, we also seek to manage the correlations of this business with our overall portfolio. We believe that our underwriting and analytical capabilities have positioned us well to manage our casualty and specialty business.

We offer our casualty and specialty reinsurance products principally on a proportional basis, and we also provide excess of loss coverage. These products frequently include tailored features such as limits or sub-limits which we believe help us manage our exposures. Any liability exceeding, or otherwise not subject to, such limits reverts to the cedant. Our Casualty and Specialty segment frequently provides coverage for relatively large limits or exposures, and thus we are subject to potential significant claims volatility.

Our Casualty and Specialty segment offers certain casualty insurance products through Syndicate 1458, including general liability, medical malpractice and professional liability. Syndicate 1458 also writes business through delegated authority arrangements.

As a result of our financial strength, we have the ability to offer significant capacity and, for select risks, we have made available significant limits. We believe these capabilities, the strength of our casualty and specialty reinsurance underwriting team, and our demonstrated ability and willingness to pay valid claims are competitive advantages of our casualty and specialty reinsurance business. While we believe that these and other initiatives will support growth in our Casualty and Specialty segment, we intend to continue to apply our disciplined underwriting approach.

Other

Our Other category primarily includes the results of: (1) our share of strategic investments in certain markets we believe offer attractive risk-adjusted returns or where we believe our investment adds value, and where, rather than assuming exclusive management responsibilities ourselves, we partner with other market participants; (2) our investment unit which manages and invests the funds generated by our consolidated operations; (3) corporate expenses, certain expenses related to acquisitions, capital servicing costs and noncontrolling interests; and (4) the remnants of our former Bermuda-based insurance operations.

Geographic Breakdown

Our exposures are generally diversified across geographic zones, but are also a function of market conditions and opportunities. Our largest exposure has historically been to the U.S. and Caribbean market, which represented 50.7% of our gross premiums written for the year ended December 31, 2019. A significant amount of our U.S. and Caribbean premium provides coverage against windstorms (mainly U.S. Atlantic hurricanes), earthquakes and other natural and man-made catastrophes.

The following table sets forth the amounts and percentages of our gross premiums written allocated to the territory of coverage exposure:

<u>Year ended December 31,</u>	2019		2018		2017	
	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written	Gross Premiums Written	Percentage of Gross Premiums Written
(in thousands, except percentages)						
<i>Property Segment</i>						
U.S. and Caribbean	\$ 1,368,205	28.5%	\$ 978,063	29.4%	\$ 954,269	34.1 %
Worldwide	643,744	13.4%	464,311	14.0%	305,915	10.9 %
Europe	182,544	3.8%	144,857	4.4%	49,486	1.8 %
Japan	90,328	1.9%	71,601	2.2%	49,821	1.8 %
Worldwide (excluding U.S.) (1)	79,393	1.6%	66,872	2.0%	48,182	1.7 %
Australia and New Zealand	32,203	0.7%	19,273	0.6%	14,151	0.5 %
Other	34,568	0.7%	15,949	0.5%	18,613	0.7 %
Total Property Segment	2,430,985	50.6%	1,760,926	53.1%	1,440,437	51.5 %
<i>Casualty and Specialty Segment</i>						
U.S. and Caribbean	1,071,170	22.3%	667,125	20.2%	622,757	22.3 %
Worldwide	935,626	19.5%	776,976	23.4%	686,253	24.5 %
Europe	227,178	4.7%	15,296	0.5%	9,752	0.3 %
Australia and New Zealand	34,053	0.7%	3,667	0.1%	4,141	0.1 %
Worldwide (excluding U.S.) (1)	25,291	0.5%	31,734	1.0%	10,104	0.4 %
Other	83,447	1.7%	54,703	1.7%	24,103	0.9 %
Total Casualty and Specialty Segment	2,376,765	49.4%	1,549,501	46.9%	1,357,110	48.5 %
Other category	—	—%	—	—%	(7)	— %
Total gross premiums written	\$ 4,807,750	100.0%	\$ 3,310,427	100.0%	\$ 2,797,540	100.0 %

(1) The category "Worldwide (excluding U.S.)" consists of contracts that cover more than one geographic region (other than the U.S.).

VENTURES

We pursue a number of other opportunities through our ventures unit, which has responsibility for creating and managing our joint ventures, executing customized reinsurance transactions to assume or cede risk and managing certain investments directed at classes of risk other than catastrophe reinsurance.

Managed Joint Ventures

We actively manage a number of joint ventures which provide us with an additional presence in the market, enhance our client relationships and generate fee income and profit commissions. These joint ventures

allow us to leverage our access to business and our underwriting capabilities on a larger capital base. Currently, our principal joint ventures include DaVinci, Fibonacci Re, Top Layer Re, Langhorne (comprised of Langhorne Holdings LLC ("Langhorne Holdings") and Langhorne Partners LLC ("Langhorne Partners" and, collectively with Langhorne Holdings, "Langhorne"), Medici, Upsilon RFO, RenaissanceRe Upsilon Fund Ltd. ("Upsilon Fund") and Vermeer.

DaVinci

DaVinci was established in 2001 and principally writes property catastrophe reinsurance and certain low frequency, high severity specialty reinsurance lines of business on a global basis. In general, we seek to construct for DaVinci a portfolio with risk characteristics similar to those of Renaissance Reinsurance's property catastrophe reinsurance portfolio, and from time to time, certain lines of casualty and specialty reinsurance written by Renaissance Reinsurance. In accordance with DaVinci's underwriting guidelines, it can only participate in business also underwritten by Renaissance Reinsurance. We maintain majority voting control of DaVinci's holding company, DaVinciRe Holdings Ltd. ("DaVinciRe"), and accordingly, consolidate the results of DaVinciRe into our consolidated results of operations and financial position. The underwriting results of DaVinciRe are principally included in our Property segment. We seek to manage DaVinci's capital efficiently over time in light of the market opportunities and needs we perceive and believe we are able to serve. Renaissance Underwriting Managers, Ltd. ("RUM"), a wholly owned subsidiary of RenaissanceRe, acts as the exclusive underwriting manager for DaVinciRe in return for a management fee and performance based incentive fee. Our noncontrolling economic ownership in DaVinciRe was 21.9% at December 31, 2019 (2018 - 22.1%).

We expect our noncontrolling economic ownership in DaVinciRe to fluctuate over time.

Top Layer Re

Top Layer Re was established in 1999 and writes high excess non-U.S. property catastrophe reinsurance. Top Layer Re is owned 50% by State Farm Mutual Automobile Insurance Company ("State Farm") and 50% by Renaissance Reinsurance. State Farm provides \$3.9 billion of stop loss reinsurance coverage to Top Layer Re. Top Layer Re is managed by RUM in return for a management fee. We account for our equity ownership in Top Layer Re under the equity method of accounting and our proportionate share of its results is reflected in equity in earnings of other ventures in our consolidated statements of operations.

Medici

Medici is an exempted fund that was incorporated under the laws of Bermuda in 2009. Medici's objective is to invest substantially all of its assets in various insurance-based investment instruments that have returns primarily correlated to property catastrophe risk. Third-party investors subscribe for the majority of the participating, non-voting common shares of Medici. We maintain majority voting control of Medici through Medici's wholly-owned parent, RenaissanceRe Fund Holdings Ltd. ("Fund Holdings"), therefore the results of Medici and Fund Holdings are consolidated in our financial statements. Medici is managed by RenaissanceRe Fund Management Ltd. ("Fund Management") in return for a management fee. Our economic ownership in Medici was 12.1% at December 31, 2019 (2018 - 16.6%).

Upsilon RFO

In 2013, we formed a managed joint venture, Upsilon RFO, a Bermuda domiciled special purpose insurer ("SPI"), principally to provide additional capacity to the worldwide aggregate and per-occurrence primary and retrocessional property catastrophe excess of loss market. Upsilon RFO enhances our efforts to match desirable reinsurance risk with efficient capital through a strategic capital structure. Original business is primarily written directly by Upsilon RFO under fully-collateralized reinsurance contracts capitalized through the sale of non-voting shares to us and Upsilon Fund, and from time to time, Renaissance Reinsurance writes business for, and then cedes it to, Upsilon RFO. Upsilon RFO is considered a variable interest entity ("VIE") as it has insufficient equity capital to finance its activities without additional financial support and we are the primary beneficiary. As a result, we consolidate Upsilon RFO, and all significant inter-company transactions have been eliminated. Other than our equity investment, we have not provided any financial or other support to Upsilon RFO that we were not contractually required to provide.

Upsilon Fund

We incorporated Upsilon Fund, an exempted Bermuda limited segregated accounts company, in 2014. Upsilon Fund was formed to provide a fund structure through which third-party investors can invest in property reinsurance risk managed by us. As a segregated accounts company, Upsilon Fund is permitted to establish segregated accounts to invest in and hold identified pools of assets and liabilities. Each pool of assets and liabilities in each segregated account is ring-fenced from any claims from the creditors of Upsilon Fund's general account and from the creditors of other segregated accounts within Upsilon Fund. Third-party investors purchase redeemable, non-voting preference shares linked to specific segregated accounts of Upsilon Fund and own 100% of these shares. Upsilon Fund is managed by Fund Management in return for a management fee and performance based incentive fee. We have not provided any financial or other support to Upsilon Fund that we were not contractually required to provide. Currently, Upsilon Fund is invested in Upsilon RFO and Medici.

Vermeer

In 2018, we formed Vermeer, an exempted Bermuda reinsurer, with PGGM, a Dutch pension fund manager. Vermeer provides capacity focused on risk remote layers in the U.S. property catastrophe market. Vermeer is managed by RUM in return for a management fee. We maintain majority voting control of Vermeer, while PGGM retains economic benefits. Vermeer is considered a VIE, as it has voting rights that are not proportional to its participating rights and we are the primary beneficiary. As a result, we consolidate Vermeer and all significant inter-company transactions have been eliminated. The portion of Vermeer's earnings owned by third parties is recorded in the consolidated statements of operations as net income attributable to redeemable noncontrolling interests. We have not provided any financial or other support to Vermeer that we were not contractually required to provide.

Fibonacci Re

In 2016, Fibonacci Re, a Bermuda-domiciled SPI, was formed to provide collateralized capacity to Renaissance Reinsurance and its affiliates. Fibonacci Re raised capital from third-party investors and us via private placements of participating notes that are listed on the Bermuda Stock Exchange. This arrangement enables Renaissance Reinsurance to support its clients with additional property catastrophe reinsurance capacity and we believe it provides attractive risk-adjusted returns to our capital partners. We concluded that Fibonacci Re meets the definition of a VIE as it does not have sufficient equity capital to finance its activities. Therefore, we evaluated our relationship with Fibonacci Re and concluded we are not the primary beneficiary of Fibonacci Re as we do not have power over the activities that most significantly impact the economic performance of Fibonacci Re. As a result, we do not consolidate the financial position and results of operations of Fibonacci Re. Other than our investment in the participating notes of Fibonacci Re, we have not provided financial or other support to Fibonacci Re that we were not contractually required to provide.

Langhorne

In 2017, we closed an initiative with Reinsurance Group of America, Incorporated to source third-party capital to support reinsurers targeting large in-force life and annuity blocks. Langhorne Holdings is a company that owns and manages certain reinsurance entities within Langhorne. Langhorne Partners is the general partner for Langhorne Holdings and the entity which manages the third-party investors investing into Langhorne Holdings in return for a management and performance based incentive fee. We concluded that Langhorne Holdings meets the definition of a VIE. We are not the primary beneficiary of Langhorne Holdings and as a result, we do not consolidate the financial position or results of operations of Langhorne Holdings. We concluded that Langhorne Partners was not a VIE. We account for our investments in Langhorne Holdings and Langhorne Partners under the equity method of accounting, one quarter in arrears. We anticipate that our investment in Langhorne will increase, perhaps materially, as in-force life and annuity blocks of businesses are written. Other than our current and committed future equity investment in Langhorne, we have not provided financial or other support to Langhorne that we were not contractually required to provide.

Strategic Investments

Our ventures business unit also pursues strategic investments where, rather than assuming exclusive management responsibilities ourselves, we partner with other market participants. These investments may be directed at classes of risk other than catastrophe reinsurance, and at times may also be directed at non-insurance risks, such as Insurtech opportunities. We find these investments attractive because of their expected returns, and because they provide us with diversification benefits and information and exposure to other aspects of the market. For example, in 2018 we acquired a minority shareholding in Catalina Holdings (Bermuda) Ltd, a long-term consolidator in the non-life insurance/reinsurance run-off sector, which is accounted for at fair value and is included in other investments. Other examples of strategic investments include our investments in Bluegrass Insurance Management, LLC, Tower Hill Claims Service, LLC, Tower Hill Holdings, Inc., Tower Hill Insurance Group, LLC, Tower Hill Insurance Managers, LLC, Tower Hill Re Holdings, Inc., Tower Hill Signature Insurance Holdings, Inc. and Tomoka Re Holdings, Inc. (collectively, the "Tower Hill Companies"), which are accounted for under the equity method of accounting. We also have investments in Essent Group Ltd. and Trupanion Inc., which are accounted for at fair value and are included in other investments.

The carrying value of these investments on our consolidated balance sheet, individually or in the aggregate, may differ from the realized value we may ultimately attain, perhaps significantly so. For example, we believe that our investments in the Tower Hill Companies, which are recorded under the equity method of accounting in our consolidated financial statements in accordance with generally accepted accounting principles in the U.S. ("GAAP"), would attract a significantly higher valuation than what is currently recognized in our consolidated financial statements. However, under GAAP, we are prohibited from recording these investments at fair value. In addition, there is no liquid market for these investments.

Other Transactions

Our ventures business unit works on a range of other customized reinsurance and financing transactions. For example, we have participated in and continuously analyze other attractive opportunities in the market for insurance-linked securities and derivatives. We believe our products contain a number of customized features designed to fit the needs of our partners, as well as our risk management objectives.

Additionally, our ventures business unit activities that appear in our consolidated underwriting results, such as DaVinci and certain reinsurance transactions, are included in our Property and Casualty and Specialty segment results as appropriate; the results of our equity method investments, such as Top Layer Re, and other ventures are included in the Other category of our segment results.

NEW BUSINESS

From time to time we consider diversification into new ventures, either through organic growth, the formation of new joint ventures, or the acquisition of, or the investment in, other companies or books of business of other companies. This potential diversification includes opportunities to write targeted, additional classes of risk-exposed business, both directly for our own account and through new joint venture opportunities. We also regularly evaluate potential strategic opportunities we believe might utilize our skills, capabilities, proprietary technology and relationships to support possible expansion into further risk-related coverages, services and products. Generally, we focus on underwriting or trading risks where we believe reasonably sufficient data is available and our analytical abilities provide us with a competitive advantage, in order for us to seek to model estimated probabilities of losses and returns in respect of our then current portfolio of risks.

We regularly review potential strategic transactions that might improve our portfolio of business, enhance or focus our strategies, expand our distribution or capabilities, or provide other benefits. In evaluating potential new ventures or investments, we generally seek an attractive estimated return on equity, the ability to develop or capitalize on a competitive advantage, and opportunities which we believe will not detract from our core operations. We believe that our ability to attract investment and operational opportunities is supported by our strong reputation and financial resources, and by the capabilities and track record of our ventures unit.

COMPETITION

The markets in which we operate are highly competitive, and we believe that competition is, in general, increasing and becoming more robust. Our competitors include independent reinsurance and insurance companies, subsidiaries and/or affiliates of globally recognized insurance companies, reinsurance divisions of certain insurance companies, domestic and international underwriting operations, and a range of entities offering forms of risk transfer protection on a collateralized or other non-traditional basis. As our business evolves and the (re)insurance industry continues to experience consolidation, we expect our competitors to change as well. For example, we may face competition from non-traditional competitors, such as technology or Insurtech companies, among others.

We believe that our principal competitors include other companies active in the market, currently including Aeolus Re Ltd. ("Aeolus"), Allied World Assurance Company, AG, Arch Capital Group Ltd., Argo Group, Aspen Insurance Holdings Limited, AXA XL, Axis Capital Holdings Limited, Chubb Limited, Convex Re Limited, Everest Re Group, Ltd., Fidelis Insurance Holdings Limited ("Fidelis"), Greenlight Reinsurance Ltd. ("Greenlight"), Hamilton Re Ltd. ("Hamilton Re"), James River Insurance Company, Odyssey Re Holdings Corp., PartnerRe Ltd., Sampo International (formerly known as Endurance Specialty Holdings Ltd.), Third Point Reinsurance Ltd. ("Third Point"), Transatlantic Reinsurance Company (a part of Alleghany Corporation), Validus Reinsurance Ltd. (a part of American International Group Inc. ("AIG")) and Watford Re Ltd., as well as a growing number of private, unrated reinsurers offering predominately collateralized reinsurance. We also compete with certain Lloyd's syndicates active in the London market, such as those managed by Beazley PLC, Hiscox Ltd., and Lancashire Holdings, as well as with a number of other industry participants, such as AIG, Berkshire Hathaway Inc., Hannover Rückversicherung AG ("Hannover Re"), Ironshore Inc., Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft in München ("Munich Re") and Swiss Re Ltd.

Hedge funds, pension funds and endowments, investment banks, investment managers (such as Nephila Capital Ltd., a part of Markel Corporation), exchanges and other capital market participants are increasingly active in the reinsurance market and the market for related risk, either through the formation of reinsurance companies (such as Greenlight, Aeolus, Fidelis, Hamilton Re, The D. E. Shaw Group and Third Point) or through the use of other financial products, such as catastrophe bonds, other insurance-linked securities and collateralized reinsurance investment funds. We expect competition from these sources to continue to increase. In addition, we continue to anticipate growth in financial products offered to the insurance market that are intended to compete with traditional reinsurance, such as insurance-linked securities (including catastrophe bonds), unrated privately held reinsurance companies providing collateralized or other non-traditional reinsurance, catastrophe-linked derivative agreements and other financial products.

The tax policies of the countries where our customers operate, as well as government sponsored or backed catastrophe funds, also affect demand for reinsurance, sometimes significantly. Moreover, government-backed entities may represent competition for the coverages we provide directly or for the business of our customers, reducing the potential amount of third-party private protection our clients might need or desire.

UNDERWRITING AND ENTERPRISE RISK MANAGEMENT

Underwriting

Our primary underwriting goal is to construct a portfolio of reinsurance and insurance contracts and other financial risks that maximizes our return on shareholders' equity, subject to prudent risk constraints, and to generate long-term growth in tangible book value per common share plus the change in accumulated dividends. We assess each new (re)insurance contract on the basis of the expected incremental return relative to the incremental contribution to portfolio risk.

We have developed a proprietary, computer-based pricing and exposure management system, REMS©, which has analytic and modeling capabilities that help us to assess the risk and return of each incremental (re)insurance contract in relation to our overall portfolio of (re)insurance contracts. We believe that REMS© is a robust underwriting and risk management system that has been successfully integrated into our business processes and culture. In conjunction with pricing models that we run outside of REMS©, the REMS© framework encompasses and facilitates risk capture, analysis, correlation, portfolio aggregation and capital allocation within a single system for all of our natural and non-natural hazards (re)insurance contracts. We continue to invest in and improve REMS©, incorporating our underwriting and modeling

experience and adding proprietary software and a significant amount of new industry data. We continually strive to improve our analytical techniques for both natural and non-natural hazard models in REMS© and while our experience is most developed for analyzing natural hazard catastrophe risks, we continue to invest in and evolve our capabilities for assessing non-natural hazard catastrophe risks. Over the last ten years, we have continued to develop our casualty and specialty modeling tools and capabilities in line with our business needs. With the acquisitions of Platinum Underwriters Holdings, Ltd. ("Platinum") and TMR, and the expertise and tools added throughout this period, we believe our tools are now state of the art and fully embedded in our underwriting processes.

We generally utilize a multiple model approach when evaluating a proposed transaction, combining both probabilistic and deterministic techniques. We combine the analyses generated by REMS© with other information and other model inputs available to us, including our own knowledge of the client submitting the proposed program, to assess the premium offered against the risk of loss and the cost of utilized capital which the program presents. The underlying risk models integrated into our underwriting and REMS© framework are a combination of internally constructed and commercially available models. We use commercially available natural hazard catastrophe models to assist with validating and stress testing our base model and REMS© results.

Before we bind a (re)insurance risk, exposure data, historical loss information and other risk data is gathered from customers. Using a combination of proprietary software, underwriting experience, actuarial techniques and engineering expertise, the exposure data is reviewed and augmented, as we deem appropriate. We use this data as primary inputs into the REMS© modeling system as a base to create risk distributions to represent the risk being evaluated. We believe that the REMS© modeling system helps us to analyze each policy on a consistent basis, assisting our determination of what we believe to be an appropriate price to charge for each policy based upon the risk to be assumed. In part, through the process described above and the utilization of REMS©, we seek to compare our estimate of the expected returns in respect of a contract with the amount of capital we notionally allocate to the contract based on our estimate of its marginal impact on our portfolio of risks. A key advantage of our REMS© framework is our ability to include additional perils, risks and geographic areas that may not be captured in commercially available natural hazards risk models. For instance, we believe that we are able to incorporate the risk of an increase in the frequency and severity of natural catastrophes due to climate change in our models more comprehensively than commercially available models.

We periodically review the estimates and assumptions that are reflected in REMS© and our other tools, driven either by new hazard science and understanding or by experience of loss events. For example, the movement in cedant loss estimates seen across the market in the months following Hurricane Irma prompted us to perform, in conjunction with several partner companies, a detailed review of the nature of the claims made as a result of that and subsequent events. We have reviewed the prevalence of "assignment of benefits," or "AOB," activity in underlying claims, as well as the impact of loss adjusting expenses and the costs associated with any litigation (often called social inflation), and this process has informed a change in our view of reinsurance risk in certain parts of the state of Florida based on observed behavioral norms. More generally our team of scientists at Weather Predict Consulting Inc. have been tracking the impact of climate change and expanding urban development in both tornado/hail and wildfire risk over the last several years. The recent history of California wildfire events, and particularly the extreme outbreaks during 2017 and 2018, are being used to validate, and where necessary inform, our representation of this risk.

Our underwriters use the combination of our risk assessment and underwriting process, REMS© and other tools in their pricing decisions, which we believe provides them with several competitive advantages. These include the ability to:

- simulate a range of potential outcomes that adequately represents the risk to an individual contract;
- analyze the incremental impact of an individual reinsurance contract on our overall portfolio;
- better assess the underlying exposures associated with assumed retrocessional business;
- price contracts within a short time frame;
- capture various classes of risk, including catastrophe and other insurance risks;

- assess risk across multiple entities (including our various joint ventures) and across different components of our capital structure; and
- provide consistent pricing information.

As part of our risk management process, we also use REMS© to assist us, as a retrocedant, with the purchase of reinsurance coverage for our own account.

Our underwriting and risk management process, in conjunction with REMS©, quantifies and manages our exposure to claims from single events and the exposure to losses from a series of events. As part of our pricing and underwriting process, we also assess a variety of other factors, including:

- the reputation of the proposed cedant and the likelihood of establishing a long-term relationship with the cedant;
- the geographic area in which the cedant does business and its market share;
- historical loss data for the cedant and, where available, for the industry as a whole in the relevant regions and lines of business, in order to compare the cedant's historical catastrophe loss experience to industry averages;
- the cedant's pricing strategies; and
- the perceived financial strength of the cedant and factors such as the cedant's historical record of making premium payments in full and on a timely basis.

In order to estimate the risk profile of each line of non-natural hazard reinsurance (i.e., our casualty and specialty lines of business), we establish probability distributions and assess the correlations with the rest of our portfolio. In lines with catastrophe risk, such as excess workers' compensation and terrorism, we seek to directly leverage our skill in modeling property reinsurance risks, and aim to appropriately estimate and manage the correlations between these casualty and specialty lines and our property reinsurance portfolio. For other classes of business, in which we believe we have little or no natural catastrophe exposure, and therefore less correlation with our property reinsurance coverages, we derive probability distributions from a variety of underlying information sources, including recent historical experience, and the application of judgment as appropriate. The nature of some of these businesses lends itself less to the analysis we use for our property reinsurance coverages, reflecting both the nature of available exposure information, and the impact of human factors such as tort exposure. We produce probability distributions to represent our estimates of the related underlying risks which our products cover, which we believe helps us to make consistent underwriting decisions and to manage our total risk portfolio.

In addition, we also produce, utilize, and report on models which measure our utilization of capital in light of regulatory capital considerations and constraints. Our position in respect of these regulatory capital models is reviewed by our risk management professional staff and periodically reported to and reviewed by senior underwriting personnel and executive management with responsibility for our regulated operating entities.

Enterprise Risk Management

We believe that high-quality and effective Enterprise Risk Management ("ERM") is best achieved when it is a shared cultural value throughout the organization and consider ERM to be a key process which is the responsibility of every individual within the Company. We have developed and utilize tools and processes we believe support a culture of risk management and create a robust framework of ERM within our organization. We believe that our ERM processes and practices help us to identify potential events that may affect us, quantify, evaluate and manage the risks to which we are exposed, and provide reasonable assurance regarding the achievement of our objectives. We believe that effective ERM can provide us with a significant competitive advantage. We also believe that effective ERM assists our efforts to minimize the likelihood of suffering financial outcomes in excess of the ranges which we have estimated in respect of specific investments, underwriting decisions, or other operating or business activities, although we do not believe this risk can be eliminated. We believe that our risk management tools support our strategy of pursuing opportunities and help us to identify opportunities we believe to be the most attractive. In particular, we utilize our risk management tools to support our efforts to monitor our capital and liquidity positions, on a consolidated basis and for each of our major operating subsidiaries, and to allocate an appropriate amount of capital to support the risks we have assumed in the aggregate and for each of our

major operating subsidiaries. We believe that our risk management efforts are essential to our corporate strategy and our goal of achieving long-term growth in tangible book value per share plus the change in accumulated dividends for our shareholders.

Our Board of Directors is responsible for overseeing enterprise-wide risk management and is actively involved in the monitoring of risks that could affect us. The members of the Board have regular, direct access to the senior executives and other officers responsible for identifying and monitoring our risks and coordinating our ERM, including our Group Chief Risk Officer, Chief Financial Officer, and Group General Counsel and Chief Compliance Officer, each of whom reports directly to our Chief Executive Officer, as well as other senior personnel such as our Chief Accounting Officer, Global Corporate Controller and Head of Internal Audit. The Board also receives regular reports from the Controls and Compliance Committee described below.

Our ERM framework operates via a three lines of defense model. The first line of defense consists of individual functions that deliberately assume risks on our behalf and own and manage risk within the Company on a day-to-day and business operational basis. The second line of defense is responsible for risk oversight and also supports the first line to understand and manage risk. A dedicated risk team led by the Group Chief Risk Officer is responsible for this second line and reports to the Board of Director's Investment and Risk Management Committee and the Chief Executive Officer. The third line of defense, our Internal Audit team, reports to the Audit Committee of the Board of Directors and provides independent, objective assurance as to the assessment of the adequacy and effectiveness of our internal control systems and also coordinates risk-based audits and compliance reviews and other specific initiatives to evaluate and address risk within targeted areas of our business.

The principal risk areas that make up our ERM framework are assumed risk (including reserve risk), business environment risk and operational risk:

- *Assumed Risk.* We define assumed risk as activities where we deliberately take risk against our capital base, including underwriting risks and other quantifiable risks such as credit risk and market risk as they relate to investments, ceded reinsurance credit risk and strategic investment risk, each of which can be analyzed in substantial part through quantitative tools and techniques. Of these, we believe underwriting risk to be the most material to us. In order to understand, monitor, quantify and proactively assess underwriting risk, we seek to develop and deploy appropriate tools to estimate the comparable expected returns on potential business opportunities and the impact that such incremental business could have on our overall risk profile. We use the tools and methods described above in "Underwriting" to seek to achieve these objectives. Embedded within our consideration of assumed risk is our management of our aggregate, consolidated risk profile. In part through the utilization of REMS© and our other systems and procedures, we analyze our in-force aggregate assumed risk portfolio on a daily basis. We believe this capability helps us to manage our aggregate exposures and to rigorously analyze and evaluate individual proposed transactions in the context of our in-force portfolio. This aggregation process captures line of business, segment and corporate risk profiles, calculates internal and external capital tests and explicitly models ceded reinsurance. Generally, additional data is added quarterly to our aggregate risk framework to reflect updated or new information or estimates relating to matters such as interest rate risk, credit risk, capital adequacy and liquidity. This information is used in day-to-day decision making for underwriting, investments and operations and is also reviewed quarterly from both a unit level and consolidated financial position perspective. We also regularly assess, monitor and review our regulatory risk capital and related constraints.

Reserve Risk. Reserve risk is a subcomponent of assumed risk. We define reserve risk as the risks related to our reserve for net claims and claim expenses, including the amount, both absolute and relative, of our outstanding reserve for net claims and claim expenses, and the impact of economic, social, legal and regulatory matters. Our reserve for net claims and claim expenses is subject to significant uncertainty and has the potential to develop adversely in future periods. While reserve risk may increase in both absolute terms and relative to its overall consideration in our ERM framework, we employ robust resources, procedures and technology to identify, understand, quantify and manage this risk. Our reserving methodologies and sensitivities for each respective line of business described in "Part II. Item 7. Management's Discussion and Analysis of Financial

Condition and Results of Operations, Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves.”

- *Business Environment Risk.* We define business environment risk as the risk of changes in the business, political or regulatory environment that could negatively impact our short term or long-term financial results or the markets in which we operate. This risk area also typically includes emerging risks. These risks are predominately extrinsic to us and our ability to alter or eliminate these risks is limited, so we focus our efforts on monitoring developments, assessing potential impacts of any changes, and investing in cost effective means to attempt to mitigate the consequences of, and ensure compliance with, any new requirements applicable to us.
- *Operational Risk.* We are subject to a number of additional risks arising out of operational, regulatory, and other matters. We define operational risk to include the risk we fail to create, manage, control or mitigate the people, processes, structures or functions required to execute our strategic and tactical plans and assemble an optimized portfolio of assumed risk, and to adjust to and comply with the evolving requirements of business environment risk applicable to us. In light of the rapid evolution of our markets, business environment, and business initiatives, we seek to continually invest in the tools, processes and procedures we use to mitigate our exposure to operational risk on a cost-effective basis. As with assumed risk and business environment risk, operational risk presents intrinsic uncertainties, and we may fail to appropriately identify or mitigate applicable operational risk.

Controls and Compliance Committee. We believe that a key component of our current operational risk management platform is our Controls and Compliance Committee. The Controls and Compliance Committee is comprised of our Chief Financial Officer, Group General Counsel and Chief Compliance Officer, Chief Accounting Officer, Global Corporate Controller, Group Chief Risk Officer, Head of Internal Audit, staff compliance professionals and representatives from our business units. The purpose of the Controls and Compliance Committee is to establish, assess the effectiveness of, and enforce policies, procedures and practices relating to accounting, financial reporting, internal controls, regulatory, legal, compliance and related matters, and to ensure compliance with applicable laws and regulations, our Code of Ethics and Conduct (the “Code of Ethics”), and other relevant standards. In addition, the Controls and Compliance Committee is charged with reviewing certain transactions that potentially raise complex and/or significant tax, legal, accounting, regulatory, financial reporting, reputational or compliance issues.

In addition, we address other areas of operational risk through our disaster recovery program, human resource practices such as motivating and retaining top talent, our strict tax protocols and our legal and regulatory policies and procedures.

Ongoing Development and Enhancement. We seek to reflect and categorize risks we monitor in part through quantitative risk distributions, even where we believe that such quantitative analysis is not as robust or well developed as our tools and models for measuring and evaluating other risks, such as catastrophe and market risks. We also seek to improve the methods by which we measure risks and believe effective risk management is a continual process that requires ongoing improvement and development. We seek from time to time to identify effective new practices or additional developments both from within our industry and from other sectors. We believe that our ongoing efforts to embed ERM throughout our organization help us produce and maintain a competitive advantage and achieve our corporate goals.

ENVIRONMENTAL AND CLIMATE CHANGE MATTERS

Our principal economic exposures arise from our coverages for natural disasters and catastrophes. We believe, and believe the consensus view of current scientific studies substantiates, that changes in climate conditions, primarily global temperatures and expected sea levels, have increased, and are likely to continue to increase, the severity and frequency of weather related natural disasters and catastrophes relative to the historical experience over the past 100 years. While it is difficult to distinguish between permanent climate change and transient climate variability, an ever expanding body of research suggests that these trends are in fact man-made, and, if correct, we believe that this trend will not revert to the mean but continue to worsen. We believe that this increase in severe weather, coupled with currently projected demographic trends in catastrophe-exposed regions, contributes to factors that will increase the average economic value of expected losses, increase the number of people exposed per year to natural disasters and in general exacerbate disaster risk, including risks to infrastructure, global supply chains and

agricultural production. Accordingly, we expect an increase in both the frequency and magnitude of claims, especially from properties located in coastal areas. The consideration of the impacts of climate change is integral to our ERM process. We have taken measures to mitigate losses related to climate change through our underwriting process and by continuously monitoring and adjusting our risk management models to reflect the higher level of risk that we think will persist.

In addition to the impacts that environmental incidents have on our business, there has been a proliferation of governmental and regulatory scrutiny related to climate change and greenhouse gases, which will also affect our business. For example, many of our regulators are increasingly focused on climate change disclosures.

RATINGS

Financial strength ratings are an important factor in evaluating and establishing the competitive position of reinsurance and insurance companies. We have received high claims-paying and financial strength ratings from A.M. Best Company, Inc. ("A.M. Best"), Standard and Poor's Rating Services ("S&P"), Moody's Investors Service ("Moody's") and Fitch Ratings Ltd. ("Fitch"). These ratings represent independent opinions of an insurer's financial strength, operating performance and ability to meet policyholder obligations, and are not an evaluation directed toward the protection of investors or a recommendation to buy, sell or hold any of our securities. Rating organizations continually review the financial positions of our principal operating subsidiaries and joint ventures and ratings may be revised or revoked by the agencies which issue them.

In addition, S&P and A.M. Best assess companies' ERM practices, which is an opinion on the many critical dimensions of risk that determine overall creditworthiness. RenaissanceRe has been assigned an ERM rating of "Very Strong" from each of these agencies, which is the highest ERM score assigned.

See "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Capital Resources, Ratings" for the ratings of our principal operating subsidiaries and joint ventures by segment, and details of recent ratings actions.

RESERVES FOR CLAIMS AND CLAIM EXPENSES

We believe the most significant accounting judgment made by management is our estimate of claims and claim expense reserves. Claims and claim expense reserves represent estimates, including actuarial and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts we sell. We establish our claims and claim expense reserves by taking claims reported to us by insureds and ceding companies, but which have not yet been paid ("case reserves"), adding estimates for the anticipated cost of claims incurred but not yet reported to us, or incurred but not enough reported to us (collectively referred to as "IBNR") and, if deemed necessary, adding costs for additional case reserves which represent our estimates for claims related to specific contracts which we believe may not be adequately estimated by the client as of that date, or adequately covered in the application of IBNR. Our reserving committee, which includes members of our senior management, reviews, discusses, and assesses the reasonableness and adequacy of the reserving estimates included in our audited financial statements. Because of the nature of the coverages that we provide, the amount and timing of the cash flows associated with our policy liabilities will fluctuate, perhaps significantly, and, therefore, are highly uncertain.

In connection with the closing of the acquisition of TMR on March 22, 2019, we acquired claims and claim expenses reserves of \$2.4 billion.

Our reserving techniques, assumptions and processes differ among our Property and Casualty and Specialty segments. Refer to "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for more information on the risks we insure and reinsure, the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, prior year development of the reserve for claims and claim expenses, analysis of our incurred and paid claims development and claims duration information for each of our Property and Casualty and Specialty segments. In addition, refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Summary of Critical Accounting Estimates, Claims and Claim

Expense Reserves" for more information on our current estimates versus our initial estimates of our claims reserves, and sensitivity analysis for each of our Property and Casualty and Specialty segments.

INVESTMENTS

We structure our investment portfolio to emphasize the preservation of capital and the availability of liquidity to meet our claims obligations and to be well diversified across market sectors. The majority of our investments consists of highly-rated fixed income securities. We also hold a significant amount of short-term investments which have a maturity of one year or less when purchased. In addition, we hold other investments, including private equity investments, catastrophe bonds, senior secured bank loan funds, and hedge funds and certain equity securities, which offer the potential for higher returns but with relatively higher levels of risk. Our investment portfolio takes into account the duration of our liabilities and the level of strategic asset risk we wish to assume over the medium- to long-term. We may from time to time re-evaluate our investment guidelines and explore investment allocations to other asset classes that either increase or decrease our overall asset risk. Our investments are subject to market-wide risks and fluctuations, as well as to risks inherent in particular securities.

In connection with the acquisition of TMR on March 22, 2019, we acquired \$2.3 billion of investments, including \$2.2 billion of fixed maturity investments trading, \$108.6 million of short term investments and \$41.2 million of other investments.

For additional information regarding our investment portfolio, refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Liquidity and Capital Resources, Investments" and "Note 5. Investments" in our "Notes to the Consolidated Financial Statements."

MARKETING

We believe that our modeling and technical expertise, the risk management products we provide to our customers, and our reputation for paying claims promptly has enabled us to become a provider of first choice in many lines of business to our customers worldwide. We market our products primarily through reinsurance brokers and we focus our marketing efforts on targeted brokers and partners. We believe that our existing portfolio of business is a valuable asset and, therefore, we attempt to continually strengthen relationships with our existing brokers and customers. We believe that by maintaining close relationships with brokers, we are able to obtain access to a broad range of potential reinsureds. We target prospects that are capable of supplying detailed and accurate underwriting data and that potentially add further diversification to our book of business.

We believe that primary insurers' and brokers' willingness to use a particular reinsurer is based not just on pricing, but also on the financial security of the reinsurer, its claim paying ability ratings and demonstrated willingness to promptly pay valid claims, the quality of a reinsurer's service, the reinsurer's willingness and ability to design customized programs, its long-term stability and its commitment to provide stable reinsurance capacity across market cycles. We believe we have established a reputation with our brokers and customers for prompt response on underwriting submissions, for fast payments on valid claims and for providing creative solutions to our customers' needs.

Our portfolio of business continues to be characterized by relatively large transactions with ceding companies with whom we do business, although no current relationship exceeds 10% of our gross premiums written. Accordingly, our gross premiums written are subject to significant fluctuations depending on our success in maintaining or expanding our relationships with these customers. We believe that our willingness and ability to design customized programs and to provide bespoke risk management products has helped us to develop long-term relationships with brokers and customers.

Our brokers assess client needs and also perform data collection, contract preparation and other administrative tasks, enabling us to market our products cost effectively. In recent years, our distribution has become increasingly reliant on a small and relatively decreasing number of broker relationships reflecting consolidation in the broker sector. We expect this concentration to continue and perhaps increase. In 2019, three brokerage firms accounted for 79.6% of our gross premiums written.

The following table shows the percentage of our Property and Casualty and Specialty segments' gross premiums written generated through subsidiaries and affiliates of our largest brokers:

<u>Year ended December 31, 2019</u>	<u>Property</u>	<u>Casualty and Specialty</u>	<u>Total</u>
AON	47.5%	35.8%	41.7%
Marsh	31.7%	22.3%	27.1%
Willis Towers Watson	7.3%	14.3%	10.8%
Total of largest brokers	86.5%	72.4%	79.6%
All others	13.5%	27.6%	20.4%
Total	100.0%	100.0%	100.0%

EMPLOYEES

At February 3, 2020, we employed 566 people worldwide (February 4, 2019 - 411, February 2, 2018 - 384). While our overall headcount has increased as a result of the acquisition of TMR, some of this increase is related to transitional employees.

None of our employees are subject to collective bargaining agreements and we are not aware of any current efforts to implement such agreements at any of our subsidiaries.

INFORMATION TECHNOLOGY

Our business and support functions utilize information systems that provide critical services to both our employees and our customers. We have an integrated team of professionals who manage and support our communication platforms, transaction-management systems, and analytics and reporting capabilities, including the development of proprietary solutions like REMS®. We use off-site, secure data centers in North America and Europe for most of our core applications, but our use of cloud-based services is increasing as the security and reliability of these services improves.

Information security and privacy are important concerns, with an escalating cyber-threat environment and evolving regulatory requirements driving continued investment in this area. Our information security program is designed to meet or exceed industry best practices. We are subject to a number of cybersecurity and data privacy laws and regulations, such as the New York State Department of Financial Services (the "NYDFS") 23 NYCRR 500 Cybersecurity Requirements for Financial Services Companies, and the EU General Data Protection Regulation. New York's cybersecurity regulation requires regulated entities, including Renaissance Reinsurance U.S., a New York licensed insurer, and RenaissanceRe Europe, US Branch (as defined below), to establish and maintain a cybersecurity program designed to protect each of their information technology systems as well as their customers' data. Our program is designed to comply with all applicable cybersecurity regulatory requirements and we continue to evaluate and assess our compliance in the changing regulatory environment.

We have in place, and seek to continuously improve, a comprehensive system of security controls, managed by a dedicated staff. Periodically, we engage the services of reputable third parties to perform security penetration testing, and update our security controls based on any findings. In addition, we are subject to independent assessment and review by regulators. We also provide regular security risk education awareness and training sessions for all staff. Despite these efforts, computer viruses, hackers, employee misuse or misconduct, and other internal or external hazards could expose our data systems to security breaches, cyber-attacks or other disruptions.

We have implemented disaster recovery and business continuity plans for our operations, which are regularly tested with respect to our business-critical infrastructure and systems. We employ data backup procedures that seek to ensure that our key business systems and data are regularly backed up, and can be restored promptly if, and as, needed. In addition, we generally store backup information at off-site locations, in order to seek to minimize our risk of loss of key data in the event of a disaster. Our recovery plans involve arrangements with our off-site, secure data centers. We believe we will be able to access our systems from these facilities and remotely in the event that our primary systems are unavailable due to various scenarios, such as natural disasters.

REGULATION

The business of insurance and reinsurance is regulated in most countries and all states in the U.S., although the degree and type of regulation varies significantly from one jurisdiction to another. Currently, we operate primarily in Bermuda, Switzerland, the U.S. and the U.K. We also have operations in Singapore, Ireland and Australia. Although principally regulated by the regulatory authorities of their respective jurisdictions, our operating subsidiaries may also be subject to regulation in the jurisdictions of their ceding companies. In addition, expansion into additional insurance markets could expose us or our subsidiaries to increasing regulatory oversight. For example, following completion of the acquisition of TMR, we became subject to increased regulation in various jurisdictions, such as Australia, the U.K., Switzerland and the U.S., including the insurance holding company laws of New York, the domestic state of RenaissanceRe Europe AG, US Branch (formerly Tokio Millennium Re AG (U.S. Branch)) ("RenaissanceRe Europe, US Branch"). However, we intend to continue to conduct our operations so as to minimize the likelihood that Renaissance Reinsurance, DaVinci, Top Layer Re, RenaissanceRe Europe, RenaissanceRe Specialty U.S., Upsilon RFO, or any of our other Bermudian subsidiaries will become subject to direct U.S. regulation.

Bermuda Regulation

All Bermuda companies must comply with the provisions of the Companies Act 1981. In addition, the Insurance Act 1978 and related regulations (collectively, the "Insurance Act"), regulate the business of our Bermuda insurance, reinsurance and management company subsidiaries.

As a holding company, RenaissanceRe is not currently subject to the Insurance Act. However, the Insurance Act regulates the insurance and reinsurance business of our Bermuda-licensed operating insurance companies. RenaissanceRe's Bermuda-licensed operating insurance subsidiaries and joint ventures include Renaissance Reinsurance and DaVinci, which are registered as Class 4 general business insurers, RenaissanceRe Specialty U.S., Vermeer and RenaissanceRe Europe AG, Bermuda Branch ("RenaissanceRe Europe, Bermuda Branch"), which are registered as Class 3B general business insurers, and Top Layer Re, which is registered as a Class 3A general business insurer under the Insurance Act. RenaissanceRe also has operating subsidiaries registered as SPIs under the Insurance Act, including Upsilon RFO. RUM and RenaissanceRe Underwriting Management Ltd. are each registered as insurance managers under the Insurance Act.

The Insurance Act imposes solvency and liquidity standards as well as auditing and reporting requirements and confers on the Bermuda Monetary Authority (the "BMA") powers to supervise, investigate and intervene in the affairs of insurance companies.

Since 2016, Bermuda's regulatory regime under the BMA has been recognized by the European Parliament as achieving Solvency II equivalence for its commercial (re)insurers, retroactive to January 1, 2016.

General Purpose Financial Statements. All Class 3A, Class 3B and Class 4 insurers must prepare annual financial statements in respect of their insurance business in accordance with GAAP, International Financial Reporting Standards ("IFRS") or other acceptable accounting standards, which are published on the BMA website. Accordingly, audited annual financial statements prepared in accordance with GAAP for each of Renaissance Reinsurance, RenaissanceRe Specialty U.S., DaVinci, Vermeer and RenaissanceRe Europe, Bermuda Branch must be filed with the BMA prior to April 30 of each year, if applicable, and are available free of charge on the BMA's website.

Statutory Financial Statements. Each Class 3A, Class 3B and Class 4 general business insurer is required to submit annual statutory financial statements as part of its annual statutory financial return no later than four months after the insurer's financial year end (unless specifically extended). The GAAP or IFRS financial statements are the basis on which statutory financial statements are prepared, subject to the application of certain prudential filters as outlined in the Insurance Accounts Rules 2016. The statutory financial statements contain statements both on a consolidated and unconsolidated basis. The unconsolidated information forms the basis for assessing the insurer's liquidity position, minimum solvency margin and class of registration.

Capital and Solvency Return. Class 3A, 3B and 4 insurers are also required to file, on an annual basis, a capital and solvency return in respect of their general business, which includes, among other items, a statutory economic balance sheet ("EBS"), a schedule of governance and risk management, a catastrophe risk return, a schedule of loss triangles or reconciliation of net loss reserves, a schedule of eligible capital and the Enhanced Capital Requirement ("ECR") as calculated by the Bermuda Solvency and Capital Requirement ("BSCR") model (or an approved internal model). The BSCR is a mathematical model designed to give the BMA robust methods for determining an insurer's capital adequacy. Underlying the BSCR is the belief that all insurers should operate on an ongoing basis with a view to maintaining their capital at a prudent level in excess of the minimum solvency margin otherwise prescribed under the Insurance Act. The consolidated information within the statutory financial statements form the starting basis for the preparation of the EBS. The EBS is, in turn, used as the basis to calculate the insurer's ECR for the relevant year. The 2019 BSCR for DaVinci, Renaissance Reinsurance and RenaissanceRe Specialty U.S. must be filed with the BMA before April 30, 2020; at this time, we believe each company will exceed the minimum amount required to be maintained under Bermuda law. For the year ended December 31, 2018, RenaissanceRe Europe, Bermuda Branch was granted exemptions and modifications to the requirements to file an annual statutory financial return, maintain minimum levels of statutory capital and surplus and file a capital and solvency return, and it has applied for exemptions for the year ended December 31, 2019.

Financial Condition Report. Class 3A, 3B and 4 insurers and insurance groups are required to prepare and publish a financial condition report ("FCR"), which provides, among other things, details of measures governing the business operations, corporate governance framework and solvency and financial performance of the insurer/insurance group. We received approval from the BMA to file a consolidated group FCR, inclusive of our Bermuda-domiciled insurance subsidiaries and Top Layer Re. Our most recent FCR was filed with the BMA in advance of the June 30, 2019 deadline, and is available on our website.

Minimum Solvency Margin. A general business insurer's statutory assets must exceed its statutory liabilities by an amount, equal to or greater than the prescribed minimum solvency margin ("Minimum Solvency Margin"), which varies with the category of its registration. The Minimum Solvency Margin that must be maintained by a Class 4 insurer is the greater of (i) \$100.0 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 the ECR, which is established by reference to the BSCR model. The Minimum Solvency Margin for a Class 3A or Class 3B insurer is the greater of (i) \$1.0 million, (ii) 20% of the first \$6.0 million of net premiums written; if in excess of \$6.0 million, the figure is \$1.2 million plus 15% of net premiums written in excess of \$6.0 million, (iii) 15% of net aggregate loss and loss expense provisions and other insurance reserves, or (iv) 25% of the insurer's ECR for the relevant year.

Enhanced Capital Requirement. Each Class 3A, Class 3B and Class 4 insurer is required to maintain its available statutory economic capital and surplus at a level at least equal to its ECR which is established by reference to either the BSCR or an approved internal capital model. In either case, the ECR shall at all times equal or exceed the respective Class 3A, Class 3B and Class 4 insurer's Minimum Solvency Margin and may be adjusted in circumstances where the BMA concludes that the insurer's risk profile deviates significantly from the assumptions underlying its ECR or the insurer's assessment of its risk management policies and practices used to calculate the ECR applicable to it. While not specifically referred to in the Insurance Act, the BMA has also established a target capital level ("TCL") for each Class 3A, Class 3B and Class 4 insurer equal to 120% of the respective ECR. While a Class 3A, Class 3B and Class 4 insurer is not currently required to maintain its statutory economic 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 BMA regulatory oversight.

Minimum Liquidity Ratio. An insurer engaged in general business is required to maintain the value of its relevant assets at not less than 75% of the amount of its relevant liabilities ("Minimum Liquidity Ratio").

Eligible Capital. To enable the BMA to better assess the quality of an insurer's capital resources, Class 3A, Class 3B and Class 4 insurers must maintain available capital in accordance with a "three tiered capital system." All capital instruments are classified as either basic or ancillary capital, which in turn are classified into one of three tiers (Tier 1, Tier 2 and Tier 3) based on their "loss absorbency" characteristics (the "Tiered Capital Requirements"). Eligibility limits are then applied to each tier in determining the amounts eligible to cover regulatory capital requirement levels. The highest capital is classified as Tier 1 capital and lesser

quality capital is classified as either Tier 2 capital or Tier 3 capital. Under this regime, not more than certain specified percentages of Tier 1, Tier 2 and Tier 3 capital may be used to satisfy the Class 3A, 3B and 4 insurers' Minimum Solvency Margin, ECR requirements and TCL.

Restrictions on Dividends, Distributions and Reductions of Capital. Class 3A, Class 3B and Class 4 insurers are prohibited from declaring or paying any dividends if in breach of the required Minimum Solvency Margin or Minimum Liquidity Ratio (the "Relevant Margins") or if the declaration or payment of such dividend would cause the insurer to fail to meet the Relevant Margins. Further, Class 3A, 3B and Class 4 insurers are prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year's statutory balance sheet) unless it files (at least seven days before payment of such dividends) with the BMA an affidavit stating that it will continue to meet its Relevant Margins. Class 3A, Class 3B and Class 4 insurers must obtain the BMA's prior approval for a reduction by 15% or more of the total statutory capital as set forth in its previous year's financial statements. These restrictions on declaring or paying dividends and distributions under the Insurance Act are in addition to the solvency requirements under the Companies Act 1981 which apply to all Bermuda companies.

Fit and Proper Controllers. The BMA maintains supervision over the controllers (as defined herein) of all Bermuda registered insurers. For so long as shares of RenaissanceRe are listed on the New York Stock Exchange ("NYSE") or another recognized stock exchange, the Insurance Act requires that the BMA be notified in writing within 45 days of any person becoming, or ceasing to be, a controller. A controller includes the managing director or chief executive of the registered insurer or its parent company; a 10%, 20%, 33% or 50% shareholder controller; and any person in accordance with whose directions or instructions the directors of the registered insurer or of its parent company are accustomed to act. In addition, all Bermuda insurers are also required to give the BMA written notice of the fact that a person has become, or ceased to be, a controller or officer of the registered insurer within 45 days of becoming aware of such fact. An officer in relation to a registered insurer includes a director, secretary, chief executive or senior executive by whatever name called.

Material Change. All registered insurers are required to give the BMA 30 days' notice of their intention to effect a material change within the meaning of the Insurance Act, and shall not take any steps to give effect to a material change unless, before the end of notice period unless they have been notified by the BMA in writing that it has no objection to such change or the period has lapsed without the BMA issuing a notice of objection.

Insurance Code of Conduct. All Bermuda insurers are required to comply with the BMA's Insurance Code of Conduct, which establishes duties, requirements and standards to be complied with to ensure each insurer implements sound corporate governance, risk management and internal controls. Failure to comply with these requirements will be a factor taken into account by the BMA in determining whether an insurer is conducting its business in a sound and prudent manner under the Insurance Act and in calculating the operational risk charge applicable in accordance with the insurer's BSCR model (or an approved internal model).

Special Purpose Insurer Reporting Requirements. Unlike other (re)insurers, SPIs are fully funded to meet their (re)insurance obligations; therefore the application and supervision processes are streamlined to facilitate the transparent structure. Further, the BMA has the discretion to modify such insurer's accounting requirements under the Insurance Act. Like other (re)insurers, the principal representative of an SPI has a duty to inform the BMA in relation to solvency matters, where applicable. SPIs are required to file electronic annual statutory or modified financial returns which map GAAP financial statements to electronic statutory forms and provide information around ownership structure, assessment of risks, analyses of premium and details of segregated cells.

Insurance Manager Reporting Requirements. The BMA's Insurance Manager Code of Conduct requires insurance managers to file an Insurance Manager's Return, which requires, among other things, details around directors and officers of the insurance manager, the services provided by the entity, and details of the insurers managed by the insurance manager.

Group Supervision. Pursuant to the Insurance Act, the BMA acts as the group supervisor of the RenaissanceRe group of companies (the "RenaissanceRe Group") and it has designated Renaissance Reinsurance to be the "designated insurer" in respect of the RenaissanceRe Group. The designated insurer is required to ensure that the RenaissanceRe Group complies with the provisions of the Insurance Act

pertaining to groups and all related group solvency and group supervision rules (together, the "Group Rules"). Under the Group Rules, the RenaissanceRe Group is required to annually prepare and submit to the BMA group GAAP financial statements, group statutory financial statements, a group capital and solvency return (including an EBS) and an FCR. An insurance group must ensure that the value of the insurance group's assets exceeds the amount of the insurance group's liabilities by the aggregate of: (i) the individual Minimum Solvency Margin of each qualifying member of the group controlled by the parent company; and (ii) the parent company's percentage shareholding in the member multiplied by the member's Minimum Solvency Margin, where the parent company exercises significant influence over a member of the group but does not control the member (the "Group Minimum Solvency Margin"). A member is a qualified member of the insurance group if it is subject to solvency requirements in the jurisdiction in which it is registered. Every insurance group is also required to submit an annual group actuarial opinion when filing its group capital and solvency return. The group is required to appoint an individual approved by the BMA to be the group actuary. The group actuary must provide an opinion on the RenaissanceRe Group's technical provisions as recorded in the RenaissanceRe Group statutory EBS. Insurance groups are required to maintain available statutory economic capital and surplus to an amount that is equal to or exceeds the value of its group ECR, which is calculated at the end of its relevant year by reference to the BSCR model of the group (the "Group BSCR") (or an approved internal capital model) provided that the group ECR shall at all times be an amount equal to or exceeding the Group Minimum Solvency Margin. The BMA expects insurance groups to operate at or above a group TCL, which exceeds the group ECR. The TCL for insurance groups is set at 120% of its group ECR. In addition, under the Tiered Capital Requirements described above, not more than certain specified percentages of Tier 1, Tier 2 and Tier 3 capital may be used by an insurance group to satisfy the Group Minimum Solvency Margin and group ECR requirements. We are currently completing our 2019 Group BSCR, which must be filed with the BMA on or before May 31, 2020, and at this time, we believe we will exceed the target level of required economic statutory capital. Our 2018 Group BSCR exceeded the target level of required statutory capital. Further, our Board of Directors has established solvency self assessment procedures for the RenaissanceRe Group that factor in all foreseeable material risks; Renaissance Reinsurance must ensure that the RenaissanceRe Group's assets exceed the amount of the RenaissanceRe Group's liabilities by the aggregate minimum margin of solvency of each qualifying member; and our Board of Directors has established and implements corporate governance policies and procedures designed to ensure they support the overall organizational strategy of the RenaissanceRe Group. In addition, the RenaissanceRe Group is required to prepare and submit to the BMA a quarterly financial return comprising unaudited consolidated group financial statements, a schedule of intra-group transactions and a schedule of risk concentrations.

The BMA has certain powers of investigation and intervention relating to insurers and their holding companies, subsidiaries and other affiliates, which it may exercise in the interest of such insurer's policyholders or if there is any risk of insolvency or of a breach of the Insurance Act or the insurer's license conditions. The BMA may cancel an insurer's registration on certain grounds specified in the Insurance Act.

Under the provisions of the Insurance Act, the BMA may, from time to time, conduct "on site" visits at the offices of insurers it regulates. Over the past several years, the BMA has conducted "on site" reviews in respect of our Bermuda-domiciled operating insurers.

Economic Substance Act. In December 2018, the Economic Substance Act 2018, as amended (the "ESA") came into effect in Bermuda. Under the provisions of the ESA, every Bermuda registered entity engaged in a "relevant activity" must satisfy economic substance requirements by maintaining a substantial economic presence in Bermuda. Under the ESA, insurance or holding entity activities (both as defined in the ESA and Economic Substance Regulations 2018, as amended) are relevant activities. Pursuant to the ESA, certain of our entities registered in Bermuda, are required to demonstrate compliance with economic substance requirements by filing an annual economic substance declaration with the Registrar of Companies in Bermuda. Any entity that must satisfy economic substance requirements but fails to do so could face automatic disclosure to competent authorities in the EU of the information filed by the entity with the Registrar of Companies in connection with the economic substance requirements and may also face financial penalties, restriction or regulation of its business activities and/or may be struck off as a registered entity in Bermuda.

Income Taxes. Currently, neither we nor our shareholders are required to pay Bermuda income or profits tax, withholding tax, capital gains tax, capital transfer tax, estate duty or inheritance tax in respect of our shares. We have obtained an assurance from the Minister of Finance of Bermuda under the Exempted

Undertakings Tax Protection Act 1966 that, if Bermuda enacts legislation imposing any tax on profits, income, capital asset, gain or appreciation or any tax in the nature of estate duty or inheritance tax, such tax shall not be applicable to us, our operations or our shares, debentures or other obligations until March 31, 2035, except insofar as such tax applies to persons ordinarily resident in Bermuda or is payable by us in respect of real property owned or leased by us in Bermuda.

Policyholder Priority. As of January 1, 2019, the Insurance Amendment (No. 2) Act 2018 amended the Insurance Act to provide for the prior payment of policyholders' liabilities ahead of general unsecured creditors in the event of the liquidation or winding up of an insurer. The amendments provide, among other things, that, subject to the prior payment of preferential debts under the Employment Act 2000 and the Companies Act 1981, the insurance debts of an insurer must be paid in priority to all other unsecured debts of the insurer.

Investment Fund Regulation. Medici, Upsilon Fund and RenaissanceRe Upsilon Co-Invest Fund Ltd. are all registered or regulated by the BMA pursuant to the Bermuda Investment Funds Act 2006, as amended most recently by the Bermuda Investment Funds Amendment Act 2019 (the "IFA").

The purpose of the IFA is to set standards and criteria applicable to the establishment and operation of investment funds as defined in section 2 of the IFA in Bermuda, with a view to protecting the interests of investors. Under the Bermuda Monetary Authority Act 1969, the BMA is responsible for supervising, regulating and inspecting any financial institution which operates in Bermuda, including investment funds. The BMA has general powers to supervise, investigate and intervene in the affairs of investment funds registered with it under the IFA and requires each fund registered under the IFA to certify on an annual basis that the fund has complied with the IFA.

The BMA has also issued Investment Fund Offering Document Rules and Investment Fund Rules, both effective January 1, 2020, which provide that an offering document for every registered or authorized fund be submitted to the BMA for approval and set forth certain minimum content requirements for offering documents. The Investment Fund Rules set forth obligations of funds with respect to service providers, depositary functions, safekeeping obligations, valuations, and reporting to investors and the public, among other requirements.

U.S. Regulation

Admitted Company Regulation. Renaissance Reinsurance U.S. is a Maryland-domiciled insurer licensed in 26 states and the District of Columbia and qualified or certified as a reinsurer in an additional 24 states. As a U.S. licensed and authorized insurer, Renaissance Reinsurance U.S. is subject to considerable regulation and supervision by state insurance regulators. The extent of regulation varies but generally has its source in statutes that delegate regulatory, supervisory and administrative authority to a department of insurance in each state. Among other things, state insurance departments regulate insurer solvency, authorized investments, loss and loss adjustment expense and unearned premium reserves, and deposits of securities for the benefit of policyholders. State insurance departments also conduct periodic examinations of the affairs of authorized insurance companies and require the filing of annual and other reports relating to the financial condition of companies and other matters. The Maryland Insurance Administration, as Renaissance Reinsurance U.S.'s domestic regulator, is the primary financial regulator of Renaissance Reinsurance U.S.

Holding Company Regulation. We are subject to the insurance holding company laws of Maryland, the domestic state of Renaissance Reinsurance U.S. These laws generally require Renaissance Reinsurance U.S. to file certain reports concerning its capital structure, ownership, financial condition and general business operations with the Maryland Insurance Administration. Generally, all affiliate transactions involving Renaissance Reinsurance U.S. must be fair and, if material or of specified types, require prior notice and approval or non-disapproval by the Maryland Insurance Administration. Further, Maryland law places limitations on the amounts of dividends or distributions payable by Renaissance Reinsurance U.S. Payment of ordinary dividends by Renaissance Reinsurance U.S. requires notice to the Maryland Insurance Administration. Declaration of an extraordinary dividend, which must be paid out of earned surplus, generally requires thirty days' prior notice to and approval or non-disapproval of the Maryland Insurance Administration. An extraordinary dividend includes any dividend whose fair market value together with that of other dividends or distributions made within the preceding twelve months exceeds the lesser of (1) ten percent of the insurer's surplus as regards policyholders as of December 31 of the preceding year or (2) the

insurer's net investment income, excluding realized capital gains (as determined under statutory accounting principles), for the twelve month period ending December 31 of the preceding year and pro rata distributions of any class of the insurer's own securities, plus any amounts of net investment income (subject to the foregoing exclusions), in the three calendar years prior to the preceding year which have not been distributed.

Maryland law also requires any person seeking to acquire control of a Maryland-domestic insurer or of an entity that directly or indirectly controls a Maryland-domestic insurer, including its holding company, to file a statement with the Maryland Insurance Administration at least 60 days before the proposed acquisition of control. The transaction seeking to acquire control cannot be made unless, within 60 days after the statement is filed with the Maryland Insurance Administration, or within any extension of that period, the Maryland Insurance Administration approves, or does not disapprove, the transaction. Any purchaser of 10% or more of the outstanding voting securities of an insurance company, its holding company or any other entity directly or indirectly controlling the insurance company is presumed to have acquired control, unless the presumption is rebutted. Therefore, any investor who intends to acquire 10% or more of RenaissanceRe's outstanding voting securities may need to comply with these laws and would be required to file statements and reports with the Maryland Insurance Administration before such acquisition.

Maryland has adopted enterprise risk management and reporting obligations applicable to insurance holding company systems that are meant to protect the licensed companies from enterprise risk. These obligations include requiring an annual enterprise risk report by the ultimate controlling person identifying the material risks within the insurance holding company system that could pose enterprise risk to the U.S. licensed companies.

Effective for 2018, Maryland adopted the Risk Management and Own Risk Solvency Assessment Act (the "RMORSA Act") based on the National Association of Insurance Commissioners (the "NAIC") Own Risk Solvency Assessment Model Act. The RMORSA Act requires Renaissance Reinsurance U.S. to: (i) maintain a risk management framework for identifying, assessing, monitoring, managing, and reporting its material and relevant risks; (ii) complete an Own Risk Solvency Assessment ("ORSA") at least once each year and at any time there is a significant change to the risk profile of Renaissance Reinsurance U.S. or its holding company system; and (iii) submit an ORSA summary report to the Maryland Insurance Administration at least once each year. The obligation to maintain a risk management framework may be satisfied if the RenaissanceRe group maintains a risk management framework that applies to the operations of Renaissance Reinsurance U.S. and the ORSA obligation may be satisfied if the RenaissanceRe group completes an ORSA in accordance with the requirements of the RMORSA Act. At December 31, 2019, we believe that Renaissance Reinsurance U.S. exceeded the minimum required statutory capital and surplus.

Dividends and Distributions. Renaissance Reinsurance U.S. is subject to certain restrictions on its ability to pay dividends pursuant to Maryland law, including making appropriate filings with and obtaining certain approvals from its regulator. RenaissanceRe Europe, US Branch does not pay ordinary dividends and would need approval from the NYDFS for any return of capital to RenaissanceRe Europe.

Regulation of RenaissanceRe Europe, US Branch. RenaissanceRe Europe, US Branch is a United States branch of RenaissanceRe Europe whose port of entry is New York. RenaissanceRe Europe, US Branch is licensed in two states, New York and Kansas, and it is an accredited reinsurer in 48 states, and the District of Columbia. The NYDFS is RenaissanceRe Europe, US Branch's domestic insurance regulator in the U.S. As a New York regulated insurer, RenaissanceRe Europe, US Branch is subject to New York's holding company laws as well as laws pertaining to solvency, authorized investments, deposits of securities for the benefit of policyholders and cybersecurity. The NYDFS may conduct periodic examinations of RenaissanceRe Europe, US Branch's affairs and it requires the filing of annual and other reports relating to RenaissanceRe Europe, US Branch's financial condition. RenaissanceRe Europe, US Branch is required to file financial statements prepared in accordance with statutory accounting practices prescribed or permitted by the U.S. insurance regulators. RenaissanceRe Europe, US Branch's minimum required statutory capital and surplus is based on the greater of the risk-based capital ("RBC") level that would trigger regulatory action or minimum requirements per state insurance regulation. At December 31, 2019, we believe that RenaissanceRe Europe, US Branch exceeded the minimum required statutory capital and surplus.

Run-off of RenaissanceRe Europe, US Branch. In and subsequent to August 2019, we made certain filings with the New York and Maryland state insurance regulators in contemplation of a run-off of RenaissanceRe Europe, US Branch. Following receipt of applicable regulatory approvals, the U.S. casualty portfolio was

transferred to Renaissance Reinsurance U.S. through a loss portfolio transfer retrocession agreement effective as of October 1, 2019, while the remaining property and specialty business portfolio of RenaissanceRe Europe, US Branch will be run-off until all liabilities are extinguished through novation, commutation or expiration, subject to applicable ceding company consent. We expect that the run-off of RenaissanceRe Europe, US Branch will not be complete for several years.

Reinsurance Regulation. The insurance laws of each U.S. state regulate the sale of reinsurance to licensed ceding insurers by non-admitted alien reinsurers acting from locations outside the state. With some exceptions, the sale of insurance within a jurisdiction where the insurer is not admitted to do business is prohibited. Our Bermuda-domiciled insurance operations and joint ventures (principally Renaissance Reinsurance, DaVinci, Top Layer Re, RenaissanceRe Specialty U.S., Upsilon RFO and Vermeer) are all admitted to transact insurance business in Bermuda and do not maintain an office or solicit, advertise, settle claims or conduct other insurance activities in any other jurisdiction where the conduct of such activities would require that any company be so admitted.

RenaissanceRe Underwriting Managers U.S. LLC is licensed by the Connecticut Department of Insurance as a reinsurance intermediary broker and is required to maintain its reinsurance intermediary broker license in force in order to conduct its reinsurance operations in Connecticut.

Although reinsurance contract terms and rates are generally not subject to regulation by state insurance authorities, a primary U.S. insurer ordinarily will enter into a reinsurance agreement only if it can obtain credit on its statutory financial statements for the reinsurance ceded. State insurance regulators permit U.S. ceding insurers to take credit for reinsurance ceded to non-admitted, non-U.S. (alien) reinsurers if the reinsurance contract contains certain minimum provisions and if the reinsurance obligations of the non-U.S. reinsurer are appropriately collateralized. Qualifying collateral may be established by an alien reinsurer exclusively for a single U.S. ceding company. Alternatively, an alien reinsurer that is accredited by a state may establish a multi-beneficiary trust with qualifying assets equal to its reinsurance obligations to all U.S. ceding insurers, plus a trustee surplus amount. Renaissance Reinsurance and DaVinci are each an accredited reinsurer and have established multi-beneficiary trusts with a qualifying financial institution in New York for the benefit of their U.S. cedants.

States generally require non-admitted alien reinsurers to provide collateral equal to one hundred percent of their reinsurance obligations to U.S. ceding insurers in order for the U.S. ceding insurers to obtain full credit for reinsurance. However, most states have adopted credit for reinsurance laws and regulations based on NAIC model law and regulation amendments that permit U.S. ceding insurers to take full credit for reinsurance when a “certified” reinsurer posts reduced collateral amounts. U.S. states are required to adopt the NAIC model law and regulation amendments permitting reduced collateral for certified reinsurers as an NAIC accreditation requirement. Under these credit for reinsurance laws and regulations, qualifying alien reinsurers may reduce their collateral for future reinsurance agreements based on a secure rating assigned by the U.S. insurance regulator. The secure rating is assigned by the state upon an assessment of the reinsurer’s financial condition, financial strength ratings and other factors. In addition, the alien reinsurer must be domiciled in a jurisdiction that is “qualified” under state law. The NAIC granted conditional qualified jurisdiction status to Bermuda effective January 1, 2014, and in December 2019, the NAIC voted to re-qualify Bermuda as a qualified jurisdiction. On December 11, 2019, Bermuda was awarded reciprocal jurisdiction status by the NAIC, which took effect on January 1, 2020. Once each state has enacted legislation and produced regulations to effect the reciprocal jurisdiction status, Bermuda’s (re)insurers will be eligible (on a state by state basis) for zero collateral relief, thereby operating under equal conditions to its counterparts from the EU. Each of Renaissance Reinsurance, DaVinci and RenaissanceRe Europe has been approved as a “certified reinsurer” eligible for collateral reduction in various states. As noted below, EU-domiciled reinsurers will be subject to the provisions of the US-EU Covered Agreement (defined below) that require states to remove reinsurance collateral requirements for qualifying EU reinsurers as of the US-EU Covered Agreement’s implementation date.

NAIC Ratios. The NAIC has established 13 financial ratios to assist state insurance departments in their oversight of the financial condition of licensed property and casualty insurance companies operating in their respective states. The NAIC’s Insurance Regulatory Information System (“IRIS”) calculates these ratios based on information submitted by insurers on an annual basis and shares the information with the applicable state insurance departments. Each ratio has an established “usual range” of results and assists state insurance departments in executing their statutory mandate to oversee the financial condition of

insurance companies. A ratio result falling outside the usual range of IRIS ratios is not considered a failing result; rather unusual values are viewed as part of the regulatory early monitoring system. Furthermore, in some years, it may not be unusual for financially sound companies to have several ratios with results outside the usual ranges. An insurance company may fall outside of the usual range for one or more ratios because of specific transactions that are themselves immaterial.

Federal Oversight and Other Government Intervention. Government intervention in the insurance and reinsurance markets in the U.S. continues to evolve. Although U.S. state regulation is currently the primary form of regulation of insurance and reinsurance, Congress has considered proposals in several areas that may impact the industry, including the creation of an optional federal charter and repeal of the insurance company antitrust exemption from the McCarran Ferguson Act. We are unable to predict what other proposals will be made or adopted or the effect, if any, that such proposals would have on our operations and financial condition.

The Dodd-Frank Act established federal measures that impact the U.S. insurance business and preempt certain state insurance laws. For example, the Dodd-Frank Act created the Financial Stability Oversight Council (the "FSOC"), which is authorized to designate a non-bank financial company as "systemically significant" (each a "non-bank SIFI") if its material financial distress could threaten the financial stability of the U.S. As of December 31, 2019, there were no non-bank SIFIs designated by the FSOC. In March 2019, in response to U.S. Department of the Treasury (the "U.S. Treasury") recommendations, the FSOC issued for public comment proposed guidance related to a revised process for designating non-bank SIFIs, which substantially changes the FSOC's existing procedures by emphasizing an activities-based approach, and moving away from the existing entities-based approach. The FSOC's adoption of this revised approach to identifying systemic risk or a determination that we or our counterparties are systemically significant could affect our insurance and reinsurance operations.

The Dodd-Frank Act also created the Federal Insurance Office ("FIO"). The FIO does not have general supervisory or regulatory authority over the business of insurance, but it has preemption authority over state insurance laws that conflict with certain international agreements. The FIO is also authorized to monitor the U.S. insurance industry and identify potential regulatory gaps that could contribute to systemic risk and may recommend to the FSOC the designation of systemically important insurers. In addition, the FIO represents the U.S. at the International Association of Insurance Supervisors.

The Dodd-Frank Act authorizes the U.S. Treasury and the Office of the U.S. Trade Representative to enter into international agreements of mutual recognition regarding the prudential regulation of insurance or reinsurance ("covered agreements"). The U.S. and EU entered into a bilateral agreement regarding the prudential regulation of insurance and reinsurance (the "US-EU Covered Agreement") in 2017. Each party has been working to complete its internal requirements and procedures (such as amending or promulgating appropriate statutes and regulations) in order to satisfy the US-EU Covered Agreement's substantive and timing requirements. For instance, in June 2019, the NAIC adopted revisions to the Amended Credit for Reinsurance Model Act and Model Regulation (the "2019 Credit for Reinsurance Amendment").

The US-EU Covered Agreement addresses three areas of prudential insurance and reinsurance supervision: reinsurance, group supervision and the exchange of information between the U.S. and EU. Under the US-EU Covered Agreement, reinsurance collateral requirements will no longer apply to qualifying EU reinsurers that sell reinsurance to the U.S. market, and U.S. reinsurers operating in the EU market will no longer be subject to "local presence" requirements. The US-EU Covered Agreement also establishes group supervision practices that apply only to U.S. and EU insurance groups operating in both territories. For instance, the US-EU Covered Agreement provides that U.S. insurance groups with operations in the EU will be supervised at the worldwide level only by U.S. insurance regulators, and precludes EU insurance supervisors from exercising solvency and capital requirements over the worldwide operations of U.S. insurers.

The US-EU Covered Agreement may preempt an inconsistent state law that treats a qualified non-U.S. reinsurer more favorably than a U.S. insurer licensed in that state. The FIO is required under the US-EU Covered Agreement to commence this preemption analysis in April 2021 and to complete this analysis in September 2022. This effectively means that each U.S. state will need to enact the 2019 Credit for Reinsurance Amendments by September 2022, or face possible federal preemption of those provisions in its credit for reinsurance laws that are inconsistent with the US-EU Covered Agreement.

See “Part I, Item 1A. Risk Factors” and “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Current Outlook, Legislative and Regulatory Update” for further information regarding recent legislative and regulatory proposals and the potential effects on our business and results of operations.

U.K. Regulation

Lloyd’s Regulation

General. The operations of RenaissanceRe Syndicate Management Ltd. (“RSML”) are subject to oversight by Lloyd’s, substantially effected through the Lloyd’s Franchise Board. In November 2019, Lloyd’s announced plans to merge the Lloyd’s Franchise Board into the Lloyd’s Council. With effect from June 1, 2020, the enlarged Lloyd’s Council will oversee the Lloyd’s Market. RSML’s business plan for Syndicate 1458, including maximum underwriting capacity, requires annual approval by Lloyd’s. Lloyd’s may require changes to any business plan presented to it or additional capital to be provided to support the underwriting plan. Lloyd’s also imposes various charges and assessments on its members. We have deposited certain assets with Lloyd’s to support RenaissanceRe Corporate Capital (UK) Limited’s (“RenaissanceRe CCL”) underwriting business at Lloyd’s. Dividends from a Lloyd’s managing agent and a Lloyd’s corporate member can be declared and paid provided the relevant company has sufficient profits available for distribution.

By entering into a membership agreement with Lloyd’s, RenaissanceRe CCL has undertaken to comply with all Lloyd’s bye-laws and regulations as well as the provisions of the Lloyd’s Acts and the Financial Services and Markets Act 2000, as amended by the Financial Services Act 2012 (the “FSMA”).

Capital Requirements. The underwriting capacity of a member of Lloyd’s must be supported by providing a deposit (referred to as “Funds at Lloyd’s” or “FAL”) in the form of cash, securities or letters of credit in an amount determined under the capital adequacy regime of the U.K.’s Prudential Regulation Authority (the “PRA”). The amount of such deposit is calculated for each member through the completion of an annual capital adequacy exercise. Under these requirements, Lloyd’s must demonstrate that each member has sufficient assets to meet its underwriting liabilities plus a required solvency margin. The amount of FAL for Syndicate 1458 is determined by Lloyd’s and is based on Syndicate 1458’s solvency and capital requirement as calculated through its internal model. In addition, if the FAL are not sufficient to cover all losses, the Lloyd’s Central Fund provides an additional level of security for policyholders.

Restrictions. A Reinsurance to Close (“RITC”) generally is put in place after the third year of operations of a syndicate year of account. On successful conclusion of a RITC, any profit from the syndicate’s operations for that year of account can be remitted by the managing agent to the syndicate’s members. If the syndicate’s managing agency concludes that an appropriate RITC cannot be determined or negotiated on commercially acceptable terms in respect of a particular underwriting year, it must determine that the underwriting year remain open and be placed into run-off. During this period, there cannot be a release of the Funds at Lloyd’s of a member of that syndicate without the consent of Lloyd’s.

The financial security of the Lloyd’s market as a whole is regularly assessed by three independent rating agencies (A.M. Best, S&P and Fitch). Syndicates at Lloyd’s take their financial security rating from the rating of the Lloyd’s Market. A satisfactory credit rating issued by an accredited rating agency is necessary for Lloyd’s syndicates to be able to trade in certain classes of business at current levels. RSML and RenaissanceRe CCL would be adversely affected if Lloyd’s current ratings were downgraded.

Intervention Powers. The Lloyd’s Council has wide discretionary powers to regulate members’ underwriting at Lloyd’s. It may, for instance, withdraw a member’s permission to underwrite business or to underwrite a particular class of business. The Lloyd’s Council may change the basis on which syndicate expenses are allocated or vary the Funds at Lloyd’s requirements or the investment criteria applicable to the provision of Funds at Lloyd’s. Exercising any of these powers might affect the return on the corporate member’s participation in a given underwriting year. If a member of Lloyd’s is unable to pay its debts to policyholders, the member may obtain financial assistance from the Lloyd’s Central Fund, which in many respects acts as an equivalent to a state guaranty fund in the U.S. If Lloyd’s determines that the Central Fund needs to be increased, it has the power to assess premium levies on current Lloyd’s members. The Lloyd’s Council has discretion to call or assess up to 3% of a member’s underwriting capacity in any one year as a Central Fund contribution.

PRA and FCA Regulation

The PRA currently has ultimate responsibility for the prudential supervision of financial services in the U.K. The Financial Conduct Authority (the "FCA") has responsibility for market conduct regulation. As such, the PRA and the FCA regulate all financial services firms in the U.K. including the Lloyd's market, RSML, RenaissanceRe UK and RenaissanceRe Europe AG, UK Branch ("RenaissanceRe Europe, UK Branch"). Both the PRA and FCA have substantial powers of intervention in relation to regulated firms.

Solvency II

The European Parliament adopted Solvency II in April 2009 and it came into effect on January 1, 2016. Solvency II represents a risk-based approach to insurance regulation and capital adequacy. Its principal goals are to improve the correlation between capital and risk, effect group supervision of insurance and reinsurance affiliates, implement a uniform capital adequacy structure for (re)insurers across the EU Member States, establish consistent corporate governance standards for insurance and reinsurance companies, and establish transparency through standard reporting of insurance operations. Under Solvency II, an insurer's or reinsurer's capital adequacy in relation to various insurance and business risks may be measured with an internal model developed by the insurer or reinsurer and approved for use by the Member State's regulator or pursuant to a standard formula developed by the European Commission.

Under Solvency II, the PRA granted approval to Lloyd's internal model application in December 2015. Each year the PRA requires Lloyd's to satisfy an annual solvency test which measures whether Lloyd's has sufficient assets in the aggregate to meet all outstanding liabilities of its members, both current and run-off. If Lloyd's fails this test, the PRA may require the entire Lloyd's market to cease underwriting or individual Lloyd's members may be required to cease or reduce their underwriting.

Lloyd's as a whole is authorized by the PRA and regulated by both the FCA and the PRA. Lloyd's is required to implement certain rules prescribed by the PRA and by the FCA; such rules are to be implemented by Lloyd's pursuant to its powers under the Lloyd's Act 1982 relating to the operation of the Lloyd's market. Lloyd's prescribes, in respect of its managing agents and corporate members, certain minimum standards relating to their management and control, solvency and various other requirements. If it appears to either the PRA or the FCA that either Lloyd's is not fulfilling its delegated regulatory responsibilities or that managing agents are not complying with the applicable regulatory rules and guidance, the PRA or the FCA may intervene at their discretion.

RenaissanceRe UK is authorized by the PRA, and is regulated by both the PRA and FCA. RenaissanceRe UK is subject to the Solvency II regime and applied for and was granted waivers of certain reporting requirements for the year ended December 31, 2019. As of December 31, 2019 it met its minimum capital and surplus requirements. Under Solvency II, RenaissanceRe UK is required annually to prepare a Solvency and Financial Condition Report ("SFCR"). RenaissanceRe UK's latest SFCR is available on our website.

RenaissanceRe Europe, UK Branch is authorized and regulated in the U.K. by the PRA and by the FCA. RenaissanceRe Europe, UK Branch is also subject to the Solvency II regime, but is not required to hold capital at the branch level. In light of this and related matters, the PRA granted various modifications and waivers to RenaissanceRe Europe, UK Branch from the Solvency II reporting requirements.

Change of Control

The PRA and the FCA currently regulate the acquisition of control of insurers, reinsurers and Lloyd's managing agents which are authorized under the FSMA. Any company or individual that, together with its or his associates, directly or indirectly acquires 10% or more of the shares in such an entity or its parent company, or is entitled to exercise or control the exercise of 10% or more of the voting power in such entity or its parent company, would be considered to have acquired control for the purposes of the relevant legislation, as would a person who had significant influence over the management of such entity or its parent company by virtue of their shareholding or voting power in either. A purchaser of 10% or more of RenaissanceRe's common shares or voting power would therefore be considered to have acquired control of RSML or RenaissanceRe UK. Under the FSMA, any person or entity proposing to acquire control over an insurer, reinsurer or Lloyd's managing agent must give prior notification to the PRA and the FCA of their or the entity's intention to do so. The PRA and FCA would then have 60 working days to consider the application to acquire control. Failure to make the relevant prior application could result in action being

taken against RSML or RenaissanceRe UK by the PRA or the FCA or both of them. Lloyd's approval is also required before any person can acquire control (using the same definition as for the PRA and FCA) of a Lloyd's managing agent or Lloyd's corporate member.

Other Applicable Laws

Lloyd's worldwide insurance and reinsurance business is subject to various regulations, laws, treaties and other applicable policies of the EU, as well as of each nation, state and locality in which it operates. Material changes in governmental requirements and laws could have an adverse effect on Lloyd's and market participants, including RSML and RenaissanceRe CCL.

Switzerland Regulation

Swiss Group Affiliate Companies and Reinsurance Branches. RenaissanceRe Europe, a company limited by shares with its registered seat in Zurich, Switzerland, is a reinsurance company licensed in class C1 and supervised by the Swiss Financial Market Supervisory Authority FINMA ("FINMA"). As such, RenaissanceRe Europe must comply with Swiss insurance supervisory law (as applicable to reinsurers), including in particular the Insurance Supervisory Act ("ISA"), Insurance Supervisory Ordinance, FINMA ordinances and FINMA circulars. RenaissanceRe Europe's accounts are prepared in accordance with the Swiss Code of Obligations, the Insurance Supervision Act and the Insurance Supervision Ordinance.

Further, the group affiliates Renaissance Reinsurance and DaVinci each have a branch office registered with the commercial register of the Canton of Zurich, Switzerland; however, as these are reinsurance-only branch offices of a foreign reinsurer, they are not currently subject to the license and supervision requirements of FINMA.

The group affiliate RenaissanceRe Services of Switzerland AG, a company limited by shares with registered seat in Zurich, Switzerland, is a service company. Until December 31, 2019, it held a license granted by FINMA for the distribution of insurance-linked securities. This license type ceased to exist on January 1, 2020 as a result of the Swiss Federal Act on Financial Institutions, which amended certain provisions of the Swiss collective investment schemes legislation. Thus, as of that date, RenaissanceRe Services of Switzerland AG has ceased to hold any FINMA license. However, RenaissanceRe Services of Switzerland AG will register the relevant client advisors in a new, to be established, public registry, which will enable it to continue its insurance-linked security distribution activities.

Adequacy of Financial Resources. The minimum capital requirement for a Swiss reinsurance company under the ISA for reinsurance license class C1 is CHF 10 million.

Being a Swiss domiciled reinsurance company, RenaissanceRe Europe must further maintain adequate solvency and provide for sufficient free and unencumbered capital in relation to its entire activities in accordance with the Swiss Solvency Test (the "SST"). The SST adopts a risk-based and total balance sheet approach whereby reinsurance companies are required to provide a market-consistent assessment of the value of their assets and liabilities. The solvency requirement is met if the available risk-bearing capital exceeds the required target capital. It is then assessed whether the identified available capital can meet the SST requirements and is sufficient to cover the company's obligations in less favorable scenarios. The European Commission recognized the SST as being of an equivalent standard to European law with an effective date of January 1, 2016.

In addition, RenaissanceRe Europe must establish sufficient technical reserves (*versicherungstechnische Rückstellungen*) for its entire business activities. RenaissanceRe Europe also has to maintain an organizational fund to cover the costs of establishing and developing the business, and for an extraordinary business expansion. The organizational fund usually amounts to up to 50% of the minimum capital (as discussed above) at the start of business operations and subsequently should typically settle at an amount equivalent to around 20% of the minimum capital. The exact minimum amount is determined by FINMA in each individual case.

Reporting and Disclosure Requirements. RenaissanceRe Europe has to submit an annual report (consisting of the annual financial statements and management report) and an annual supervisory report to FINMA by the end of June of the following year. In the course of the supervisory reporting to FINMA, RenaissanceRe Europe has to annually disclose its financial condition report containing quantitative and qualitative information, in particular relating to business activities, business results, risk management, the risk profile

and valuation principles and methods applied to provisions, capital management and solvency by the end of April of the following year.

Moreover, under the ISA, a reinsurance undertaking must be organized in a way that it can, in particular, identify, limit and monitor all material risks. In this context, RenaissanceRe Europe must conduct a forward-looking self-assessment of their risk situation and capital requirements at least once a year, and a report on the ORSA must be submitted to FINMA no later than the end of January of the following year.

Further, a reinsurance undertaking must maintain and file with FINMA a regulatory business plan, including details on its organization, financials, qualified participants, management, oversight and control persons, responsible actuary, among other items. Any changes to the business plan must either be approved by FINMA prior to the implementation or be notified to FINMA, depending on the type of change.

Dividends and Distributions. RenaissanceRe Europe may only distribute dividends out of its retained earnings or distributable reserves based on the audited annual accounts of the company. Any distribution of dividends remains subject to the approval of FINMA (as a change of the regulatory business plan) if they have a bearing on the solvency of the reinsurer and/or the interests of the insured. The solvency and capital requirements must still be met following any distribution. At December 31, 2019, we believe RenaissanceRe Europe exceeded the minimum solvency and capital requirements required to be maintained under Swiss law. RenaissanceRe Europe was required to prepare a FCR for the year ended December 31, 2018, which is available on our website.

Singapore Regulation

Branches of Renaissance Reinsurance and DaVinci based in the Republic of Singapore (the “Singapore Branches”) have each received a license to carry on insurance business as a general reinsurer. The activities of the Singapore Branches are primarily regulated by the Monetary Authority of Singapore pursuant to Singapore’s Insurance Act. Additionally, the Singapore Branches are each regulated by the Accounting and Corporate Regulatory Authority (the “ACRA”) as a foreign company pursuant to Singapore’s Companies Act. Prior to the establishment of the Singapore Branches, Renaissance Reinsurance had maintained a representative office in Singapore commencing April 2012. We do not currently consider the activities and regulatory requirements of the Singapore Branches to be material to us.

Renaissance Services of Asia Pte. Ltd., our Singapore-based service company, was established as a private company limited by shares in Singapore on March 15, 2012 and is registered with ACRA and subject to Singapore’s Companies Act.

Ireland Regulation

Renaissance Reinsurance of Europe, incorporated under the laws of Ireland, provides coverage to insurers and reinsurers, primarily in Europe. Business is written both in Dublin and through a branch office in the U.K.

Renaissance Reinsurance of Europe and its U.K. branch are regulated and supervised by the Central Bank of Ireland and are subject to the requirements of Solvency II. Renaissance Reinsurance of Europe is registered with the Companies Registration Office in Ireland and is subject to the Companies Act 2014. The Central Bank of Ireland adopts a risk-based framework to the supervision of regulated firms. Firms are rated according to the impact their failure would have on financial systems, the Irish economy and on the citizens of Ireland. Renaissance Reinsurance of Europe is currently considered by the Central Bank of Ireland to be a ‘low impact’ firm. We do not currently consider the regulatory requirements of Renaissance Reinsurance of Europe and its U.K. branch to be material to us.

Renaissance Services of Europe Ltd., our Dublin-based Irish service company, was established as a private company limited by shares in Ireland and is registered with the Companies Registration Office and subject to the Companies Act 2014.

Australia Regulation

RenaissanceRe Europe AG, Australia Branch (“RenaissanceRe Europe, Australia Branch”), based in Sydney, Australia, has received a license to carry on insurance business. RenaissanceRe Europe, Australia Branch provides coverage to insurers and reinsurers from Australia and New Zealand. The activities of

RenaissanceRe Europe, Australia Branch are primarily regulated by the Australian Prudential Regulation Authority (“APRA”). RenaissanceRe Europe, Australia Branch is classified as a Category C insurer (a foreign insurer operating as a foreign branch in Australia) pursuant to the Insurance Act 1973. Additionally, RenaissanceRe Europe, Australia Branch is also regulated by the Australian Securities and Investments Commission as a foreign company pursuant to the Corporations Act 2001. We do not currently consider the activities and regulatory requirements of RenaissanceRe Europe, Australia Branch be material to us.

RenaissanceRe Europe, Australia Branch's regulatory reporting is prepared in accordance with the Australian Accounting Standards and APRA Prudential Standards. APRA Prudential Standards require the maintenance of net assets in Australia in excess of a calculated Prescribed Capital Amount (“PCA”). At December 31, 2019, we believe that the net assets of RenaissanceRe Europe, Australia Branch that are located in Australia exceeded the PCA that we estimated under the APRA Prudential Standards.

GLOSSARY OF SELECTED INSURANCE AND REINSURANCE TERMS

Accident year	Year of occurrence of a loss. Claim payments and reserves for claims and claim expenses are allocated to the year in which the loss occurred for losses occurring contracts and in the year the loss was reported for claims made contracts.
Acquisition expenses	The aggregate expenses incurred by a company for acquiring new business, including commissions, underwriting expenses, premium taxes and administrative expenses.
Additional case reserves	Additional case reserves represent management's estimate of reserves for claims and claim expenses that are allocated to specific contracts, less paid and reported losses by the client.
Attachment point	The dollar amount of loss (per occurrence or in the aggregate, as the case may be) above which excess of loss reinsurance becomes operative.
Bordereaux	A report providing premium or loss data with respect to identified specific risks. This report is periodically furnished to a reinsurer by the ceding insurers or reinsurers.
Bound	A (re)insurance contract is considered bound, and the (re)insurer responsible for the risks of the contract, when both parties agree to the terms and conditions set forth in the contract.
Broker	An intermediary who negotiates contracts of insurance or reinsurance, receiving a commission for placement and other services rendered, between (1) a policy holder and a primary insurer, on behalf of the insured party, (2) a primary insurer and reinsurer, on behalf of the primary insurer, or (3) a reinsurer and a retrocessionaire, on behalf of the reinsurer.
Capacity	The percentage of surplus, or the dollar amount of exposure, that an insurer or reinsurer is willing or able to place at risk. Capacity may apply to a single risk, a program, a line of business or an entire book of business. Capacity may be constrained by legal restrictions, corporate restrictions or indirect restrictions.
Case reserves	Loss reserves, established with respect to specific, individual reported claims.
Casualty insurance or reinsurance	Insurance or reinsurance that is primarily concerned with the losses caused by injuries to third persons and their property (in other words, persons other than the policyholder) and the legal liability imposed on the insured resulting therefrom. Also referred to as liability insurance.

Catastrophe	A severe loss, typically involving multiple claimants. Common perils include earthquakes, hurricanes, hailstorms, severe winter weather, floods, fires, tornadoes, typhoons, explosions and other natural or man-made disasters. Catastrophe losses may also arise from acts of war, acts of terrorism and political instability.
Catastrophe excess of loss reinsurance	A form of excess of loss reinsurance that, subject to a specified limit, indemnifies the ceding company for the amount of loss in excess of a specified retention with respect to an accumulation of losses resulting from a "catastrophe."
Catastrophe-linked securities; cat-linked securities	Cat-linked securities are generally privately placed fixed income securities where all or a portion of the repayment of the principal is linked to catastrophic events. This includes securities where the repayment is linked to the occurrence and/or size of, for example, one or more hurricanes or earthquakes, or insured industry losses associated with these catastrophic events.
Cede; cedant; ceding company	When a party reinsures its liability with another, it "cedes" business and is referred to as the "cedant" or "ceding company."
Claim	Request by an insured or reinsured for indemnification by an insurance company or a reinsurance company for losses incurred from an insured peril or event.
Claims made contracts	Contracts that cover claims for losses occurring during a specified period that are reported during the term of the contract.
Claims and claim expense ratio, net	The ratio of net claims and claim expenses to net premiums earned determined in accordance with either statutory accounting principles or GAAP.
Claim reserves	Liabilities established by insurers and reinsurers to reflect the estimated costs of claim payments and the related expenses that the insurer or reinsurer will ultimately be required to pay in respect of insurance or reinsurance policies it has issued. Claims reserves consist of case reserves, established with respect to individual reported claims, additional case reserves and "IBNR" reserves. For reinsurers, loss expense reserves are generally not significant because substantially all of the loss expenses associated with particular claims are incurred by the primary insurer and reported to reinsurers as losses.
Combined ratio	The combined ratio is the sum of the net claims and claim expense ratio and the underwriting expense ratio. A combined ratio below 100% generally indicates profitable underwriting prior to the consideration of investment income. A combined ratio over 100% generally indicates unprofitable underwriting prior to the consideration of investment income.
Delegated authority	A contractual arrangement between an insurer or reinsurer and an agent whereby the agent is authorized to bind insurance or reinsurance on behalf of the insurer or reinsurer. The authority is normally limited to a particular class or classes of business and a particular territory. The exercise of the authority to bind insurance or reinsurance is normally subject to underwriting guidelines and other restrictions such as maximum premium income. Under the delegated authority, the agent is responsible for issuing policy documentation, the collection of premium and may also be responsible for the settlement of claims.

Excess of loss reinsurance or insurance	Reinsurance or insurance that indemnifies the reinsured or insured against all or a specified portion of losses on underlying insurance policies in excess of a specified amount, which is called a "level" or "retention." Also known as non-proportional reinsurance. Excess of loss reinsurance is written in layers. A reinsurer or group of reinsurers accepts a layer of coverage up to a specified amount. The total coverage purchased by the cedant is referred to as a "program" and will typically be placed with predetermined reinsurers in pre-negotiated layers. Any liability exceeding the outer limit of the program reverts to the ceding company, which also bears the credit risk of a reinsurer's insolvency.
Exclusions	Those risks, perils, or classes of insurance with respect to which the reinsurer will not pay loss or provide reinsurance, notwithstanding the other terms and conditions of reinsurance.
Frequency	The number of claims occurring during a given coverage period.
Funds at Lloyd's	Funds of an approved form that are lodged and held in trust at Lloyd's as security for a member's underwriting activities. They comprise the members' deposit, personal reserve fund and special reserve fund and may be drawn down in the event that the member's syndicate level premium trust funds are insufficient to cover its liabilities. The amount of the deposit is related to the member's premium income limit and also the nature of the underwriting account.
Generally Accepted Accounting Principles in the United States ("GAAP")	Accounting principles as set forth in the statements of the Financial Accounting Standards Board ("FASB") and related guidance, which are applicable in the circumstances as of the date in question.
Gross premiums written	Total premiums for insurance written and assumed reinsurance during a given period.
Incurred but not reported ("IBNR")	Reserves for estimated losses that have been incurred by insureds and reinsureds but not yet reported to the insurer or reinsurer, including unknown future developments on losses that are known to the insurer or reinsurer.
Insurance-linked securities	Financial instruments whose values are driven by (re)insurance loss events. Our investments in insurance-linked securities are generally linked to property losses due to natural catastrophes.
International Financial Reporting Standards ("IFRS")	Accounting principles, standards and interpretations as set forth in opinions of the International Accounting Standards Board which are applicable in the circumstances as of the date in question.
Layer	The interval between the retention or attachment point and the maximum limit of indemnity for which a reinsurer is responsible.
Line	The amount of excess of loss reinsurance protection provided to an insurer or another reinsurer, often referred to as limit.
Line of business	The general classification of insurance written by insurers and reinsurers, e.g., fire, allied lines, homeowners and surety, among others.
Lloyd's	Depending on the context, this term may refer to (a) the society of individual and corporate underwriting members that insure and reinsure risks as members of one or more syndicates (i.e., Lloyd's is not an insurance company); (b) the underwriting room in the Lloyd's building in which managing agents underwrite insurance and reinsurance on behalf of their syndicate members (in this sense Lloyd's should be understood as a market place); or (c) the Corporation of Lloyd's which regulates and provides support services to the Lloyd's market.

Loss; losses	An occurrence that is the basis for submission and/or payment of a claim. Whether losses are covered, limited or excluded from coverage is dependent on the terms of the policy.
Loss reserve	For an individual loss, an estimate of the amount the insurer expects to pay for the reported claim. For total losses, estimates of expected payments for reported and unreported claims. These may include amounts for claims expenses.
Managing agent	An underwriting agent which has permission from Lloyd's to manage a syndicate and carry on underwriting and other functions for a member.
Net claims and claim expenses	The expenses of settling claims, net of recoveries, including legal and other fees and the portion of general expenses allocated to claim settlement costs (also known as claim adjustment expenses or loss adjustment expenses) plus losses incurred with respect to net claims.
Net claims and claim expense ratio	Net claims and claim expenses incurred expressed as a percentage of net earned premiums.
Net premiums earned	The portion of net premiums written during or prior to a given period that was actually recognized as income during such period.
Net premiums written	Gross premiums written for a given period less premiums ceded to reinsurers and retrocessionaires during such period.
Perils	This term refers to the causes of possible loss in the property field, such as fire, windstorm, collision, hail, etc. In the casualty field, the term "hazard" is more frequently used.
Profit commission	A provision found in some reinsurance agreements that provides for profit sharing. Parties agree to a formula for calculating profit, an allowance for the reinsurer's expenses, and the cedant's share of such profit after expenses.
Property insurance or reinsurance	Insurance or reinsurance that provides coverage to a person with an insurable interest in tangible property for that person's property loss, damage or loss of use.
Property per risk	Reinsurance on a treaty basis of individual property risks insured by a ceding company.
Proportional reinsurance	A generic term describing all forms of reinsurance in which the reinsurer shares a proportional part of the original premiums and losses of the reinsured. (Also known as pro rata reinsurance, quota share reinsurance or participating reinsurance.) In proportional reinsurance, the reinsurer generally pays the ceding company a ceding commission. The ceding commission generally is based on the ceding company's cost of acquiring the business being reinsured (including commissions, premium taxes, assessments and miscellaneous administrative expense) and also may include a profit factor. See also "Quota Share Reinsurance."
Quota share reinsurance	A form of proportional reinsurance in which the reinsurer assumes an agreed percentage of each insurance policy being reinsured and shares all premiums and losses accordingly with the reinsured. See also "Proportional Reinsurance."
Reinstatement premium	The premium charged for the restoration of the reinsurance limit of a catastrophe contract to its full amount after payment by the reinsurer of losses as a result of an occurrence.

Reinsurance	An arrangement in which an insurance company, the reinsurer, agrees to indemnify another insurance or reinsurance company, the ceding company, against all or a portion of the insurance or reinsurance risks underwritten by the ceding company under one or more policies. Reinsurance can provide a ceding company with several benefits, including a reduction in net liability on insurances and catastrophe protection from large or multiple losses. Reinsurance also provides a ceding company with additional underwriting capacity by permitting it to accept larger risks and write more business than would be possible without an equivalent increase in capital and surplus, and facilitates the maintenance of acceptable financial ratios by the ceding company. Reinsurance does not legally discharge the primary insurer from its liability with respect to its obligations to the insured.
Reinsurance to Close	Also referred to as a RITC, it is a contract to transfer the responsibility for discharging all the liabilities that attach to one year of account of a syndicate into a later year of account of the same or different syndicate in return for a premium.
Retention	The amount or portion of risk that an insurer retains for its own account. Losses in excess of the retention level are paid by the reinsurer. In proportional treaties, the retention may be a percentage of the original policy's limit. In excess of loss business, the retention is a dollar amount of loss, a loss ratio or a percentage.
Retrocedant	A reinsurer who cedes all or a portion of its assumed insurance to another reinsurer.
Retrocessional reinsurance; Retrocessionaire	A transaction whereby a reinsurer cedes to another reinsurer, the retrocessionaire, all or part of the reinsurance that the first reinsurer has assumed. Retrocessional reinsurance does not legally discharge the ceding reinsurer from its liability with respect to its obligations to the reinsured. Reinsurance companies cede risks to retrocessionaires for reasons similar to those that cause primary insurers to purchase reinsurance: to reduce net liability on insurances, to protect against catastrophic losses, to stabilize financial ratios and to obtain additional underwriting capacity.
Risks	A term used to denote the physical units of property at risk or the object of insurance protection that are not perils or hazards. Also defined as chance of loss or uncertainty of loss.
Solvency II	A set of regulatory requirements that codify and harmonize the EU insurance and reinsurance regulation. Among other things, these requirements impact the amount of capital that EU insurance and reinsurance companies are required to hold. Solvency II came into effect on January 1, 2016.
Specialty lines	Lines of insurance and reinsurance that provide coverage for risks that are often unusual or difficult to place and do not fit the underwriting criteria of standard commercial products carriers.
Statutory accounting principles	Recording transactions and preparing financial statements in accordance with the rules and procedures prescribed or permitted by Bermuda, U.S. state insurance regulatory authorities including the NAIC and/or in accordance with Lloyd's specific principles, all of which generally reflect a liquidating, rather than going concern, concept of accounting.
Stop loss	A form of reinsurance under which the reinsurer pays some or all of a cedant's aggregate retained losses in excess of a predetermined dollar amount or in excess of a percentage of premium.

Submission	An unprocessed application for (i) insurance coverage forwarded to a primary insurer by a prospective policyholder or by a broker on behalf of such prospective policyholder, (ii) reinsurance coverage forwarded to a reinsurer by a prospective ceding insurer or by a broker or intermediary on behalf of such prospective ceding insurer or (iii) retrocessional coverage forwarded to a retrocessionaire by a prospective ceding reinsurer or by a broker or intermediary on behalf of such prospective ceding reinsurer.
Surplus lines insurance	Any type of coverage that cannot be placed with an insurer admitted to do business in a certain jurisdiction. Risks placed in excess and surplus lines markets are often substandard in respect to adverse loss experience, unusual, or unable to be placed in conventional markets due to a shortage of capacity.
Syndicate	A member or group of members underwriting (re)insurance business at Lloyd's through the agency of a managing agent or substitute agent to which a syndicate number is assigned.
Treaty	A reinsurance agreement covering a book or class of business that is automatically accepted on a bulk basis by a reinsurer. A treaty contains common contract terms along with a specific risk definition, data on limit and retention, and provisions for premium and duration.
Underwriting	The insurer's or reinsurer's process of reviewing applications submitted for insurance coverage, deciding whether to accept all or part of the coverage requested and determining the applicable premiums.
Underwriting capacity	The maximum amount that an insurance company can underwrite. The limit is generally determined by a company's retained earnings and investment capital. Reinsurance serves to increase a company's underwriting capacity by reducing its exposure from particular risks.
Underwriting expense ratio	The ratio of the sum of the acquisition expenses and operational expenses to net premiums earned.
Underwriting expenses	The aggregate of policy acquisition costs, including commissions, and the portion of administrative, general and other expenses attributable to underwriting operations.
Unearned premium	The portion of premiums written representing the unexpired portions of the policies or contracts that the insurer or reinsurer has on its books as of a certain date.

AVAILABLE INFORMATION

We maintain a website at www.renre.com. The information on our website is not incorporated by reference in this Form 10-K. We make available, free of charge through our website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the U.S. Securities and Exchange Commission (the "SEC"). We also make available, free of charge from our website, our Audit Committee Charter, Compensation and Corporate Governance Committee Charter, Corporate Governance Guidelines, and Code of Ethics. Such information is also available in print for any shareholder who sends a request to RenaissanceRe Holdings Ltd., Attn: Office of the Corporate Secretary, P.O. Box HM 2527, Hamilton, HMGX, Bermuda. The SEC maintains an internet site that contains reports, proxy and information statements, and other information regarding issuers, including the Company, that file electronically with the SEC. The address of the SEC's website is www.sec.gov.

ITEM 1A. RISK FACTORS

Factors that could cause our actual results to differ materially from those in the forward-looking statements contained in this Form 10-K and other documents we file with the SEC include the following:

Risks Related to Our Company

Our exposure to catastrophic events and premium volatility could cause our financial results to vary significantly from one period to the next and could adversely impact our financial results.

We have a large overall exposure to natural and man-made disasters, such as earthquakes, hurricanes, tsunamis, winter storms, freezes, floods, fires, tornadoes, hailstorms, drought, cyber-risks and acts of terrorism. As a result, our operating results have historically been, and we expect will continue to be, significantly affected by low frequency and high severity loss events.

Claims from catastrophic events could cause substantial volatility in our quarterly and annual financial results and could materially adversely affect our financial condition, results of operations and cash flows. We believe that certain factors, including increases in the value and geographic concentration of insured property, particularly along coastal regions, the increasing risks associated with extreme weather events as a result of changes in climate conditions, and the effects of inflation, may continue to increase the number and severity of claims from catastrophic events in the future. Accordingly, unanticipated events could result in net negative impacts. Historically, a relatively large percentage of our coverage exposures have been concentrated in the U.S. southeast, but due to the expected increase in severe weather events, there is the potential for significant exposures in other geographic areas in the future.

Risks of volatility in our financial results are also exacerbated by the fact that the premiums in both our Property and Casualty and Specialty segments are prone to significant volatility due to factors including the timing of contract inception and our differentiated strategy and capability, which position us to pursue bespoke or large solutions for clients, which may be non-recurring.

Our claims and claim expense reserves are subject to inherent uncertainties.

Our claims and claim expense reserves reflect our estimates, using actuarial and statistical projections at a given point in time, of our expectations of the ultimate settlement and administration costs of claims incurred.

We use actuarial and computer models (See “Part I, Item 1. Business, Underwriting and Enterprise Risk Management.”), historical reinsurance and insurance industry loss statistics, and management’s experience and judgment to assist in the establishment of appropriate claims and claim expense reserves. 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.

Due to the many assumptions and estimates involved in establishing reserves and the inherent uncertainty of modeling techniques, the reserving process is inherently uncertain. It is expected that some of our assumptions or estimates will prove to be inaccurate, and that our actual net claims and claim expenses paid and reported will differ, perhaps materially, from the reserve estimates reflected in our financial statements. For example, our significant gross and net reserves associated with the large catastrophe events in the past several years remain subject to significant uncertainty. As these and other events mature, losses are paid and information emerges, we expect our reserves may change, perhaps materially.

Accordingly, we may underestimate the exposures we are assuming and our results of operations and financial condition may be adversely impacted, perhaps significantly. Conversely, we may prove to be too conservative and contribute to factors which would impede our ability to grow in respect of new markets or perils or in connection with our current portfolio of coverages.

The trend towards increasingly frequent and severe climate events could result in underestimated exposures that have the potential to adversely impact our financial results.

Our most severe estimated economic exposures arise from our coverages for natural disasters and catastrophes. The trend towards increased severity and frequency of weather related natural disasters and catastrophes which we believe arises in part from changes in climate conditions, coupled with currently projected demographic trends in catastrophe-exposed regions, contributes to factors which we believe

increase the average economic value of expected losses, increase the number of people exposed per year to natural disasters and in general exacerbate disaster risk, including risks to infrastructure, global supply chains and agricultural production. Further, we believe that the recent increase in catastrophic events is indicative of permanent climate change rather than transient climate variability. Accordingly, we expect an increase in claims, especially from properties located in these catastrophe-exposed regions.

A substantial portion of our coverages may be adversely impacted by climate change, and we cannot assure you that our risk assessments accurately reflect environmental and climate related risks. We cannot predict with certainty the frequency or severity of tropical cyclones, wildfires or other catastrophes. Unanticipated environmental incidents could lead to additional insured losses that exceed our current estimates, resulting in disruptions to or adverse impacts on our business, the market, or our clients. Further, certain investments, such as catastrophe-linked securities and property catastrophe managed joint ventures, or other assets in our investment portfolio, could also be adversely impacted by climate change.

A decline in our financial strength ratings may adversely impact our business, perhaps materially so.

Financial strength ratings are used by ceding companies and reinsurance intermediaries to assess the financial strength and quality of reinsurers and insurers. Rating agencies evaluate us periodically and may downgrade or withdraw their financial strength ratings in the future if we do not continue to meet the criteria of the ratings previously assigned to us. In addition, rating agencies may make changes in their capital models and rating methodologies which could increase the amount of capital required to support the ratings.

A ratings downgrade or other negative ratings action could adversely affect our ability to compete with other reinsurers and insurers, as well as the marketability of our product offerings, our access to and cost of borrowing and our ability to write new business, which could materially adversely affect our results of operations. For example, following a ratings downgrade we might lose customers to more highly rated competitors or retain a lower share of the business of our customers or we could incur higher borrowing costs on our credit facilities.

In addition, many reinsurance contracts contain provisions permitting cedants to, among other things, cancel coverage pro rata or require the reinsurer to post collateral for all or a portion of its obligations if the reinsurer is downgraded below a certain rating level. It is increasingly common for our reinsurance agreements to contain such terms. Whether a cedant would exercise any of these rights could depend on various factors, such as the reason for and extent of such downgrade, the prevailing market conditions and the pricing and availability of replacement reinsurance coverage. We cannot predict to what extent these contractual rights would be exercised, if at all, or what effect this would have on our financial condition or future operations, but the effect could be material.

For the current ratings of certain of our subsidiaries and joint ventures and additional ratings information, refer to “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Liquidity and Capital Resources, Ratings.”

Emerging claim and coverage issues, or other litigation, could adversely affect us.

Unanticipated developments in the law as well as changes in social conditions could potentially result in unexpected claims for coverage under our insurance and reinsurance contracts. These developments and changes may adversely affect us, perhaps materially so. For example, we could be subject to developments that impose additional coverage obligations on us beyond our underwriting intent, or to increases in the number or size of claims to which we are subject.

In addition, we believe our property results have been adversely impacted over recent periods by increasing primary claims level fraud and abuses, as well as other forms of social inflation, and that these trends may continue, particularly in certain U.S. jurisdictions in which we focus, including Florida and Texas. For example, in recent years, Florida homeowners have been assigning the benefit of their insurance recovery to third parties, typically related to a water loss claim but also with respect to other claims. This practice is referred to as an “assignment of benefits” or “AOB,” and has resulted in increases in the size and number of claims and the incidences of litigation, interference in the adjustment of claims, and the assertion of bad faith actions and a one-way right to claim attorney fees. AOB and related insurance fraud may directly affect us, potentially materially, through any policy we write in Florida, and by inflating the size of occurrences we

cover under our reinsurance treaties and reducing the value of certain investments we have in Florida, including both debt and equity investments in domestic reinsurers. In July 2019, Florida enacted an AOB reform bill intended to limit AOB litigation by creating requirements for the execution of an AOB and allowing an insurance policy to prohibit an AOB, but there can be no assurance the new legislation will reduce the impact of AOB practices.

With respect to our casualty and specialty reinsurance operations, these legal and social changes and their impact may not become apparent until some time after their occurrence. For example, we could be deemed liable for losses arising out of a matter, such as the potential for industry losses arising out of a pandemic illness, that we had not anticipated or had attempted to contractually exclude. Moreover, irrespective of the clarity and inclusiveness of policy language, we cannot assure you that a court or arbitration panel will enforce policy language or not issue a ruling adverse to us. Our exposure to these uncertainties could be exacerbated by the increased willingness of some market participants to dispute insurance and reinsurance contract and policy wording and by social inflation trends, including increased litigation, expanded theories of liability and higher jury awards. These risks may be further exacerbated by the increasing trend of some primary insurers not to settle underlying claims. Alternatively, potential efforts by us to exclude such exposures could, if successful, reduce the market's acceptance of our related products. The full effects of these and other unforeseen emerging claim and coverage issues are extremely hard to predict. As a result, the full extent of our liability under our coverages may not be known for many years after a contract is issued. Furthermore, we expect that our exposure to this uncertainty will grow as our casualty businesses grow, because in these "long-tail" lines claims can typically be made for many years, making them more susceptible to these trends than our catastrophe business, which is typically more "short-tail." While we continually seek to improve the effectiveness of our contracts and claims capabilities, we may fail to mitigate our exposure to these growing uncertainties.

Retrocessional reinsurance may become unavailable on acceptable terms, or may not provide the coverage we intended to obtain, or we may not be able to collect on claimed retrocessional coverage.

As part of our risk management, we buy reinsurance for our own account, which is known as "retrocessional reinsurance." The reinsurance we purchase is generally subject to annual renewal. From time to time, market conditions have limited or prevented insurers and reinsurers from obtaining retrocessional reinsurance, which may be the case even when reinsurance market conditions in general are strong. Accordingly, we may not be able to renew our current retrocessional reinsurance arrangements or obtain desired amounts of new or replacement coverage. In addition, even if we are able to obtain such retrocessional reinsurance, we may not be able to negotiate terms that we consider appropriate or acceptable from entities with satisfactory creditworthiness or collect on claimed retrocessional coverage. This could limit the amount of business we are willing to write or decrease the protection available to us as a result of large loss events.

When we purchase reinsurance or retrocessional reinsurance for our own account, the insolvency of any of our reinsurers, or inability or reluctance of any of our reinsurers to make timely payments to us under the terms of our reinsurance agreements could have a material adverse effect on us. We have significant reinsurance recoverables associated with the large catastrophe events of the past several years and, generally, we believe that the "willingness to pay" of some reinsurers and retrocessionaires is declining. Therefore, this risk may be more significant to us at present than at many times in the past. Complex coverage issues or coverage disputes may impede our ability to collect amounts we believe we are owed.

A large portion of our reinsurance protection is concentrated with a relatively small number of reinsurers. The risk of such concentration of retrocessional coverage may be increased by recent and future consolidation within the industry.

We also sell retrocessional reinsurance to other reinsurers. See "*We are exposed to counterparty credit risk, including with respect to reinsurance brokers, customers and retrocessionaires*" below for certain counterparty risks that may be associated with this business.

We depend on a few insurance and reinsurance brokers for a preponderance of our revenue, and any loss of business provided by them could adversely affect us.

We market our insurance and reinsurance products worldwide through a limited number of insurance and reinsurance brokers. As our business is heavily reliant on the use of a few brokers, the loss of a broker,

through a merger, other business combination or otherwise, could result in the loss of a substantial portion of our business, which would have a material adverse effect on us. Our ability to market our products could decline as a result of the loss of the business provided by any of these brokers and it is possible that our premiums written would decrease. Further, due to the concentration of our brokers, which has increased further following the closing of the acquisition of TMR, our brokers may have increasing power to dictate the terms and conditions of our arrangements with them, which could have a negative impact on our business.

We are exposed to counterparty credit risk, including with respect to reinsurance brokers, customers and retrocessionaires.

We believe our exposure to counterparty credit risk has increased in recent years. In accordance with industry practice, we pay virtually all amounts owed on claims under our policies to reinsurance brokers, and these brokers, in turn, pay these amounts over to the insurers that have reinsured a portion of their liabilities with us (we refer to these insurers as ceding insurers). Likewise, premiums due to us by ceding insurers are virtually all paid to brokers, who then pass such amounts on to us. In many jurisdictions, we have contractually agreed that if a broker were to fail to make a payment to a ceding insurer, we would remain liable to the ceding insurer for the deficiency. Conversely, in many jurisdictions, when the ceding insurer pays premiums for these policies to reinsurance brokers for payment over to us, these premiums are considered to have been received by us upon receipt by the broker, and the ceding insurer is no longer liable to us for those amounts, whether or not we have actually received the premiums. Consequently, in connection with the settlement of reinsurance balances, we assume a substantial degree of credit risk associated with brokers around the world.

We are also exposed to the credit risk of our customers, who, pursuant to their contracts with us, frequently pay us over time. We cannot assure you that we will collect our premiums receivable from ceding insurers and reinsurers to whom we sell retrocessional reinsurance or our reinsurance recoverables from our own reinsurers or retrocessionaires, which may not be collateralized, and we may be required to write down additional amounts in future periods. To the extent our customers or retrocedants become unable to pay future premiums, we would be required to recognize a downward adjustment to our premiums receivable or reinsurance recoverables, as applicable, in our financial statements. We have significant reinsurance recoverables, and our failure to collect even a small portion of these recoverables, or a meaningful delay in the collection of recoverables as to which our own underlying obligations are due, could negatively affect our results of operations and financial condition, perhaps materially.

During periods of economic uncertainty, our consolidated credit risk, reflecting our counterparty dealings with agents, brokers, customers, retrocessionaires, capital providers, parties associated with our investment portfolio, and others may increase, perhaps materially so.

Weakness in business and economic conditions generally or specifically in the principal markets in which we do business could adversely affect our business and operating results.

Challenging economic conditions throughout the world could adversely affect our business and financial results. If economic conditions should weaken, the business environment in our principal markets would be adversely affected, which could adversely affect demand for the products sold by us or our customers. In addition, volatility in the U.S. and other securities markets may adversely affect our investment portfolio or the investment results of our clients, potentially impeding their operations or their capacity to invest in our products. Global financial markets and economic and geopolitical conditions are outside of our control and difficult to predict, being influenced by factors such as national and international political circumstances (including governmental instability, wars, terrorist acts or security operations), interest rates, market volatility, asset or market correlations, equity prices, availability of credit, inflation rates, economic uncertainty, changes in laws or regulations including as regards taxation, trade barriers, commodity prices, interest rates, and currency exchange rates and controls. In addition, as discussed above, we believe our consolidated credit risk is likely to increase during an economic downturn.

A soft reinsurance underwriting market would adversely affect our business and operating results.

In a soft reinsurance underwriting market, premium rates are stable or falling and coverage is readily available. In a hard reinsurance underwriting market, premium rates are increasing and less coverage may be available. Leading global intermediaries and other sources have generally reported that the U.S. reinsurance market reflected a soft underwriting market during the last several years, with growing levels of industry wide capital held. This capital has been supplied principally by traditional market participants and

increasingly by alternative capital providers. We believe that the current reinsurance underwriting market may be transitioning toward a hard market phase, caused by recent withdrawals of alternative capital, the aggregation of multiple catastrophic events and continuing prior year adverse development. Market cycles are likely to persist, however, and it is possible that increased access of primary insurers to capital, new technologies and other factors may eliminate or significantly lessen the possibility of any current or future hard reinsurance underwriting market.

A decline in our investment performance could reduce our profitability and hinder our ability to pay claims promptly in accordance with our strategy.

We have historically derived a meaningful portion of our income from our invested assets, which are comprised of, among other things, fixed maturity securities, such as bonds, asset-backed securities, mortgage-backed securities, equity securities, and other investments, including but not limited to private equity investments, bank loan funds and hedge funds. Accordingly, our financial results are subject to a variety of investment risks, including risks relating to general economic conditions, inflation, market volatility, interest rate fluctuations, foreign currency risk, liquidity risk and credit and default risk. Additionally, with respect to certain of our investments, we are subject to pre-payment or reinvestment risk. Our investment portfolio also includes securities with a longer duration, which may be more susceptible to certain of these risks.

The market value of our fixed maturity investments is subject to fluctuation depending on changes in various factors, including prevailing interest rates and widening credit spreads. A decline in interest rates or continuation of the current low interest rate environment could reduce our investment yield, which would reduce our overall profitability. Conversely, increases in interest rates could cause the market value of our investment portfolio to decrease, perhaps substantially. Interest rates are highly sensitive to many factors, including governmental monetary policies, domestic and international economic and political conditions and other factors beyond our control. Any measures we take that are intended to manage the risks of operating in a changing interest rate environment may not effectively mitigate such interest rate sensitivity.

A portion of our investment portfolio is allocated to other classes of investments including equity securities and interests in alternative investment vehicles such as catastrophe bonds, private equity investments, senior secured bank loan funds and hedge funds. These other classes of investments are recorded on our consolidated balance sheet at fair value, which is generally established on the basis of the valuation criteria set forth in the governing documents of such investment vehicles. Such valuations may differ significantly from the values that would have been used had ready markets existed for the shares, partnership interests, notes or other securities representing interests in the relevant investment vehicles. We cannot assure you that, if we were forced to sell these assets, we would be able to sell them for the prices at which we have recorded them, and we might be forced to sell them at significantly lower prices. Furthermore, our interests in many of the investment classes described above are subject to restrictions on redemptions and sales which limit our ability to liquidate these investments in the short term. These classes of investments expose us to market risks including interest rate risk, foreign currency risk, equity price risk and credit risk. The performance of these classes of investments is also dependent on the individual investment managers and the investment strategies. It is possible that the investment managers will leave and/or the investment strategies will become ineffective or that such managers will fail to follow our investment guidelines. Any of the foregoing could result in a material adverse change to our investment performance, and accordingly, adversely affect our financial results.

In addition to the foregoing, we may from time to time re-evaluate our investment approach and guidelines and explore investment opportunities in respect of other asset classes not previously discussed above, including by expanding our relatively small portfolio of direct investments in the equity markets. Any such investments could expose us to systemic and price volatility risk, interest rate risk and other market risks. Any investment in equity securities is inherently volatile. We cannot assure you that such an investment will be profitable and we could lose the value of our investment. Accordingly, any such investment could impact our financial results, perhaps materially, over both the short and the long term.

U.S. taxing authorities could contend that one or more of our Bermuda subsidiaries is subject to U.S. corporate income tax, as a result of changes in laws or regulations, or otherwise.

If the IRS were to contend successfully that we or one or more of our Bermuda subsidiaries is engaged in a trade or business in the U.S., each entity engaged in a U.S. trade or business would, to the extent not

exempted from tax by the U.S.-Bermuda income tax treaty, be subject to U.S. corporate income tax on the portion of its net income treated as effectively connected with a U.S. trade or business, as well as the U.S. corporate branch profits tax. If we or one or more of our Bermuda subsidiaries were ultimately held to be subject to taxation, our earnings would correspondingly decline.

In addition, benefits of the U.S.-Bermuda income tax treaty which may limit any tax to income attributable to a permanent establishment maintained by one or more of our Bermuda subsidiaries in the U.S. are only available to a subsidiary if more than 50% of its shares are beneficially owned, directly or indirectly, by individuals who are Bermuda residents or U.S. citizens or residents. Our Bermuda subsidiaries may not be able to continually satisfy, or establish to the IRS that they satisfy, this beneficial ownership test. Finally, it is unclear whether the U.S.-Bermuda income tax treaty (assuming satisfaction of the beneficial ownership test) applies to income other than premium income, such as investment income.

Recently enacted U.S. tax reform legislation, as well as possible future tax reform legislation and regulations, could reduce our access to capital, decrease demand for our products and services, impact our shareholders or investors in our joint ventures or other entities we manage or otherwise adversely affect us.

U.S. tax reform legislation, commonly referred to as the Tax Cuts and Jobs Act (the "Tax Bill"), was signed into law on December 22, 2017. The Tax Bill amends a range of U.S. federal tax rules applicable to individuals, businesses and international taxation, including, among other things, by altering the current taxation of insurance premiums ceded from a United States domestic corporation to any non-U.S. affiliate. For example, the Tax Bill includes a new base erosion anti-avoidance tax (the "BEAT") that would have substantially altered the taxation of affiliate reinsurance between our operating affiliates which are subject to U.S. taxation and our non-U.S. affiliates which are not. We believe those transactions would have become economically unfeasible under the BEAT and terminated them as of the 2017 year end. While these transactions were not significant for us, on an industry-wide basis for specific market participants the impacts could be more material, and it is possible that over time the BEAT may result in increased prices for certain reinsurance or insurance products, which could cause a decrease in demand for these products and services due to limitations on the available resources of our clients or their underlying insureds.

The Tax Bill increased the likelihood that we or our non-U.S. subsidiaries or joint ventures managed by us will be deemed a "controlled foreign corporation" ("CFC") within the meaning of the Internal Revenue Code for U.S. federal tax purposes. Specifically, the Tax Bill expands the definition of "U.S. shareholder" for CFC purposes to include U.S. persons who own 10% or more of the value of a foreign corporation's shares, rather than only looking to voting power held. As a result, the "voting cut-back" provisions included in our Amended and Restated Bye-laws that limit the voting power of any shareholder to 9.9% of the total voting power of our capital stock will be ineffective in avoiding "U.S. shareholder" status for U.S. persons who own 10% or more of the value of our shares. The Tax Bill also expands certain attribution rules for stock ownership in a way that would cause foreign subsidiaries in a foreign parent group that includes at least one U.S. subsidiary to be treated as CFCs. In the event a corporation is characterized as a CFC, any "U.S. shareholder" of the CFC is required to include its pro rata share of certain insurance and related investment income in income for a taxable year, even if such income is not distributed. In addition, U.S. tax exempt entities subject to the unrelated business taxable income ("UBTI") rules that own 10% or more of the value of our non-U.S. subsidiaries or joint ventures managed by us that are characterized as CFCs may recognize UBTI with respect to such investment.

In addition to changes in the CFC rules, the Tax Bill contains modifications to certain provisions relating to passive foreign investment company ("PFIC") status that could, for example, discourage U.S. persons from investing in our joint ventures or other entities we manage. The Tax Bill makes it more difficult for a non-U.S. insurance company to avoid PFIC status under an exception for certain non-U.S. insurance companies engaged in the active conduct of an insurance business. The Tax Bill limits this exception to a non-U.S. insurance company that would be taxable as an insurance company if it were a U.S. corporation and that maintains insurance liabilities of more than 25% of such company's assets for a taxable year (or, alternatively, maintains insurance liabilities that at least equal 10% of its assets, is predominantly engaged in an insurance business and it satisfies a facts and circumstances test that requires a showing that the failure to exceed the 25% threshold is due to runoff-related or rating-related circumstances). While we believe that our non-U.S. insurance subsidiaries should satisfy this reserve test for the foreseeable future, we cannot assure you that this will continue to be the case in future years, and there is a significant risk that

joint venture entities managed by us may not satisfy the reserve test. We also do not expect RenaissanceRe to be a PFIC under current law; however, if the proposed regulations (as discussed below) were made effective in their current form, there would be a significant risk that RenaissanceRe and its non-U.S. subsidiaries could be treated as PFICs.

Further, the U.S. Treasury and the IRS recently issued proposed regulations intended to clarify the application of this insurance company exception to the classification of a non-U.S. insurer as a PFIC and provide guidance on a range of issues relating to PFICs including the application of the look-through rule, the treatment of income and assets of certain U.S. insurance subsidiaries for purposes of the look-through rule and the extension of the look-through rule to 25% or more owned partnerships. The proposed regulations define insurance liabilities for purposes of the reserve test, tighten the reserve test and the statutory cap on insurance liabilities and provide guidance on the runoff-related and rating-related circumstances for purposes of qualifying as a qualified insurance corporation under the alternative test. The proposed regulations also provide that a non-U.S. insurer will qualify for the insurance company exception only if, among other things, the non-U.S. insurer's officers and employees perform its substantial managerial and operational activities (taking into account activities of officers and employees of certain related entities in certain cases). The proposed regulations also provide that an active conduct percentage test must be satisfied for the insurance company exception to apply, which test compares the expenses for services of officers and employees of the non-U.S. insurer and certain related entities incurred for the production of premium and certain investment income to all such expenses regardless of the service provider. These proposed regulations will not be effective until adopted in final form. Even if our non-U.S. insurance subsidiaries satisfy the reserve test, it is possible that one or more of our non-U.S. insurance subsidiaries may be characterized as PFICs if these proposed regulations are finalized in their current form.

We are unable to predict all of the ultimate impacts of the Tax Bill and other proposed tax reform regulations and legislation on our business and results of operations. It is possible the IRS will construe the intent of the Tax Bill as having been to reduce or eliminate certain perceived tax advantages of companies (including insurance companies) that have legal domiciles outside the U.S., and its interpretation, enforcement actions or regulatory changes could increase the impact of the Tax Bill beyond prevailing current assessments or our own estimates. Further, it is possible that other legislation could be introduced and enacted in the future that would have an adverse impact on us. These events and trends towards more punitive taxation of cross border transactions could in the future materially adversely impact the insurance and reinsurance industry and our own results of operations by increasing taxation of certain activities and structures in our industry. Accordingly, we cannot reliably estimate what the potential impact of any such changes could be to us or our non-U.S. subsidiaries or joint ventures managed by us and our and their respective sources of capital, investors or the market generally, however, it is possible these changes could materially adversely impact our results of operations.

Acquisitions or strategic investments we have made or may make could turn out to be unsuccessful.

As part of our strategy, we frequently monitor and analyze opportunities to acquire or make a strategic investment in new or other businesses we believe will not detract from our core operations. The negotiation of potential acquisitions (such as the acquisition of TMR) or strategic investments as well as the integration of an acquired business or new personnel, could result in a substantial diversion of management resources.

Future acquisitions could likewise involve numerous additional risks such as potential losses from unanticipated litigation or levels of claims and inability to generate sufficient revenue to offset acquisition costs. As we pursue or consummate a strategic transaction or investment, we may value the acquired or funded company or operations incorrectly, fail to integrate the acquired operations appropriately into our own operations, fail to successfully manage our operations as our product and geographical diversity increases, expend unforeseen costs during the acquisition or integration process, or encounter other unanticipated risks or challenges. If we succeed in consummating a strategic investment, we may fail to value it accurately or divest it or otherwise realize the value which we originally invested or have subsequently reflected in our consolidated financial statements. Any failure by us to effectively limit such risks or implement our acquisitions or strategic investment strategies could have a material adverse effect on our business, financial condition or results of operations. As discussed in more detail below under "Risks Related to RenaissanceRe Following the acquisition of TMR," while we have made substantial progress

with the integration of our operations with the operations of TMR, we may not be able to complete such integration smoothly or successfully, which would reduce the anticipated benefits of the acquisition of TMR.

The loss of key senior members of management could adversely affect us.

Our success depends in substantial part upon our ability to attract and retain our senior officers. The loss of services of members of our senior management team and the uncertain transition of new members of our senior management team may strain our ability to execute our strategic initiatives. The loss of one or more of our senior officers could adversely impact our business, by, for example, making it more difficult to retain customers, attract or maintain our capital support, or meet other needs of our business, which depend in part on the service of the departing officer. We may also encounter unforeseen difficulties associated with the transition of members of our senior management team to new or expanded roles necessary to execute our strategic and tactical plans from time to time.

In addition, our ability to execute our business strategy is dependent on our ability to attract and retain a staff of qualified underwriters and service personnel. The location of our global headquarters in Bermuda may impede our ability to recruit and retain highly skilled employees. Under Bermuda law, non-Bermudians (other than spouses of Bermudians, holders of Permanent Residents' Certificates and holders of Working Residents' Certificates) may not engage in any gainful occupation in Bermuda without a valid government work permit. Some members of our senior management are working in Bermuda under work permits that will expire over the next several years. The Bermuda government could refuse to extend these work permits, and no assurances can be given that any work permit will be issued or, if issued, renewed upon the expiration of the relevant term. If any of our senior officers or key contributors were not permitted to remain in Bermuda, or if we experienced delays or failures to obtain permits for a number of our professional staff, our operations could be disrupted and our financial performance could be adversely affected as a result.

We are exposed to risks in connection with our management of capital on behalf of investors in joint ventures or other entities we manage.

Our operating subsidiaries owe certain legal duties and obligations (including reporting, governance and allocation obligations) to third-party investors and are subject to a variety of increasingly complex laws and regulations relating to the management of third-party capital. Complying with these obligations, laws and regulations requires significant management time and attention. Although we continually monitor our compliance policies and procedures, faulty judgments, simple errors or mistakes, or the failure of our personnel to adhere to established policies and procedures, could result in our failure to comply with applicable obligations, laws or regulations, which could result in significant liabilities, penalties or other losses to us and seriously harm our business and results of operations.

In addition, in furtherance of our goal of matching well-structured risk with capital whose owners would find the risk-return trade-off attractive, we may invest capital in new and complex ventures with which we do not have a significant amount of experience, which may increase our exposure to legal, regulatory and reputational risks.

In addition, our third-party capital providers may, in general, redeem their interests in our joint ventures at certain points in time, which could materially impact the financial condition of such joint ventures, and could in turn materially impact our financial condition and results of operations.

Certain of our joint venture capital providers provide significant capital investment and other forms of capital support in respect of our joint ventures. The loss, or alteration in a negative manner, of any of this capital support could be detrimental to our financial condition and results of operations. Moreover, we can provide no assurance that we will be able to attract and raise additional third-party capital for our existing joint ventures or for potential new joint ventures and therefore we may forego existing and/or potentially attractive fee income and other income generating opportunities.

We may be adversely affected by foreign currency fluctuations.

We routinely transact business in currencies other than the U.S. dollar, our financial reporting currency. Moreover, we maintain a portion of our cash and investments in currencies other than the U.S. dollar. Although we generally seek to hedge significant non-U.S. dollar positions, we may, from time to time, experience losses resulting from fluctuations in the values of these foreign currencies, which could cause our consolidated earnings to decrease, or could result in a negative impact to shareholders' equity. In addition, failure to manage our foreign currency exposures could cause our results of operations to be more

volatile. Adverse, unforeseen or rapidly shifting currency valuations in our key markets may magnify these risks over time. Significant third-party capital management operations may further complicate our foreign currency operational needs and risk.

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

As a result of concerns about the accuracy of the calculation of LIBOR, a number of British Bankers' Association ("BBA") member banks entered into settlements with certain regulators and law enforcement agencies with respect to the alleged manipulation of LIBOR. Actions by the BBA, regulators or law enforcement agencies as a result of these or future events, may result in changes to the manner in which LIBOR is determined. Potential changes, or uncertainty related to such potential changes may adversely affect the market for LIBOR-based securities. In addition, changes or reforms to the determination or supervision of LIBOR may result in a sudden or prolonged increase or decrease in reported LIBOR, which could have an adverse impact on the market for LIBOR-based securities.

In addition, the United Kingdom Financial Conduct Authority has announced its desire to phase out the use of LIBOR by the end of 2021, which may affect us adversely. If LIBOR ceases to exist, we may need to renegotiate the terms of certain of our capital securities and credit instruments, which utilize LIBOR as a factor in determining the interest rate, to replace LIBOR with the new standard that is established. The U.S. Federal Reserve has begun publishing a Secured Overnight Funding Rate which is intended to replace U.S. dollar LIBOR. Plans for alternative reference rates for other currencies have also been announced. At this time, it is not possible to predict how markets will respond to these new rates, and the effect that any changes in LIBOR or the discontinuation of LIBOR might have on new or existing financial instruments. As such, the potential effect of any such event on our cost of capital and net investment income cannot yet be determined.

We could face losses from terrorism, political unrest and war.

We have exposure to losses resulting from acts of terrorism, political unrest and acts of war. The frequency of these events has increased in recent years and it is difficult to predict the occurrence of these events or to estimate the amount of loss an occurrence will generate. Accordingly, it is possible that actual losses from such acts will exceed our probable maximum loss estimate and that these acts will have a material adverse effect on us.

We closely monitor the amount and types of coverage we provide for terrorism risk under reinsurance and insurance treaties. If we think we can reasonably evaluate the risk of loss and charge an appropriate premium for such risk we will write some terrorism exposure on a stand-alone basis. We generally seek to exclude terrorism from non-terrorism treaties. If we cannot exclude terrorism, we evaluate the risk of loss and attempt to charge an appropriate premium for such risk. Even in cases where we have deliberately sought to exclude coverage, we may not be able to completely eliminate our exposure to terrorist acts.

The Terrorism Risk Insurance Program Reauthorization Act of 2015 ("TRIPRA"), which provides a federal backstop to all U.S. based property and casualty insurers for insurance related losses resulting from any act of terrorism on U.S. soil or against certain U.S. air carriers, vessels or foreign missions, expires on December 31, 2020. On December 19, 2019, the U.S. Senate passed federal spending legislation that provides a long-term reauthorization of this federal program until December 31, 2027. We benefit from TRIPRA as this protection generally inures to our benefit under our reinsurance treaties where terrorism is not excluded.

We are subject to cybersecurity risks and may incur increasing costs in an effort to minimize those risks.

Publicly reported instances of cyber security threats and incidents have increased in recent years, and we may be subject to heightened cyber-related risks. Our business depends on the proper functioning and availability of our information technology platform, including communications and data processing systems and our proprietary systems. We are also required to effect electronic transmissions with third parties including brokers, clients, vendors and others with whom we do business, and with our Board of Directors. We believe we have implemented appropriate security measures, controls and procedures to safeguard our information technology systems and to prevent unauthorized access to such systems and any data processed or stored in such systems, and we periodically evaluate and test the adequacy of such systems,

measures, controls and procedures and perform third-party risk assessments; however, there can be no guarantee that such systems, measures, controls and procedures will be effective, that we will be able to establish secure capabilities with all of third parties, or that third parties will have appropriate controls in place to protect the confidentiality of our information. Security breaches could expose us to a risk of loss or misuse of our information, litigation and potential liability.

In addition, cyber incidents that impact the availability, reliability, speed, accuracy or other proper functioning of our systems could have a significant impact on our operations, and potentially on our results. We protect our information systems with physical and electronic safeguards considered appropriate by management. However, it is not possible to protect against every potential power loss, telecommunications failure, cybersecurity attack or similar event that may arise. Moreover, the safeguards we use are subject to human implementation and maintenance and to other uncertainties. Although we attempt to keep personal, proprietary and other sensitive information confidential, we may be impacted by third parties who may not have or use appropriate controls to protect such information.

We may not have the resources or technical sophistication to anticipate or prevent rapidly evolving types of cyberattacks. A significant cyber incident, including system failure, security breach, disruption by malware or other damage could interrupt or delay our operations, result in a violation of applicable cybersecurity and privacy and other laws, damage our reputation, cause a loss of customers or give rise to monetary fines and other penalties, which could be significant. While management is not aware of a cybersecurity incident that has had a material effect on our operations, there can be no assurances that a cyber incident that could have a material impact on us will not occur in the future.

Our disaster recovery and business continuity plans involve arrangements with our off-site, secure data centers. We cannot assure you that we will be able to access our systems from these facilities in the event that our primary systems are unavailable due to various scenarios, such as natural disasters or that we have prepared for every disaster or every scenario which might arise in respect of a disaster for which we have prepared, and cannot assure you our efforts in respect of disaster recovery will succeed, or will be sufficiently rapid to avoid harm to our business.

The cybersecurity regulatory environment is evolving, and it is possible that the costs of complying with new or developing regulatory requirements will increase. For example, the NYDFS Cybersecurity Regulation imposes pre-breach cybersecurity obligations with which certain of our subsidiaries are required to comply. We are also required to comply with cybersecurity laws in other jurisdictions, in addition to similar laws and regulations that are being or may be enacted in the future in other jurisdictions in which we operate. In addition, we operate in a number of jurisdictions with strict data privacy and other related laws, which could be violated in the event of a significant cybersecurity incident, or by our personnel. Failure to comply with these obligations can give rise to monetary fines and other penalties, which could be significant.

See "Part I, Item 1. Business, Information Technology" for additional information related to information technology and cybersecurity.

We may from time to time modify our business and strategic plan, and these changes could adversely affect us and our financial condition.

We regularly evaluate our business plans and strategies, which often results in changes to our business plans and initiatives. Given the increasing importance of strategic execution in our industry, we are subject to increasing risks related to our ability to successfully implement our evolving plans and strategies, particularly as the pace of change in our industry continues to increase. Changing plans and strategies requires significant management time and effort and may divert management's attention from our core and historically successful operations and competencies. We routinely evaluate potential investments and strategic transactions, but there can be no assurance we will successfully consummate any such transaction, or that a consummated transaction will succeed financially or strategically. Moreover, modifications we undertake to our operations may not be immediately reflected in our financial statements. Therefore, risks associated with implementing or changing our business strategies and initiatives, including risks related to developing or enhancing our operations, controls and other infrastructure, may not have an impact on our publicly reported results until many years after implementation. Our failure to carry out our business plans may have an adverse effect on our long-term results of operations and financial condition.

Our current business strategy focuses on writing reinsurance, with limited writing of primary insurance, and our acquisition of TMR further concentrated our strategy on reinsurance. In contrast, over the last several

years, in connection with consolidation in the insurance and reinsurance industries, certain of our competitors increased the amount of primary insurance they are writing, both on an absolute and relative basis. There can be no assurance that our business strategy of focusing on writing reinsurance, with limited writing of primary insurance, will prove prudent as compared to the strategies of our competitors.

The determination of impairments taken is highly subjective and could materially impact our financial position or results of operations.

The determination of impairments taken on our investments, investments in other ventures, goodwill and other intangible assets and loans varies by type of asset and is based upon our periodic evaluation and assessment of known and inherent risks associated with the respective asset class. Such evaluations and assessments are revised as conditions change and new information becomes available. Management updates its evaluations regularly and reflects impairments in operations as such evaluations are revised. There can be no assurance that our management has accurately assessed the level of impairments taken in our financial statements. Furthermore, management may determine that impairments are needed in future periods and any such impairment will be recorded in the period in which it occurs, which could materially impact our financial position or results of operations. Historical trends may not be indicative of future impairments.

We may be adversely impacted by inflation.

We monitor the risk that the principal markets in which we operate could experience increased inflationary conditions, which would, among other things, cause loss costs to increase, and impact the performance of our investment portfolio. We believe the risks of inflation across our key markets is increasing. 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.

We depend on the policies, procedures and expertise of ceding companies and delegated authority counterparties, who may fail to accurately assess the risks they underwrite, which exposes us to operational and financial risks.

Like other reinsurers, we do not separately evaluate each primary risk assumed under our reinsurance contracts or pursuant to our delegated authority business. Accordingly, we are heavily dependent on the original underwriting decisions made by our ceding companies and delegated authority counterparties and are therefore subject to the risk that our customers may not have adequately evaluated the risks to be reinsured, or that the premiums ceded to us will not adequately compensate us for the risks we assume, perhaps materially so. In addition, it is possible that delegated authority counterparties or other counterparties authorized to bind policies on our behalf will fail to fully comply with regulatory requirements, such as those relating to sanctions, or the standards we impose in light of our own underwriting and reputational risk tolerance. To the extent we continue to increase the relative amount of proportional coverages we offer, we will increase our aggregate exposure to risks of this nature.

Our business is subject to operational risks, including systems or human failures.

We are subject to operational risks including fraud, employee errors, failure to document transactions properly or to obtain proper internal authorization, failure to comply with regulatory requirements or obligations under our agreements, failure of our service providers, such as investment custodians, actuaries, information technology providers, etc., to comply with our service agreements, or information technology failures. Losses from these risks may occur from time to time and may be significant.

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

To the extent that our existing capital is insufficient to support our future operating requirements, we may need to raise additional funds through financings or limit our growth. Our operations are subject to significant volatility in capital due to our exposure to potentially significant catastrophic events. Any further equity, debt or hybrid financings, or capacity needed for letters of credit, if available at all, may be on terms that are unfavorable to us. Our ability to raise such capital successfully would depend upon the facts and circumstances at the time, including our financial position and operating results, market conditions, and

applicable legal issues. We are also exposed to the risk that the contingent capital facilities we have in place may not be available as expected. If we are unable to obtain adequate capital when needed, our business, results of operations and financial condition would be adversely affected.

In addition, we are exposed to the risk that we may be unable to raise new capital for our managed joint ventures and other private alternative investment vehicles, which would reduce our future fee income and market capacity and thus negatively affect our results of operations and financial condition.

The covenants in our debt agreements limit our financial and operational flexibility, which could have an adverse effect on our financial condition.

We have incurred indebtedness, and may incur additional indebtedness in the future. Our indebtedness primarily consists of publicly traded notes, letters of credit and a revolving credit facility. For more details on our indebtedness, see “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Capital Resources.”

The agreements governing our indebtedness contain covenants that limit our ability and the ability of certain of our subsidiaries to make particular types of investments or other restricted payments, sell or place a lien on our or their respective assets, merge or consolidate. Certain of these agreements also require us or our subsidiaries to maintain specific financial ratios or contain cross-defaults to our other indebtedness. If we or our subsidiaries fail to comply with these covenants or meet these financial ratios, the noteholders or the lenders could declare a default and demand immediate repayment of all amounts owed to them or, where applicable, cancel their commitments to lend or issue letters of credit or, where the reimbursement obligations are unsecured, require us to pledge collateral or, where the reimbursement obligations are secured, require us to pledge additional or a different type of collateral.

The regulatory systems under which we operate and potential changes thereto could restrict our ability to operate, increase our costs, or otherwise adversely impact us.

Certain of our operating subsidiaries are not licensed or admitted in any jurisdiction except Bermuda, conduct business only from their principal offices in Bermuda and do not maintain offices in the U.S. The insurance and reinsurance regulatory framework continues to be subject to increased scrutiny in many jurisdictions, including the U.S. and Europe. If our Bermuda insurance or reinsurance operations become subject to the insurance laws of any state in the U.S., jurisdictions in the EU, or elsewhere, we could face challenges to the future operations of these companies.

Moreover, we could be put at a competitive disadvantage in the future with respect to competitors that are licensed and admitted in U.S. jurisdictions. Among other things, jurisdictions in the U.S. do not permit insurance companies to take credit for reinsurance obtained from unlicensed or non-admitted insurers on their statutory financial statements unless security is posted. Our contracts generally require us to post a letter of credit or provide other security (e.g., through a multi-beneficiary reinsurance trust). In order to post these letters of credit, issuing banks generally require collateral. It is possible that the EU or other countries might adopt a similar regime in the future, or that U.S. or EU regulations could be altered in a way that treats Bermuda-based companies disparately. It is possible that individual jurisdiction or cross border regulatory developments could adversely differentiate Bermuda, the jurisdiction in which we are subject to group supervision, or could exclude Bermuda-based companies from benefits such as market access, mutual recognition or reciprocal rights made available to other jurisdictions, which could adversely impact us, perhaps significantly. Any such development, or our inability to post security in the form of letters of credit or trust funds when required, could significantly and negatively affect our operations.

As a result of the acquisition of TMR, we became subject to the requirements of certain regulatory agencies and bodies to which our operations were not previously subject, including in New York, Switzerland and Australia, resulting in additional costs to us. In addition, we could be required to allocate considerable time and resources to comply with any new or additional regulatory requirements in any of the jurisdictions in which we operate, including Bermuda, Switzerland, Maryland and the U.K. Any such requirements could impact the operations of our insurance and/or non-insurance subsidiaries, result in increased costs for us and impact our financial condition. In addition, we could be adversely affected if a regulatory authority believed we had failed to comply with applicable law or regulations.

Our current or future business strategy could cause one or more of our currently unregulated subsidiaries to become subject to some form of regulation. Any failure to comply with applicable laws could result in the

imposition of significant restrictions on our ability to do business, and could also result in fines and other sanctions, any or all of which could adversely affect our financial results and operations.

We face risks related to changes in Bermuda law and regulations, and the political environment in Bermuda.

We are incorporated in Bermuda and many of our operating companies are domiciled in Bermuda. Therefore, our exposure to potential changes in Bermuda law and regulation that may have an adverse impact on our operations, such as the imposition of tax liability, increased regulatory supervision or changes in regulation is heightened. The Bermuda insurance and reinsurance regulatory framework recently has become subject to increased scrutiny in many jurisdictions, including in the U.S., in various states within the U.S. and in the EU. We are unable to predict the future impact on our operations of changes in Bermuda laws and regulations to which we are or may become subject.

In addition, we are subject to changes in the political environment in Bermuda, which could make it difficult to operate in, or attract talent to, Bermuda. For example, Bermuda is a small jurisdiction and may be disadvantaged in participating in global or cross border regulatory matters as compared with larger jurisdictions such as the U.S. or the leading EU and Asian countries. In addition, Bermuda, which is currently an overseas territory of the U.K., may consider changes to its relationship with the U.K. in the future. These changes could adversely affect Bermuda or the international reinsurance market focused there, either of which could adversely impact us commercially.

Because we are a holding company, we are dependent on dividends and payments from our subsidiaries.

As a holding company with no direct operations, we rely on our investment income, cash dividends and other permitted payments from our subsidiaries to make principal and interest payments on our debt and to pay dividends to our shareholders. From time to time, we may not have sufficient liquid assets to meet these obligations. Regulatory restrictions on the payment of dividends under Bermuda law, Swiss law and various U.S. laws regulate the ability of our subsidiaries to pay dividends. If our subsidiaries are restricted from paying dividends to us, we may be unable to pay dividends to our shareholders or to repay our indebtedness.

Some aspects of our corporate structure may discourage third-party takeovers and other transactions or prevent the removal of our current board of directors and management.

Some provisions of our Amended and Restated Bye-Laws may discourage third parties from making unsolicited takeover bids or prevent the removal of our current board of directors and management. In particular, our Bye-Laws prohibit transfers of our capital shares if the transfer would result in a person owning or controlling shares that constitute 9.9% or more of any class or series of our shares, unless otherwise waived at the discretion of the Board. In addition, our Bye-Laws reduce the total voting power of any shareholder owning, directly or indirectly, beneficially or otherwise, more than 9.9% of our common shares to not more than 9.9% of the total voting power of our capital stock unless otherwise waived at the discretion of the Board. These provisions may have the effect of deterring purchases of large blocks of our common shares or proposals to acquire us, even if our shareholders might deem these purchases or acquisition proposals to be in their best interests.

In addition, our Bye-Laws provide for, among other things:

- a classified Board, whose size is fixed and whose members may be removed by the shareholders only for cause upon a 66 2/3% vote;
- restrictions on the ability of shareholders to nominate persons to serve as directors, submit resolutions to a shareholder vote and requisition special general meetings;
- a large number of authorized but unissued shares which may be issued by the Board without further shareholder action; and
- a 66 2/3% shareholder vote to amend, repeal or adopt any provision inconsistent with several provisions of the Bye-Laws.

These Bye-Law provisions make it more difficult to acquire control of us by means of a tender offer, open market purchase, proxy contest or otherwise and could discourage a prospective acquirer from making a

tender offer or otherwise attempting to obtain control of us. In addition, these Bye-Law provisions could prevent the removal of our current Board of Directors and management. To the extent these provisions discourage takeover attempts, they could deprive shareholders of opportunities to realize takeover premiums for their shares or could depress the market price of the shares.

In addition, many jurisdictions in which our insurance and reinsurance subsidiaries operate, including Maryland, New York, the U.K., Switzerland and Australia, have laws and regulations that require regulatory approval of a change in control of an insurer or an insurer's holding company. Where such laws apply to us and our subsidiaries, there can be no effective change in our control unless the person seeking to acquire control has filed a statement with the regulators and has obtained prior approval for the proposed change from such regulators. Under these laws, control is typically presumed when a person acquires, directly or indirectly, 10% or more of the voting power of the insurance company or its parent, although this presumption is rebuttable. Therefore, a person may not acquire 10% or more of our common shares without the prior approval of the applicable insurance regulators.

Investors may have difficulty in serving process or enforcing judgments against us in the U.S.

We are a Bermuda company. In addition, certain of our officers and directors reside in countries outside the U.S. All or a substantial portion of our assets and the assets of these officers and directors are or may be located outside the U.S. Investors may have difficulty effecting service of process within the U.S. on our directors and officers who reside outside the U.S. or recovering against us or these directors and officers on judgments of U.S. courts based on civil liabilities provisions of the U.S. federal securities laws whether or not we appoint an agent in the U.S. to receive service of process.

Risks Related to Our Industry

The reinsurance and insurance businesses are historically cyclical and the pricing and terms for our products may decline, which would affect our profitability.

The reinsurance and insurance industries have historically been cyclical, characterized by periods of decreasing prices followed by periods of increasing prices. Reinsurers have experienced significant fluctuations in their results of operations due to numerous factors, including the frequency and severity of catastrophic events, perceptions of risk, levels of capacity, general economic conditions and underwriting results of other insurers and reinsurers. All of these factors may contribute to price declines generally in the reinsurance and insurance industries. Following an increase in capital in our industry after the 2005 catastrophe events and the subsequent period of substantial dislocation in the financial markets, the reinsurance and insurance markets experienced a prolonged period of generally softening markets.

Our catastrophe-exposed lines are affected significantly by volatile and unpredictable developments, including natural and man-made disasters. The occurrence, or nonoccurrence, of catastrophic events, the frequency and severity of which are inherently unpredictable, affects both industry results and consequently prevailing market prices of our products.

We expect premium rates and other terms and conditions of trade to vary in the future. If demand for our products falls or the supply of competing capacity rises, our prospects for potential growth, due in part to our disciplined approach to underwriting, may be adversely affected. In particular, we might lose existing customers or suffer a decline in business, which we might not regain when industry conditions improve.

Recent or future U.S. federal or state legislation may impact the private markets and decrease the demand for our property reinsurance products, which would adversely affect our business and results of operations.

Legislation adversely impacting the private markets could be enacted on a state, regional or federal level. In the past, federal bills have been proposed in Congress which would, if enacted, create a federal reinsurance backstop or guarantee mechanism for catastrophic risks, including those we currently insure and reinsure in the private markets. These measures were not enacted by Congress; however, new bills to create a federal catastrophe reinsurance program to back up state insurance or reinsurance programs, or to establish other similar or analogous funding mechanisms or structures, may be introduced. We believe that such legislation, if enacted, could contribute to the growth, creation or alteration of state insurance entities in a manner that would be adverse to us and to market participants more generally. If enacted, bills of this nature would likely further erode the role of private market catastrophe reinsurers and could adversely

impact our financial results, perhaps materially. Moreover, we believe that numerous modeled potential catastrophes could exceed the actual or politically acceptable bonded capacity of Citizens Property Insurance Corporation ("Citizens") and of the Florida Hurricane Catastrophe Fund ("FHCF"). This could lead either to a severe dislocation or the necessity of federal intervention in the Florida market, either of which would adversely impact the private insurance and reinsurance industry.

From time to time, the state of Florida has enacted legislation altering the size and the terms and operations of the FHCF and the state sponsored insurer, Citizens. For example, in 2007 legislation expanded the FHCF's provision of below-market rate reinsurance to up to \$28.0 billion per season and expanded the ability of Citizens to compete with private insurance companies and other companies that cede business to us, which reduced the role of the private insurance and reinsurance markets in Florida. Much of the impact of the 2007 legislation was repealed over time. At this time, we cannot assess the likelihood of other related legislation passing, or the precise impact on us, our clients or the market should any such legislation be adopted. Because we are one of the largest providers of catastrophe-exposed coverage globally and in Florida, adverse legislation such as the 2007 bill, or the weakened financial position of Florida insurers which resulted in 2007 and could result from future legislation or other occurrences, may have a greater adverse impact on us than it would on other reinsurance market participants. In addition, other states, particularly those with Atlantic or Gulf Coast exposures or seismic exposures (such as California), may enact new or expanded legislation based on the prior Florida legislation, or otherwise, that would diminish aggregate private market demand for our products.

See "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Current Outlook, Legislative and Regulatory Update" for further information.

Consolidation in the (re)insurance industry could adversely impact us.

The (re)insurance industry, including our competitors, customers and insurance and reinsurance brokers, has seen significant consolidation over the last several years. Should the market continue to consolidate, there can be no assurance we would remain a leading reinsurer. These consolidated client and competitor enterprises may try to use their enhanced market power to negotiate price reductions for our products and services and/or obtain a larger market share through increased line sizes. If competitive pressures reduce our prices, we would generally expect to reduce our future underwriting activities, resulting in reduced premiums and a reduction in expected earnings. As the insurance industry consolidates, competition for customers becomes more intense and sourcing and properly servicing each customer become even more important. We could incur greater expenses relating to customer acquisition and retention, further reducing our operating margins. In addition, insurance companies that merge may be able to spread their risks across a consolidated, larger capital base so that they require less reinsurance. The number of companies offering retrocessional reinsurance may decline. Reinsurance intermediaries could also continue to consolidate, potentially adversely impacting our ability to access business and distribute our products. We could also experience more robust competition from larger, better capitalized competitors. Any of the foregoing could adversely affect our business or our results of operations.

We operate in a highly competitive environment.

The reinsurance industry is highly competitive. We compete, and will continue to compete, with major U.S. and non-U.S. insurers and reinsurers, including other Bermuda-based reinsurers. Many of our competitors have greater financial, marketing and management resources than we do. Historically, periods of increased capacity levels in our industry have led to increased competition and decreased prices for our products.

In recent years, pension funds, endowments, investment banks, investment managers, exchanges, hedge funds and other capital markets participants have been active in the reinsurance market and markets for related risks, either through the formation of reinsurance companies or the use of other financial products intended to compete with traditional reinsurance. We may also face competition from non-traditional competitors, such as technology companies, Insurtech start-up companies and others, who aim to leverage their access to "big data," artificial intelligence or other emerging technologies. In order to maintain a competitive position, we must continue to invest in new technologies and new ways to deliver our products and services.

We expect competition from these sources and others to continue to increase over time. It is possible that such new or alternative capital could cause reductions in prices of our products, or reduce the duration or amplitude of attractive portions of the historical market cycles. New entrants or existing competitors may

attempt to replicate all or part of our business model and provide further competition in the markets in which we participate. Moreover, government-backed entities increasingly represent competition for the coverages we provide directly or for the business of our customers, reducing the potential amount of third-party private protection our clients might need or desire. To the extent that industry pricing of our products does not meet our hurdle rate, we would generally expect to reduce our future underwriting activities, thus resulting in reduced premiums and a reduction in expected earnings. We are unable to predict the extent to which the foregoing or other new, proposed or potential initiatives may affect the demand for our products or the risks for which we seek to provide coverage.

Other political, regulatory and industry initiatives by state and international authorities could adversely affect our business.

The insurance and reinsurance regulatory framework is subject to heavy scrutiny by the U.S. and individual state governments, as well as an increasing number of international authorities, and we believe it is likely there will be increased regulatory intervention in our industry in the future. For example, the U.S. federal government has increased its scrutiny of the insurance regulatory framework in recent years (including as specifically addressed in the Dodd-Frank Act), and some states, including Maryland and New York, have enacted laws that increase state regulation of insurance and reinsurance companies and holding companies. Moreover, the NAIC, which is an association of the insurance commissioners of all 50 states and the District of Columbia, and state insurance regulators regularly reexamine existing laws and regulations. We could also be adversely affected by proposals or enacted legislation to expand the scope of coverage under existing policies for perils such as hurricanes or earthquakes or for a pandemic disease outbreak, mandate the terms of insurance and reinsurance policies, expand the scope of the FIO or establish a new federal insurance regulator, revise laws, regulations, or contracts under which we operate, disproportionately benefit the companies of one country over those of another or repeal or diminish the insurance company antitrust exemption from the McCarran Ferguson Act. Our jurisdiction of Bermuda is also subject to increasing scrutiny by political bodies outside of Bermuda, including the EU Code of Conduct Group. See *“The OECD and the EU may pursue measures that might increase our taxes and reduce our net income and increase our reporting requirements.”*

Due to this increased legislative and regulatory scrutiny of the reinsurance industry and Bermuda, our cost of compliance with applicable laws may increase, which could result in a decrease to both our profitability and the amount of time that our senior management allocates to running our day-to-day operations.

Further, as we continue to expand our business operations to different regions of the world outside of Bermuda, we are increasingly subject to new and additional regulations with respect to our operations, including, for example, laws relating to anti-corruption and anti-bribery, which have received increased scrutiny in recent years.

The results of the 2020 U.S. presidential election could have further impacts on our industry if new legislative or regulatory reforms are adopted. We are unable to predict at this time the effect of any such reforms.

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

We must comply with all applicable economic sanctions and anti-bribery laws and regulations of the U.S. and other jurisdictions. U.S. laws and regulations that may be applicable to us in certain circumstances include the economic trade sanctions laws and regulations administered by the U.S. Treasury’s Office of Foreign Assets Control as well as certain laws administered by the U.S. Department of State. The sanctions laws and regulations of non-U.S. jurisdictions in which we operate may differ to some degree from those of the U.S. and these differences may additionally expose us to sanctions violations. In addition, we are subject to the Foreign Corrupt Practices Act and other anti-bribery laws that generally prohibit corrupt payments or improper gifts to non-U.S. governments or officials. Although we have policies and controls in place that are designed to ensure compliance with these laws and regulations, it is possible that an employee or intermediary could fail to comply with applicable laws and regulations. In such event, we could be exposed to civil penalties, criminal penalties and other sanctions, including fines 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 adversely affect our financial condition and results of operations.

Increasing barriers to free trade and the free flow of capital could adversely affect the reinsurance industry and our business.

Recent political initiatives to restrict free trade and close markets, such as Brexit (as defined below) and the Trump administration's decision to withdraw from the Trans-Pacific partnership and potentially renegotiate or terminate existing bilateral and multilateral trade arrangements, could adversely affect the reinsurance industry and our business. The reinsurance industry is disproportionately impacted by restraints on the free flow of capital and risk because the value it provides depends on our ability to globally diversify risk.

Internationally, restrictions on the writing of reinsurance by foreign companies and government intervention in the natural catastrophe market could reduce market opportunities for our customers and adversely impact us.

Internationally, many countries with fast growing economies, such as China and India, continue to impose significant restrictions on the writing of reinsurance by foreign companies. In addition, in the wake of recent large natural catastrophes, a number of proposals have been introduced to alter the financing of natural catastrophes in several of the markets in which we operate. For example, the Thailand government has announced it is studying proposals for a natural catastrophe fund, under which the government would provide coverage for natural disasters in excess of an industry retention and below a certain limit, after which private reinsurers would continue to participate. The government of the Philippines has announced that it is considering similar proposals. Indonesia's financial services authority has announced a proposal to increase the amount of insurance business placed with domestic reinsurers. A range of proposals from varying stakeholders have been reported to have been made to alter the current regimes for insuring flood risk in the U.K., flood risk in Australia and earthquake risk in New Zealand. If these proposals are enacted and reduce market opportunities for our clients or for the reinsurance industry, we could be adversely impacted. See "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Current Outlook, Legislative and Regulatory Update" for further information.

The OECD and the EU may pursue measures that might increase our taxes and reduce our net income and increase our reporting requirements.

The OECD has published reports and launched a global dialog among member and non-member countries on measures to limit harmful tax competition. These measures are largely directed at counteracting the effects of jurisdictions perceived by the OECD to be tax havens or offering preferential tax regimes. The OECD has not listed Bermuda as an uncooperative tax haven jurisdiction because Bermuda has committed to eliminating harmful tax practices and to embracing international tax standards for transparency, exchange of information and the elimination of any aspects of the regimes for financial and other services that attract business with no substantial domestic activity. We are not able to predict what changes will arise from the commitment to the OECD or whether such changes will subject us to additional taxes. In 2017, the EU initiated similar measures and identified certain jurisdictions, including Bermuda, which it considered had tax systems that facilitated offshore structuring by attracting profits without commensurate economic activity. The EU did temporarily add Bermuda to its "blacklist" of non-cooperative jurisdictions for tax purposes between March 2019 and May 2019, when Bermuda adopted economic substance legislation that the EU deemed compliant with its requirements. There were no immediate regulatory, tax, trade or other legal impacts to RenaissanceRe, but we are not able to predict future EU actions.

In addition, in 2015, the OECD published its final series of Base Erosion and Profit Shifting ("BEPS") reports related to its attempt to coordinate multilateral action on international tax rules. The actions proposed in the BEPS report include an examination of the definition of a "permanent establishment" and the rules for attributing profit to a permanent establishment, tightening up transfer pricing rules to ensure that outcomes are in line with value creation, neutralizing the effect of hybrid financial instruments and limiting the deductibility of interest costs of tax purposes. Any changes in the tax law of an OECD member state in response to the BEPS reports and recommendations could subject us to additional taxes.

In May 2019, the OECD published a "Programme of Work," divided into two pillars, which is designed to address the tax challenges created by an increasing digitalized economy. Pillar One addresses the broader challenge of a digitalized economy and focuses on the allocation of group profits among taxing jurisdictions based on a market-based concept rather than historical "permanent establishment" concepts. Pillar Two addresses the remaining BEPS risk of profit shifting to entities in low tax jurisdictions by introducing a global minimum tax and a proposed tax on base eroding payments, which would operate through a denial of a

deduction or imposition of source-based taxation (including withholding tax) on certain payments. The OECD expects to reach agreement on key policy issues by July 2020, with a final proposal to be agreed to by the participating members by the end of 2020 and incorporated into local jurisdiction tax laws and treaties sometime shortly thereafter. To date, the proposal has been written broadly enough to potentially apply to our group's activities, and we are unable to determine at this time whether it would have a material adverse impact on our operations and results.

The vote by the U.K. to leave the EU ("Brexit") could adversely affect our business.

The U.K. left the EU on January 31, 2020 pursuant to the terms of a withdrawal agreement concluded between the U.K. government and the EU Council (the "Withdrawal Agreement"). The Withdrawal Agreement allows for a transition period during which the U.K.'s trading relationship with the EU will remain largely unchanged. This transition period is due to end on December 31, 2020. During the transition period, the U.K. and the EU will continue to negotiate the terms of their ongoing relationship. However, uncertainty remains over the U.K.'s future relationship with the EU after 2020. 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 political, regulatory, economic or market conditions in the U.K. and in Europe and it 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 U.K. insurance market to transact business in EU countries. To mitigate against the risks of Brexit our Lloyd's syndicate, RenaissanceRe Syndicate 1458, utilizes the Lloyd's Brussels Subsidiary through RSML. The Lloyd's Brussels Subsidiary is authorized and regulated by the National Bank of Belgium and regulated by the Financial Services and Markets Authority. Since January 1, 2019, the Lloyd's Brussels Subsidiary has written non-life risks placed in the Lloyd's market from European Economic Area countries.

In addition, uncertainties related 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.

Regulatory regimes and changes to accounting rules may adversely impact financial results irrespective of business operations.

Accounting standards and regulatory changes may require modifications to our accounting principles, both prospectively and for prior periods, and such changes could have an adverse impact on our financial results. Required modification of our existing principles, and new disclosure requirements, could have an impact on our results of operations and increase our expenses in order to implement and comply with any new requirements.

The preparation of our consolidated financial statements requires us to make many estimates and judgments.

The preparation of consolidated financial statements requires us to make many estimates and judgments that affect the reported amounts of assets, liabilities (including claims and claim expense reserves), shareholders' equity, revenues and expenses, and related disclosures. On an ongoing basis, we evaluate our estimates, including those related to premiums written and earned, our net claims and claim expenses, investment valuations, income taxes and those estimates used in our risk transfer analysis for reinsurance transactions. We base our estimates on historical experience, where possible, and on various other assumptions we believe to be reasonable under the circumstances, which form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Our judgments and estimates may not reflect our actual results. We utilize actuarial models as well as historical insurance industry loss development patterns to establish our claims and claim expense reserves. Actual claims and claim expenses paid may deviate, perhaps materially, from the estimates reflected in our financial statements. For more details on our estimates and judgments, see "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Critical Accounting Estimates."

Risks Related to RenaissanceRe Following the Acquisition of TMR

The continuing integration of RenaissanceRe and TMR following the acquisition of TMR may present significant challenges and costs.

We may face significant challenges, including technical, accounting and other challenges, in completing the combination of our operations and that of TMR. We acquired TMR because we believe the acquisition will be beneficial to us and our shareholders and accelerate our existing strategy. Achieving the anticipated benefits of the acquisition of TMR will depend in part upon whether we will be successful in completing the integration of TMR's businesses in a timely and efficient manner. We may not be able to accomplish this integration process smoothly or successfully.

In particular, we are continuing to integrate processes, policies, procedures, operations, technologies and systems, including information technology and accounting and finance. Management has devoted, and will continue to devote, significant attention to this process, and any delays in completing the integration may adversely affect the combined company's ability to maintain relationships with customers, brokers, employees and other constituencies or our ability to achieve the anticipated benefits of the acquisition of TMR or could otherwise adversely affect our business and financial results after the acquisition of TMR.

In addition, we have and will continue to incur integration and restructuring costs as a result of the acquisition of TMR as we integrate the businesses of TMR. Although we expect that the realization of efficiencies related to the integration of the businesses will offset incremental transaction, integration and restructuring costs over time, we cannot give any assurance that this net benefit will be achieved at any time in the future, if at all.

Our future results will suffer if we do not effectively manage our expanded operations following the acquisition of TMR.

We may continue to expand our operations, and our future success depends, in part, upon our ability to manage our expansion opportunities, which pose numerous risks and uncertainties, including the need to integrate the operations and business of TMR into our existing business in an efficient and timely manner, to combine systems and management controls and to integrate relationships with customers, vendors and business partners.

TMR's counterparties to contracts and arrangements may choose to terminate their contracts with us following the acquisition of TMR, which could negatively affect us.

Many of TMR's reinsurance contracts, as well as most of our reinsurance and insurance contracts, renew annually. It is possible that some reinsurance cedants or policyholders may choose not to renew these contracts with us following the acquisition of TMR.

Termination of in-force contracts or failure to renew reinsurance or insurance agreements and policies by contractual counterparties could adversely affect the benefits to be received by us from TMR's contractual arrangements. If the benefits from these arrangements are less than expected, including as a result of these arrangements being terminated, determined to be unenforceable, in whole or in part, or the counterparties to such arrangements failing to satisfy their obligations thereunder, the benefits of the acquisition of TMR to us may be significantly less than anticipated.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We lease office space in Bermuda, which houses our headquarters and principal executive offices, as well as in other locations throughout the U.S. and in the U.K., Australia, Ireland, Singapore and Switzerland. While we believe that our current office space is sufficient for us to conduct our operations, we may expand into additional facilities and new locations to accommodate future growth. To date, the cost of acquiring and maintaining our office space has not been material to us as a whole.

ITEM 3. LEGAL PROCEEDINGS

We and our subsidiaries are 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 or contracts or direct surplus lines insurance policies. In our industry, business litigation may involve allegations of underwriting or claims-handling errors or misconduct, disputes relating to the scope of, or compliance with, the terms of delegated underwriting agreements, employment claims, regulatory actions or disputes arising from our business ventures. Our operating subsidiaries are subject to claims litigation involving, among other things, disputed interpretations of policy coverages. Generally, our direct surplus lines insurance operations are subject to greater frequency and diversity of claims and claims-related litigation than our reinsurance operations and, in some jurisdictions, may be subject to direct actions by allegedly injured persons or entities seeking damages from policyholders. These lawsuits involving or arising out of claims on policies issued by our subsidiaries, which are typical to the insurance industry in general and in the normal course of business, are considered in our loss and loss expense reserves which are discussed in its loss reserves discussion. In addition, we may from time to time engage in litigation or arbitration related to claims for payment in respect of ceded reinsurance, including disputes that challenge our ability to enforce our underwriting intent. Such matters could result, directly or indirectly, in providers of protection not meeting their obligations to us or not doing so on a timely basis. We may also be subject to other disputes from time to time, relating to operational or other matters distinct from insurance or reinsurance claims. Any litigation, arbitration or regulatory process contains an element of uncertainty, and, accordingly, the value of an exposure or a gain contingency related to a dispute is difficult to estimate. Currently, we believe that no individual litigation or arbitration to which we are presently a party is likely to have a material adverse effect on our financial condition, business or operations.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER REPURCHASES OF EQUITY SECURITIES

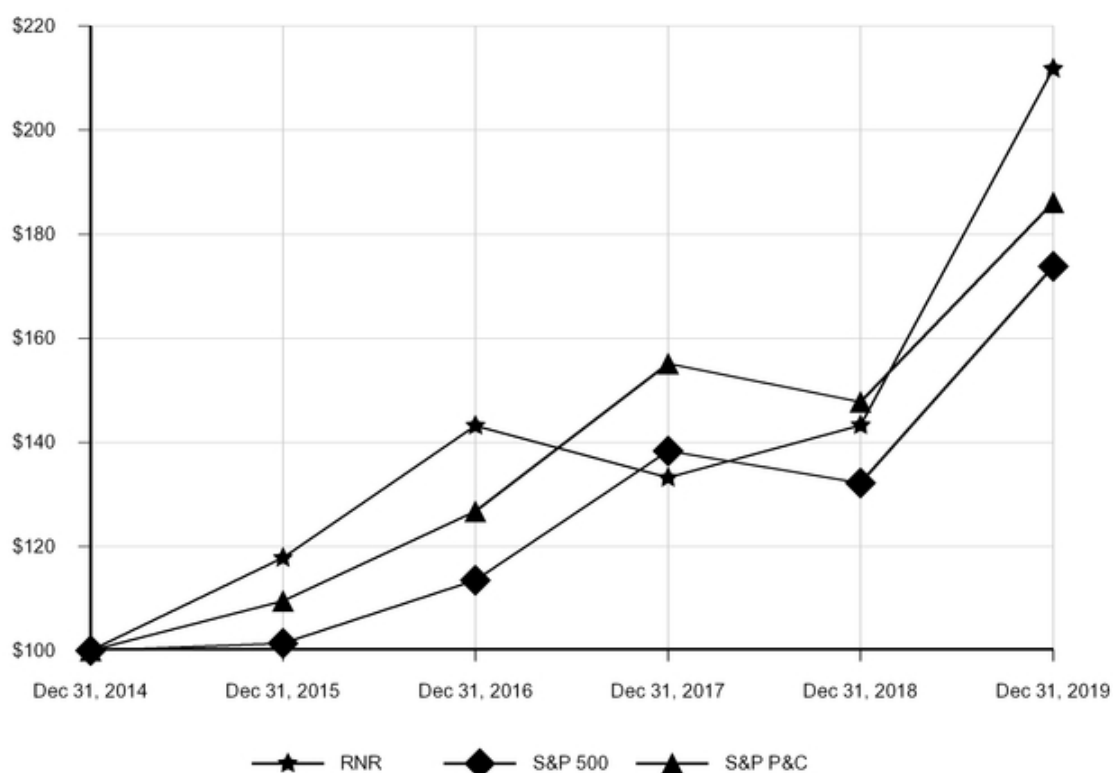
MARKET INFORMATION AND NUMBER OF HOLDERS

Our common shares are listed on the NYSE under the symbol "RNR." On February 3, 2020, there were 108 holders of record of our common shares.

PERFORMANCE GRAPH

The following graph compares the cumulative return on our common shares, including reinvestment of our dividends on our common shares, to such return for the S&P 500 Composite Stock Price Index ("S&P 500") and S&P's Property-Casualty Industry Group Stock Price Index ("S&P P&C"), for the five-year period commencing December 31, 2014 and ending December 31, 2019, assuming \$100 was invested on December 31, 2014. Each measurement point on the graph below represents the cumulative shareholder return as measured by the last sale price at the end of each calendar year during the period from January 1, 2015 through December 31, 2019. As depicted in the graph below, during this period, the cumulative return was (1) 111.8% on our common shares; (2) 73.8% for the S&P 500; and (3) 86.1% for the S&P P&C.

COMPARISON OF FIVE YEAR CUMULATIVE TOTAL RETURN



ISSUER REPURCHASES OF EQUITY SECURITIES

Our share repurchase program may be effected from time to time, depending on market conditions and other factors, through open market purchases and privately negotiated transactions. On November 10, 2017, our Board of Directors approved a renewal of our authorized share repurchase program to an aggregate amount of up to \$500.0 million. Unless terminated earlier by our Board of Directors, the program will expire when we have repurchased the full value of the shares authorized. The table below details the repurchases that were made under the program during the three months ended December 31, 2019, and also includes other shares purchased, which represents common shares surrendered by employees in respect of withholding tax obligations on the vesting of restricted stock or in lieu of cash payments for the exercise price of employee stock options.

	Total shares purchased		Other shares purchased		Shares purchased under repurchase program		Dollar amount still available under repurchase program
	Shares purchased	Average price per share	Shares purchased	Average price per share	Shares purchased	Average price per share	
							(in millions)
Beginning dollar amount available to be repurchased							\$ 500.0
October 1 - 31, 2019	—	\$ —	—	\$ —	—	\$ —	—
November 1 - 30, 2019	131	\$ 186.22	131	\$ 186.22	—	\$ —	—
December 1 - 31, 2019	2,847	\$ 196.02	2,847	\$ 196.02	—	\$ —	—
Total	2,978	\$ 195.59	2,978	\$ 195.59	—	\$ —	\$ 500.0

During 2019, we did not repurchase any of our common shares under our authorized share repurchase program. In the future, we may authorize additional purchase activities under the currently authorized share repurchase program, increase the amount authorized under the share repurchase program, or adopt additional trading plans.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following tables set forth our selected consolidated financial data and other financial information at the end of and for each of the years in the five-year period ended December 31, 2019. The results of Platinum are included in our consolidated financial data from March 2, 2015. The results of TMR are included in our consolidated financial data from March 22, 2019. The selected consolidated financial data should be read in conjunction with our consolidated financial statements and related notes thereto and “Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations” of this Form 10-K.

Year ended December 31, (in thousands, except share and per share data and percentages)	2019	2018	2017	2016	2015
Statements of Operations Data:					
Gross premiums written	\$ 4,807,750	\$ 3,310,427	\$ 2,797,540	\$ 2,374,576	\$ 2,011,310
Net premiums written	3,381,493	2,131,902	1,871,325	1,535,312	1,416,183
Net premiums earned	3,338,403	1,976,129	1,717,575	1,403,430	1,400,551
Net investment income	423,833	261,866	222,209	181,726	152,567
Net realized and unrealized gains (losses) on investments	414,483	(175,069)	135,822	141,328	(68,918)
Net claims and claim expenses incurred	2,097,021	1,120,018	1,861,428	530,831	448,238
Acquisition expenses	762,232	432,989	346,892	289,323	238,592
Operational expenses	222,733	178,267	160,778	197,749	219,112
Underwriting income (loss)	256,417	244,855	(651,523)	385,527	494,609
Net income (loss)	950,267	268,917	(354,671)	630,048	542,242
Net income (loss) available (attributable) to RenaissanceRe common shareholders	712,042	197,276	(244,770)	480,581	408,811
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	16.29	4.91	(6.15)	11.43	9.28
Dividends per common share	1.36	1.32	1.28	1.24	1.20
Weighted average common shares outstanding – diluted	43,175	39,755	39,854	41,559	43,526
Return on average common equity	14.1%	4.7%	(5.7)%	11.0%	9.8%
Combined ratio	92.3%	87.6%	137.9 %	72.5%	64.7%
At December 31,	2019	2018	2017	2016	2015
Balance Sheet Data:					
Total investments	\$ 17,368,789	\$ 11,885,747	\$ 9,503,439	\$ 9,316,968	\$ 8,999,068
Total assets	26,330,094	18,676,196	15,226,131	12,352,082	11,555,287
Reserve for claims and claim expenses	9,384,349	6,076,271	5,080,408	2,848,294	2,767,045
Unearned premiums	2,530,975	1,716,021	1,477,609	1,231,573	889,102
Debt	1,384,105	991,127	989,623	948,663	960,495
Capital leases	25,072	25,853	26,387	26,073	26,463
Preference shares	650,000	650,000	400,000	400,000	400,000
Total shareholders' equity attributable to RenaissanceRe	5,971,367	5,045,080	4,391,375	4,866,577	4,732,184
Common shares outstanding	44,148	42,207	40,024	41,187	43,701
Book value per common share	\$ 120.53	\$ 104.13	\$ 99.72	\$ 108.45	\$ 99.13
Accumulated dividends	20.68	19.32	18.00	16.72	15.48
Book value per common share plus accumulated dividends	\$ 141.21	\$ 123.45	\$ 117.72	\$ 125.17	\$ 114.61
Change in book value per common share plus change in accumulated dividends	17.1%	5.7%	(6.9)%	10.7%	11.3%

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

The following is a discussion and analysis of our results of operations for 2019 compared to 2018 and 2018 compared to 2017, respectively as well as our liquidity and capital resources at December 31, 2019. This discussion and analysis should be read in conjunction with the audited consolidated financial statements and notes thereto included in this filing. This filing contains forward-looking statements that involve risks and uncertainties. Actual results may differ materially from the results described or implied by these forward-looking statements. See "Note on Forward-Looking Statements."

On March 22, 2019, we acquired TMR, including RenaissanceRe Europe, RenaissanceRe UK and their subsidiaries. As a result of the acquisition, each of the TMR entities became our wholly owned subsidiary. We accounted for the acquisition of TMR under the acquisition method of accounting in accordance with FASB Accounting Standards Codification ("ASC") Topic *Business Combinations*.

Our results of operations and financial condition for 2019 include TMR for the period from March 22, 2019 through December 31, 2019. The following discussion and analysis of our results of operations for 2019, compared to 2018, as well as our liquidity and capital resources at December 31, 2019, should be read in that context. In addition, the results of operations for 2019 and financial condition at December 31, 2019 may not be reflective of the ultimate ongoing business of the combined entities.

Refer to "Note 3. Acquisition of Tokio Millennium Re" in our "Notes to the Consolidated Financial Statements" for additional information with respect to the acquisition of TMR.

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OVERVIEW

RenaissanceRe is a global provider of reinsurance and insurance. We provide property, casualty and specialty reinsurance and certain insurance solutions to customers, principally through intermediaries. Established in 1993, we have offices in Bermuda, Australia, Ireland, Singapore, Switzerland, the U.K. and the U.S. Our operating subsidiaries include Renaissance Reinsurance, Renaissance Reinsurance U.S., RenaissanceRe Specialty U.S. Ltd., RenaissanceRe Europe, RenaissanceRe UK, Renaissance Reinsurance of Europe and Syndicate 1458. We also underwrite reinsurance on behalf of joint ventures, including DaVinci, Fibonacci Re, Top Layer Re, Upsilon RFO and Vermeer. In addition, through Medici, we invest in various insurance based investment instruments that have returns primarily tied to property catastrophe risk.

We aspire to be the world's best underwriter by matching well-structured risks with efficient sources of capital and our mission is to produce superior returns for our shareholders over the long term. We seek to accomplish these goals by being a trusted, long-term partner to our customers for assessing and managing risk, delivering responsive and innovative solutions, leveraging our core capabilities of risk assessment and information management, investing in these core capabilities in order to serve our customers across market cycles, and keeping our promises. Our strategy focuses on superior risk selection, superior customer relationships and superior capital management. We provide value to our customers and joint venture partners in the form of financial security, innovative products, and responsive service. We are known as a leader in paying valid claims promptly. We principally measure our financial success through long-term growth in tangible book value per common share plus the change in accumulated dividends, which we believe is the most appropriate measure of our financial performance, and in respect of which we believe we have delivered superior performance over time.

Our core products include property, casualty and specialty reinsurance, and certain insurance products principally distributed through intermediaries, with whom we have cultivated strong long-term relationships. We believe we have been one of the world's leading providers of catastrophe reinsurance since our founding. In recent years, through the strategic execution of several initiatives, including organic growth and acquisitions, we have expanded and diversified our casualty and specialty platform and products and believe we are a leader in certain casualty and specialty lines of business. We have determined our business consists of the following reportable segments: (1) Property, which is comprised of catastrophe and other property reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit, and (2) Casualty and Specialty, which is comprised of casualty and specialty reinsurance and insurance written on behalf of our operating subsidiaries and certain joint ventures managed by our ventures unit. We also pursue a number of other opportunities through our ventures unit, which has responsibility for creating and managing our joint ventures, executing customized reinsurance transactions to assume or cede risk, and managing certain strategic investments directed at classes of risk other than catastrophe reinsurance. From time to time we consider diversification into new ventures, either through organic growth, the formation of new joint ventures, or the acquisition of, or the investment in, other companies or books of business of other companies.

To best serve our clients in the places they do business, we have operating subsidiaries, branches, joint ventures and underwriting platforms around the world, including DaVinci, Fibonacci Re, Renaissance Reinsurance, Top Layer Re, Upsilon RFO and Vermeer in Bermuda, Renaissance Reinsurance U.S. in the U.S., Syndicate 1458 in the U.K. and RenaissanceRe Europe in Switzerland, which has branches in Australia, Bermuda, the U.K. and the U.S. We write property and casualty and specialty reinsurance through our wholly owned operating subsidiaries, joint ventures and Syndicate 1458 and certain insurance products primarily through Syndicate 1458. Syndicate 1458 provides us with access to Lloyd's extensive distribution network and worldwide licenses and also writes business through delegated authority arrangements. The underwriting results of our operating subsidiaries and underwriting platforms are included in our Property and Casualty and Specialty segment results as appropriate.

Since a meaningful portion of the reinsurance and insurance we write provides protection from damages relating to natural and man-made catastrophes, our results depend to a large extent on the frequency and severity of such catastrophic events, and the coverages we offer to customers affected by these events. We are exposed to significant losses from these catastrophic events and other exposures we cover. Accordingly, we expect a significant degree of volatility in our financial results and our financial results may vary significantly from quarter-to-quarter and from year-to-year, based on the level of insured catastrophic

losses occurring around the world. We view our exposure to casualty and specialty lines of business as an efficient use of capital given these risks are generally less correlated with our property lines of business. This has allowed us to bring additional capacity to our clients, across a wider range of product offerings, while continuing to be good stewards of our shareholders' capital.

We continually explore appropriate and efficient ways to address the risk needs of our clients and the impact of various regulatory and legislative changes on our operations. We have created and managed, and continue to manage, multiple capital vehicles across several jurisdictions and may create additional risk bearing vehicles or enter into additional jurisdictions in the future. In addition, our differentiated strategy and capabilities position us to pursue bespoke or large solutions for clients, which may be non-recurring. This, and other factors including the timing of contract inception, could result in significant volatility of premiums in both our Property and Casualty and Specialty segments. As our product and geographical diversity increases, we may be exposed to new risks, uncertainties and sources of volatility.

Our revenues are principally derived from three sources: (1) net premiums earned from the reinsurance and insurance policies we sell; (2) net investment income and realized and unrealized gains from the investment of our capital funds and the investment of the cash we receive on the policies which we sell; and (3) fees and other income received from our joint ventures, advisory services and various other items.

Our expenses primarily consist of: (1) net claims and claim expenses incurred on the policies of reinsurance and insurance we sell; (2) acquisition costs which typically represent a percentage of the premiums we write; (3) operating expenses which primarily consist of personnel expenses, rent and other operating expenses; (4) corporate expenses which include certain executive, legal and consulting expenses, costs for research and development, transaction and integration-related expenses, and other miscellaneous costs, including those associated with operating as a publicly traded company; (5) redeemable noncontrolling interests, which represent the interests of third parties with respect to the net income of DaVinciRe, Medici and Vermeer; and (6) interest and dividend costs related to our debt and preference shares. We are also subject to taxes in certain jurisdictions in which we operate. Since the majority of our income is currently earned in Bermuda, which does not have a corporate income tax, the tax impact to our operations has historically been minimal. In the future, our net tax exposure may increase as our operations expand geographically, or as a result of adverse tax developments.

The underwriting results of an insurance or reinsurance company are discussed frequently by reference to its net claims and claim expense ratio, underwriting expense ratio, and combined ratio. The net claims and claim expense ratio is calculated by dividing net claims and claim expenses incurred by net premiums earned. The underwriting expense ratio is calculated by dividing underwriting expenses (acquisition expenses and operational expenses) by net premiums earned. The combined ratio is the sum of the net claims and claim expense ratio and the underwriting expense ratio. A combined ratio below 100% indicates profitable underwriting prior to the consideration of investment income. A combined ratio over 100% indicates unprofitable underwriting prior to the consideration of investment income. We also discuss our net claims and claim expense ratio on a current accident year basis and a prior accident years basis. The current accident year net claims and claim expense ratio is calculated by taking current accident year net claims and claim expenses incurred, divided by net premiums earned. The prior accident years net claims and claim expense ratio is calculated by taking prior accident years net claims and claim expenses incurred, divided by net premiums earned.

SUMMARY OF CRITICAL ACCOUNTING ESTIMATES

Claims and Claim Expense Reserves

General Description

We believe the most significant accounting judgment made by management is our estimate of claims and claim expense reserves. Claims and claim expense reserves represent estimates, including actuarial and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts we sell. We establish our claims and claim expense reserves by taking case reserves, adding estimates for IBNR and, if deemed necessary, adding costs for additional case reserves which represent our estimates for claims related to specific contracts which we believe may not be adequately estimated by the client as of that date, or

adequately covered in the application of IBNR. Our reserving committee, which includes members of our senior management, reviews, discusses, and assesses the reasonableness and adequacy of the reserving estimates included in our audited financial statements.

In accordance with FASB ASC Topic *Business Combinations*, we allocated the total consideration paid for TMR among acquired assets and assumed liabilities based on their fair values. These assets and liabilities include TMR's claims and claim expense reserves, which totaled \$2.4 billion at March 22, 2019, and consisted of \$783.3 million and \$1.6 billion included in our Property and Casualty and Specialty segments, respectively.

The following table summarizes our claims and claim expense reserves by line of business, allocated between case reserves, additional case reserves and IBNR:

At December 31, 2019	Case Reserves	Additional Case Reserves	IBNR	Total
(in thousands)				
Property	\$ 1,253,406	\$ 1,631,223	\$ 1,189,221	\$ 4,073,850
Casualty and Specialty	1,596,426	129,720	3,583,913	5,310,059
Other	440	—	—	440
Total	\$ 2,850,272	\$ 1,760,943	\$ 4,773,134	\$ 9,384,349
At December 31, 2018				
(in thousands)				
Property	\$ 690,718	\$ 1,308,307	\$ 1,087,229	\$ 3,086,254
Casualty and Specialty	771,537	116,877	2,096,979	2,985,393
Other	1,458	—	3,166	4,624
Total	\$ 1,463,713	\$ 1,425,184	\$ 3,187,374	\$ 6,076,271

Activity in the liability for unpaid claims and claim expenses is summarized as follows:

Year ended December 31,	2019	2018	2017
(in thousands)			
Net reserves as of January 1	\$ 3,704,050	\$ 3,493,778	\$ 2,568,730
Net incurred related to:			
Current year	2,123,876	1,390,767	1,902,424
Prior years	(26,855)	(270,749)	(40,996)
Total net incurred	2,097,021	1,120,018	1,861,428
Net paid related to:			
Current year	265,649	391,061	450,527
Prior years	832,405	503,708	524,298
Total net paid	1,098,054	894,769	974,825
Amounts acquired (1)	1,858,775	—	—
Foreign exchange	31,260	(14,977)	38,445
Net reserves as of December 31	6,593,052	3,704,050	3,493,778
Reinsurance recoverable as of December 31	2,791,297	2,372,221	1,586,630
Gross reserves as of December 31	\$ 9,384,349	\$ 6,076,271	\$ 5,080,408

(1) Represents the fair value of TMR's reserves for claims and claim expenses, net of reinsurance recoverables, acquired at March 22, 2019.

The following table details our prior year development by segment of its liability for unpaid claims and claim expenses:

Year ended December 31, (in thousands)	2019	2018	2017
	(Favorable) adverse development	(Favorable) adverse development	(Favorable) adverse development
Property	\$ (2,933)	\$ (221,290)	\$ (45,596)
Casualty and Specialty	(23,882)	(49,262)	6,183
Other	(40)	(197)	(1,583)
Total favorable development of prior accident years net claims and claim expenses	<u>\$ (26,855)</u>	<u>\$ (270,749)</u>	<u>\$ (40,996)</u>

Our reserving methodology for each line of business uses a loss reserving process that calculates a point estimate for our ultimate settlement and administration costs for claims and claim expenses. We do not calculate a range of estimates and do not discount any of our reserves for claims and claim expenses. We use this point estimate, along with paid claims and case reserves, to record our best estimate of additional case reserves and IBNR in our consolidated financial statements. Under GAAP, we are not permitted to establish estimates for catastrophe claims and claim expense reserves until an event occurs that gives rise to a loss.

Reserving for our reinsurance claims involves other uncertainties, such as the dependence on information from ceding companies, the time lag inherent in reporting information from the primary insurer to us or to our ceding companies, and differing reserving practices among ceding companies. The information received from ceding companies is typically in the form of bordereaux, broker notifications of loss and/or discussions with ceding companies or their brokers. This information may be received on a monthly, quarterly or transactional basis and normally includes paid claims and estimates of case reserves. We sometimes also receive an estimate or provision for IBNR. This information is often updated and adjusted from time to time during the loss settlement period as new data or facts in respect of initial claims, client accounts, industry or event trends may be reported or emerge in addition to changes in applicable statutory and case laws.

Our estimates of losses from large events are based on factors including currently available information derived from claims information from certain customers and brokers, industry assessments of losses from the events, proprietary models, and the terms and conditions of our contracts. The uncertainty of our estimates for large events is also impacted by the preliminary nature of the information available, the magnitude and relative infrequency of the events, the expected duration of the respective claims development period, inadequacies in the data provided to the relevant date by industry participants, the potential for further reporting lags or insufficiencies and, in certain cases, the form of the claims and legal issues under the relevant terms of insurance and reinsurance contracts. In addition, a significant portion of the net claims and claim expenses associated with certain large events can be concentrated with a few large clients and therefore the loss estimates for these events may vary significantly based on the claims experience of those clients. The contingent nature of business interruption and other exposures will also impact losses in a meaningful way, which we believe may give rise to significant complexity in respect of claims handling, claims adjustment and other coverage issues, over time. Given the magnitude of certain events, there can be meaningful uncertainty regarding total covered losses for the insurance industry and, accordingly, several of the key assumptions underlying our loss estimates. Loss reserve estimation in respect of our retrocessional contracts poses further challenges compared to directly assumed reinsurance. In addition, our actual net losses from these events may increase if our reinsurers or other obligors fail to meet their obligations.

Because of the inherent uncertainties discussed above, we have developed a reserving philosophy which attempts to incorporate prudent assumptions and estimates, and we have generally experienced favorable net development on prior accident years net claims and claim expenses in the last several years. However, there is no assurance that this favorable development on prior accident years net claims and claim expenses will occur in future periods.

Our reserving techniques, assumptions and processes differ among our Property and Casualty and Specialty segments. Refer to "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the

Consolidated Financial Statements" for more information on the risks we insure and reinsure, the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, prior year development of the reserve for claims and claim expenses, analysis of our incurred and paid claims development and claims duration information for each of our Property and Casualty and Specialty segments.

Property Segment

Actual Results vs. Initial Estimates

As discussed above, the key assumption in estimating reserves for our Property segment is our estimate of incurred claims and claim expenses. The table below shows our initial estimates of incurred claims and claim expenses for each accident year and how these initial estimates have developed over time. The initial estimate of accident year incurred claims and claim expenses represents our estimate of the ultimate settlement and administration costs for claims incurred in our Property segment occurring during a particular accident year, and as reported as of December 31 of that year. The re-estimated incurred claims and claim expenses as of December 31 of subsequent years, represent our revised estimates as reported as of those dates. Our most recent estimates as reported at December 31, 2019 differ from our initial accident year estimates and demonstrate that our initial estimate of incurred claims and claim expenses are reasonably likely to vary from our most recent estimate, perhaps significantly. Changes in this estimate will be recorded in the period in which they occur. In accident years where our current estimates are lower than our initial estimates, we have experienced favorable development while accident years where our current estimates are higher than our original estimates indicates adverse development. The table is presented on a net basis and, therefore, includes the benefit of reinsurance recoverable. In addition, we have included historical incurred claims and claim expenses development information related to Platinum and TMR in the table below. For incurred accident year claims denominated in foreign currency, we have used the current year-end balance sheet foreign exchange rate for all periods provided, thereby eliminating the effects of changes in foreign currency translation rates from the incurred accident year claims development information included in the table below.

The following table details our Property segment incurred claims and claim expenses, net of reinsurance, as of December 31, 2019.

(in thousands)	Incurred claims and claim expenses, net of reinsurance									
	For the year ended December 31,									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accident Year										
2010	\$ 720,159	\$ 681,287	\$ 636,962	\$ 657,719	\$ 691,473	\$ 696,844	\$ 706,258	\$ 708,343	\$ 681,435	\$ 731,179
2011	—	1,559,069	1,491,770	1,422,659	1,393,110	1,369,567	1,338,187	1,333,982	1,321,137	1,302,141
2012	—	—	559,946	429,425	395,203	375,098	356,310	344,535	336,719	331,865
2013	—	—	—	317,258	287,694	265,570	240,945	228,622	224,748	222,939
2014	—	—	—	—	306,731	283,608	270,618	265,820	264,754	265,229
2015	—	—	—	—	—	368,766	334,572	317,865	307,088	301,733
2016	—	—	—	—	—	—	445,532	458,525	443,135	432,269
2017	—	—	—	—	—	—	—	1,640,129	1,446,566	1,348,260
2018	—	—	—	—	—	—	—	—	945,829	1,054,884
2019	—	—	—	—	—	—	—	—	—	1,000,190
Total										\$ 6,990,689

Our initial and subsequent estimates of incurred claims and claim expenses are impacted by available information derived from claims information from certain customers and brokers, industry assessments of losses from the events, proprietary models, and the terms and conditions of our contracts. As described above, given the complexity in reserving for claims and claims expenses associated with property losses, and catastrophe excess of loss reinsurance contracts in particular, which make up a significant proportion of our Property segment, we have experienced development, both favorable and unfavorable, in any given accident year. For example, net claims and claim expenses associated with the 2017 accident year

have experienced favorable development. This is largely driven by reductions in estimated ultimate claims and claim expenses associated with Hurricanes Harvey, Irma and Maria, the Mexico City Earthquake, the wildfires in California during the fourth quarter of 2017 and certain losses associated with aggregate loss contracts (collectively, the "2017 Large Loss Events"). In comparison, net claims and claim expenses associated with 2018 accident year have experienced adverse development. The adverse development was driven by a deterioration in expected net claims and claim expenses as new and additional claims information was received associated with Typhoons Jebi, Mangkhut and Trami, Hurricane Florence, the wildfires in California during the third and fourth quarters of 2018, Hurricane Michael and certain losses associated with aggregate loss contracts (the "2018 Large Loss Events").

In accident years with a low level of insured catastrophe losses, our other property lines of business would contribute a greater proportion of our overall incurred claims and claim expenses within our Property segment, compared to years with a high level of insured catastrophe losses. Our other property lines of business tend to generate less volatility in future accident years and as such we would expect to see a slower more stable increase or decrease in estimated incurred net claims and claim expenses over time. However, certain of our other property contracts are exposed to catastrophe events, resulting in increased volatility of incurred claims and claim expenses driven by the occurrence of catastrophe events. In addition, volatility of the initial estimate associated with large catastrophe losses and the speed at which we settle claims can vary dramatically based on the type of event.

Sensitivity Analysis

The table below shows the impact on our gross reserve for claims and claim expenses, net income and shareholders' equity as of and for the year ended December 31, 2019 of a reasonable range of possible outcomes associated with our estimates of gross ultimate losses for claims and claim expenses incurred within our Property segment. The reasonable range of possible outcomes is based on a distribution of outcomes of our ultimate incurred claims and claim expenses from catastrophic events. In addition, we adjust the loss ratios and development curves in our other property lines of business in a similar fashion to the sensitivity analysis performed for our Casualty and Specialty segment, discussed in greater detail below. In general, our reserve for claims and claim expenses for more recent events are subject to greater uncertainty and, therefore, greater variability and are likely to experience material changes from one period to the next. This is due to the uncertainty as to the size of the industry losses from the event, which contracts have been exposed to the catastrophic event and the magnitude of claims incurred by our clients. As our claims age, more information becomes available and we believe our estimates become more certain, although there is no assurance this trend will continue in the future. As a result, the sensitivity analysis below is based on the age of each accident year, our current estimated incurred claims and claim expenses for the catastrophic events occurring in each accident year, and a reasonable range of possible outcomes of our current estimates of claims and claim expenses by accident year. The impact on net income and shareholders' equity assumes no increase or decrease in reinsurance recoveries, loss related premium or redeemable noncontrolling interest.

Property Claims and Claim Expense Reserve Sensitivity Analysis

(in thousands, except percentages)	Reserve for Claims and Claim Expenses at December 31, 2019	\$ Impact of Change Reserve for Claims and Claim Expenses at December 31, 2019	% Impact of Change on Reserve for Claims and Claim Expenses at December 31, 2019	% Impact of Change on Net Income for the Year Ended December 31, 2019	% Impact of Change on Shareholders' Equity at December 31, 2019
Higher	\$ 4,598,682	\$ 524,832	5.6 %	(55.2)%	(8.8)%
Recorded	4,073,850	—	— %	— %	— %
Lower	3,710,019	(363,831)	(3.9)%	38.3 %	6.1 %

We believe the changes we made to our estimated incurred claims and claim expenses represent a reasonable range of possible outcomes based on our experience to date and our future expectations. While we believe these are a reasonable range of possible outcomes, we do not believe the above sensitivity analysis should be considered an actuarial reserve range. Excluded from the impact on our reserves for claims and claim expenses, net income and shareholders' equity, in the table above, are reserves for claims and claim expenses associated with the TMR managed third-party capital vehicles as these reserves for claims and claim expenses are fully ceded and have no impact on our net income or shareholders' equity. In addition, the sensitivity analysis only reflects a reasonable range of possible outcomes in our underlying assumptions. It is possible that our estimated incurred claims and claim expenses could be significantly higher or lower than the sensitivity analysis described above. For example, we could be liable for events for which we have not estimated claims and claim expenses or for exposures we do not currently believe are covered under our policies. These changes could result in significantly larger changes to our estimated incurred claims and claim expenses, net income and shareholders' equity than those noted above, and could be recorded across multiple periods. We also caution that the above sensitivity analysis is not used by management in developing our reserve estimates and is also not used by management in managing the business.

Casualty and Specialty Segment

Actual Results vs. Initial Estimates

As discussed above, the key assumption in estimating reserves for our Casualty and Specialty segment is our estimate of incurred claims and claim expenses. Standard actuarial techniques are used to calculate the ultimate claims and claim expenses and two key assumptions include the estimated incurred claims and claim expenses ratio and the estimated loss reporting patterns. The table below shows our initial estimates of incurred claims and claim expenses for each accident year and how these initial estimates have developed over time. The initial estimate of accident year incurred claims and claim expenses represents our estimate of the ultimate settlement and administration costs for claims incurred in our Casualty and Specialty segment occurring during a particular accident year, and as reported as of December 31 of that year. The re-estimated incurred claims and claim expenses as of December 31 of subsequent years, represent our revised estimates as reported as of those dates. Our most recent estimates as reported at December 31, 2019 differ from our initial accident year estimates and demonstrate that our initial estimate of incurred claims and claim expenses are reasonably likely to vary from our most recent estimate, perhaps significantly. Changes in this estimate will be recorded in the period in which they occur. In accident years where our current estimates are lower than our initial estimates, we have experienced favorable development while accident years where our current estimates are higher than our original estimates indicates adverse development. The table is presented on a net basis and, therefore, includes the benefit of reinsurance recoverable. In addition, we have included historical incurred claims and claim expenses development information related to Platinum and TMR in the table below. For incurred accident year claims denominated in foreign currency, we have used the current year-end balance sheet foreign exchange rate for all periods provided, thereby eliminating the effects of changes in foreign currency translation rates from the incurred accident year claims development information included in the table below.

The following table details our Casualty and Specialty segment incurred claims and claim expenses, net of reinsurance, as of December 31, 2019.

(in thousands)	Incurred claims and claim expenses, net of reinsurance									
	For the year ended December 31,									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accident Year										
2010	\$ 411,733	\$ 423,754	\$ 411,785	\$ 375,622	\$ 354,254	\$ 340,881	\$ 339,232	\$ 335,222	\$ 334,105	\$ 321,752
2011	—	429,955	434,736	404,599	375,683	368,885	360,191	349,632	356,878	362,728
2012	—	—	578,072	592,243	562,936	552,340	535,671	549,633	564,330	575,347
2013	—	—	—	595,287	573,399	545,364	520,088	508,536	493,815	476,828
2014	—	—	—	—	718,082	714,298	719,432	700,982	683,510	688,675
2015	—	—	—	—	—	802,257	822,284	858,062	838,895	831,899
2016	—	—	—	—	—	—	955,919	1,000,242	988,866	994,306
2017	—	—	—	—	—	—	—	1,300,584	1,278,229	1,284,136
2018	—	—	—	—	—	—	—	—	1,253,151	1,283,407
2019	—	—	—	—	—	—	—	—	—	1,279,854
Total										\$ 8,098,932

As each underwriting year has developed, our estimated expected incurred claims and claim expenses have changed. As an example, our re-estimated incurred claims and claim expenses decreased for the 2013 accident year from the initial estimates. This decrease was principally driven by actual reported and paid net claims and claim expenses associated with the 2013 accident year coming in less than expected, which has resulted in a reduction in our expected ultimate claims and claim expense ratio for this accident year. In comparison, the 2018 accident year has developed adversely compared to our initial estimates of incurred claims and claim expenses and our current estimates are higher than our initial estimates. The increase in incurred claims and claim expenses for the 2018 accident year is due to reported losses higher than expected.

The reserving methodology for our Casualty and Specialty segment is weighted more heavily to our initial estimate in the early periods immediately following the contracts' inception through the use of the expected loss ratio method. The expected loss ratio method estimates the incurred losses by multiplying the initial expected loss ratio by the earned premium. Under the expected loss ratio method, no reliance is placed on the development of claims and claim expenses. The determination of when reported losses are sufficient and credible to warrant selection of an ultimate loss ratio different from the initial expected loss ratio also requires judgment. We generally make adjustments for reported loss experience indicating unfavorable variances from the initial expected loss ratio sooner than reported loss experience indicating favorable variances as reporting of losses in excess of expectations tends to have greater credibility than an absence of or lower than expected level of reported losses. Over time, as a greater number of claims are reported and the credibility of reported losses improves, actuarial estimates of IBNR are typically based on the Bornhuetter-Ferguson actuarial method. The Bornhuetter-Ferguson method places weight on claims and claim expenses development experience. If there is adverse development of prior accident years claims and claim expenses, we generally select the Bornhuetter-Ferguson method to ensure the claim experience is considered in the determination of our estimated claims and claim expenses with the associated business. If we believe we lack the claims experience in the early stages of development of a line of business, we may not select the Bornhuetter-Ferguson method until such time as we believe there is greater credibility in the level of reported losses. As prior accident years claims and claim expenses development experience becomes credible, the Bornhuetter-Ferguson method is generally selected which places greater weight on this experience as it develops. The Bornhuetter-Ferguson method estimates our expected ultimate claims and claim expenses by applying our initial estimated loss ratio to our undeveloped premium, and adding the reported losses to the estimate. The impact of these methodologies can be observed in the table above. For example, the 2014 accident year ultimate loss remained relatively consistent for the first two years of development (i.e., the years ended December 31, 2015 and 2016), before experiencing favorable development in years three and four (i.e., the years ended December 31, 2017 and 2018). This reflects the reserving methodology where we use the Bornhuetter-Ferguson method as the experience became more credible.

Sensitivity Analysis

The table below quantifies the impact on our gross reserves for claims and claim expenses, net income and shareholders' equity as of and for the year ended December 31, 2019 of a reasonable range of possible outcomes in the actuarial assumptions used to estimate our December 31, 2019 claims and claim expense reserves within our Casualty and Specialty segment. The table quantifies a reasonable range of possible outcomes in our initial estimated gross ultimate claims and claim expense ratios and estimated loss reporting patterns. The impact on net income and shareholders' equity assumes no increase or decrease in reinsurance recoveries, loss related premium or redeemable noncontrolling interest.

Casualty and Specialty Claims and Claim Expense Reserve Sensitivity Analysis

(in thousands, except percentages)	Estimated Loss Reporting Pattern	\$ Impact of Change on Reserves for Claims and Claim Expenses at December 31, 2019	% Impact of Change on Reserve for Claims and Claim Expenses at December 31, 2019	% Impact of Change on Net Income for the Year Ended December 31, 2019	% Impact of Change on Shareholders' Equity at December 31, 2019
Increase expected claims and claim expense ratio by 10%	Slower reporting	\$ 748,368	8.0 %	(78.8)%	(12.5)%
Increase expected claims and claim expense ratio by 10%	Expected reporting	405,659	4.3 %	(42.7)%	(6.8)%
Increase expected claims and claim expense ratio by 10%	Faster reporting	172,705	1.8 %	(18.2)%	(2.9)%
Expected claims and claim expense ratio	Slower reporting	306,798	3.3 %	(32.3)%	(5.1)%
Expected claims and claim expense ratio	Expected reporting	—	— %	— %	— %
Expected claims and claim expense ratio	Faster reporting	(208,570)	(2.2)%	21.9 %	3.5 %
Decrease expected claims and claim expense ratio by 10%	Slower reporting	(139,232)	(1.5)%	14.7 %	2.3 %
Decrease expected claims and claim expense ratio by 10%	Expected reporting	(410,623)	(4.4)%	43.2 %	6.9 %
Decrease expected claims and claim expense ratio by 10%	Faster reporting	(594,629)	(6.3)%	62.6 %	10.0 %

We believe that ultimate claims and claim expense ratios 10.0 percentage points above or below our estimated assumptions constitute a reasonable range of possible outcomes based on our experience to date and our future expectations. In addition, we believe that the adjustments we made to speed up or slow down our estimated loss reporting patterns represent a reasonable range of possible outcomes. While we believe these are a reasonable range of possible outcomes, we do not believe the above sensitivity analysis should be considered an actuarial reserve range. In addition, the sensitivity analysis only reflects a reasonable range of possible outcomes in our underlying assumptions. It is possible that our initial estimated claims and claim expense ratios and loss reporting patterns could be significantly different from the sensitivity analysis described above. For example, we could be liable for events that we have not estimated reserves for, or for exposures we do not currently believe are covered under our contracts. These changes could result in significantly larger changes to reserves for claims and claim expenses, net income and shareholders' equity than those noted above, and could be recorded across multiple periods. We also caution that the above sensitivity analysis is not used by management in developing our reserve estimates and is also not used by management in managing the business.

Other

Included in the Other category are the remnants of our former Bermuda-based insurance operations. These operations are in run-off and no new business is being underwritten. Our outstanding claims and claim expense reserves for these operations include insurance policies and proportional reinsurance with respect

to risks including: (1) commercial property, which principally included catastrophe-exposed commercial property products; (2) commercial multi-line, which included commercial property and liability coverage, such as general liability, automobile liability and physical damage, building and contents, professional liability and various specialty products; and (3) personal lines property, which principally included homeowners personal lines property coverage and catastrophe exposed personal lines property coverage and totaled \$0.4 million at December 31, 2019 (2018 - \$4.6 million).

Our reserving techniques and processes for our Casualty and Specialty segment also apply to our Other category. In addition, certain of our coverages may be impacted by natural and man-made catastrophes. We estimate claim reserves for these losses after the event giving rise to these losses occurs, following a process that is similar to that used in our Property segment.

Premiums and Related Expenses

Premiums are recognized as income, net of any applicable reinsurance or retrocessional coverage purchased, over the terms of the related contracts and policies. Premiums written are based on contract and policy terms and include estimates based on information received from both insureds and ceding companies. Unearned premiums represents the portion of premiums written that relate to the unexpired terms of contracts and policies in force. Amounts are computed by pro rata methods based on statistical data or reports received from ceding companies. Reinstatement premiums are estimated after the occurrence of a significant loss and are recorded in accordance with the contract terms based upon paid losses and case reserves. Reinstatement premiums are earned when written.

Due to the nature of reinsurance, ceding companies routinely report and remit premiums to us subsequent to the contract coverage period. Consequently, premiums written and receivable include amounts reported by the ceding companies, supplemented by our estimates of premiums that are written but not reported. The estimation of written premiums may be affected by early cancellation, election of contract provisions for cut-off and return of unearned premiums or other contract disruptions. The time lag involved in the process of reporting premiums is shorter than the lag in reporting losses. In addition to estimating premiums written, we estimate the earned portion of premiums written which is subject to judgment and uncertainty. Any adjustments to written and earned premiums, and the related losses and acquisition expenses, are accounted for as changes in estimates and are reflected in the results of operations in the period in which they are made.

Lines of business that are similar in both the nature of their business and estimation process may be grouped for purposes of estimating premiums. Premiums are estimated based on ceding company estimates and our own judgment after considering factors such as: (1) the ceding company's historical premium versus projected premium, (2) the ceding company's history of providing accurate estimates, (3) anticipated changes in the marketplace and the ceding company's competitive position therein, (4) reported premiums to date and (5) the anticipated impact of proposed underwriting changes. Estimates of premiums written and earned are based on the selected ultimate premium estimate, the terms and conditions of the reinsurance contracts and the remaining exposure from the underlying policies. We evaluate the appropriateness of these estimates in light of the actual premium reported by the ceding companies, information obtained during audits and other information received from ceding companies.

Reinsurance Recoverables

We enter into retrocessional reinsurance agreements in order to help reduce our exposure to large losses and to help manage our risk portfolio. Amounts recoverable from reinsurers are estimated in a manner consistent with the claims and claim expense reserves associated with the related assumed reinsurance. For multi-year retrospectively rated contracts, we accrue amounts (either assets or liabilities) that are due to or from our retrocessionaires based on estimated contract experience. If we determine that adjustments to earlier estimates are appropriate, such adjustments are recorded in the period in which they are determined.

The estimate of reinsurance recoverables can be more subjective than estimating the underlying claims and claim expense reserves as discussed under the heading "Claims and Claim Expense Reserves" above. In particular, reinsurance recoverables may be affected by deemed inuring reinsurance, industry losses reported by various statistical reporting services, and other factors. Reinsurance recoverables on dual trigger reinsurance contracts require us to estimate our ultimate losses applicable to these contracts as well

as estimate the ultimate amount of insured industry losses that will be reported by the applicable statistical reporting agency, as per the contract terms. In addition, the level of our additional case reserves and IBNR reserves has a significant impact on reinsurance recoverables. These factors can impact the amount and timing of the reinsurance recoverables to be recorded.

The majority of the balance we have accrued as recoverable will not be due for collection until some point in the future. The amounts recoverable ultimately collected are open to uncertainty due to the ultimate ability and willingness of reinsurers to pay our claims, for reasons including insolvency and elective run-off, contractual dispute and various other reasons. In addition, because the majority of the balances recoverable will not be collected for some time, economic conditions as well as the financial and operational performance of a particular reinsurer may change, and these changes may affect the reinsurer's willingness and ability to meet their contractual obligations to us. To reflect these uncertainties, we estimate and record a valuation allowance for potential uncollectible reinsurance recoverables which reduces reinsurance recoverables and net income.

We estimate our valuation allowance by applying specific percentages against each reinsurance recoverable based on our counterparty's credit rating. The percentages applied are based on historical industry default statistics developed by major rating agencies and are then adjusted by us based on industry knowledge and our judgment and estimates. We also apply case-specific valuation allowances against certain recoveries we deem unlikely to be collected in full. We then evaluate the overall adequacy of the valuation allowance based on other qualitative and judgmental factors. At December 31, 2019, our reinsurance recoverable balance was \$2.8 billion (2018 - \$2.4 billion). Of this amount, 57.5% is fully collateralized by our reinsurers, 41.0% is recoverable from reinsurers rated A- or higher by major rating agencies and 1.5% is recoverable from reinsurers rated lower than A- by major rating agencies (2018 - 60.8%, 38.0% and 1.2%, respectively). The reinsurers with the three largest balances accounted for 12.7%, 7.2% and 7.0%, respectively, of our reinsurance recoverable balance at December 31, 2019 (2018 - 15.5%, 6.7% and 6.5%, respectively). The valuation allowance recorded against reinsurance recoverable was \$7.3 million at December 31, 2019 (2018 - \$9.0 million). The three largest company-specific components of the valuation allowance represented 18.1%, 7.9% and 7.2%, respectively, of our total valuation allowance at December 31, 2019 (2018 - 16.2%, 14.8% and 12.3%, respectively).

Fair Value Measurements and Impairments

Fair Value

The use of fair value to measure certain assets and liabilities with resulting unrealized gains or losses is pervasive within our consolidated financial statements. Fair value is defined under accounting guidance currently applicable to us to be the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between open market participants at the measurement date. We recognize the change in unrealized gains and losses arising from changes in fair value in our consolidated statements of operations.

FASB ASC Topic *Fair Value Measurements and Disclosures* prescribes a fair value hierarchy that prioritizes the inputs to the respective valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to valuation techniques that use at least one significant input that is unobservable (Level 3).

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy within which the fair value measurement in its entirety falls has been determined based on the lowest level input that is significant to the fair value measurement of the asset or liability. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment, and we consider factors specific to the asset or liability.

In order to determine if a market is active or inactive for a security, we consider a number of factors, including, but not limited to, the spread between what a seller is asking for a security and what a buyer is bidding for the same security, the volume of trading activity for the security in question, the price of the security compared to its par value (for fixed maturity investments), and other factors that may be indicative of market activity.

In accordance with FASB ASC Topic *Business Combinations*, we allocated the total consideration paid for TMR among acquired assets and assumed liabilities based on their fair values. These assets included TMR's investments of \$2.3 billion, including \$2.2 billion of fixed maturity investments trading, \$108.6 million of short term investments and \$41.2 million of other investments. These assets are subject to the fair value measurement methodology outlined herein.

At December 31, 2019, we classified \$107.6 million and \$28.2 million of our assets and liabilities, respectively, at fair value on a recurring basis using Level 3 inputs. This represented 0.4% and 0.2% of our total assets and liabilities, respectively. Level 3 fair value measurements are based on valuation techniques that use at least one significant input that is unobservable. These measurements are made under circumstances in which there is little, if any, market activity for the asset or liability. We use valuation models or other pricing techniques that require a variety of inputs including contractual terms, market prices and rates, yield curves, credit curves, measures of volatility, prepayment rates and correlations of such inputs, some of which may be unobservable, to value these Level 3 assets and liabilities. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment. In making the assessment, we considered factors specific to the asset or liability. In certain cases, the inputs used to measure fair value of an asset or a liability may fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy within which the fair value measurement in its entirety is classified is determined based on the lowest level input that is significant to the fair value measurement of the asset or liability.

Refer to "Note 6. Fair Value Measurements" in our "Notes to the Consolidated Financial Statements" for additional information about fair value measurements.

Impairments

The amount and timing of asset impairment is subject to significant estimation techniques and is a critical accounting estimate for us. The significant impairment reviews we complete are for our goodwill and other intangible assets and equity method investments, as described in more detail below.

Goodwill and Other Intangible Assets

Goodwill and other intangible assets acquired are initially recorded at fair value. Subsequent to initial recognition, finite lived other intangible assets are amortized over their estimated useful life, subject to impairment, and goodwill and indefinite lived other intangible assets are carried at the lower of cost or fair value, subject to impairment. If goodwill or other intangible assets are impaired, they are written down to their estimated fair values with a corresponding expense reflected in our consolidated statements of operations.

In accordance with FASB ASC Topic *Business Combinations*, we allocated the total consideration paid for TMR among acquired assets and assumed liabilities based on their fair values. We recognized identifiable finite lived intangible assets of \$11.2 million, which will be amortized over a weighted average period of 10.5 years, identifiable indefinite lived intangible assets of \$6.8 million, and certain other adjustments to the fair values of the assets acquired, liabilities assumed and shareholders' equity of TMR at March 22, 2019, based on foreign exchange rates on March 22, 2019.

In addition, we recognized goodwill of \$13.1 million, based on foreign exchange rates on March 22, 2019, attributable to the excess of the purchase price over the fair value of the net assets of TMR. Goodwill resulting from the acquisition of TMR will not be amortized but instead will be tested for impairment at least annually, as outlined below (more frequently if certain indicators are present). Goodwill is assigned to the applicable reporting unit of the acquired entities giving rise to the goodwill and other intangible assets.

We assess goodwill and other intangible assets for impairment in the fourth quarter of each year, or more frequently if events or changes in circumstances indicate that the carrying amount may not be recoverable. For purposes of the annual impairment evaluation, we assess qualitative factors to determine if events or circumstances exist that would lead us to conclude that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we determine that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then we do not perform a quantitative evaluation. Should we determine that a quantitative analysis is required, we will first determine the fair value of the reporting unit and compare that with the carrying value, including goodwill. If the fair value of the reporting

unit exceeds its carrying amount, then goodwill is not considered impaired and no further analysis is required. If the carrying amount of a reporting unit exceeds its fair value, we then proceed to determine the amount of the impairment charge, if any. There are many assumptions and estimates underlying the fair value calculation. Principally, we identify the reporting unit or business entity that the goodwill or other intangible asset is attributed to, and review historical and forecasted operating and financial performance and other underlying factors affecting such analysis, including market conditions. Other assumptions used could produce significantly different results which may result in a change in the value of goodwill or our other intangible assets and a related charge in our consolidated statements of operations. An impairment charge could be recognized in the event of a significant decline in the implied fair value of those operations where the goodwill or other intangible assets are applicable. In the event we determine that the value of goodwill has become impaired, an accounting charge will be taken in the fiscal quarter in which such determination is made, which could have a material adverse effect on our results of operations in the period in which the impairment charge is recorded. As at December 31, 2019, excluding the amounts recorded in investments in other ventures, under the equity method, as noted below, our consolidated balance sheets include \$210.7 million of goodwill (2018 - \$197.6 million) and \$51.5 million of other intangible assets (2018 - \$39.8 million). Impairment charges related to these balances were \$Nil during the year ended December 31, 2019 (2018 - \$Nil, 2017 - \$Nil). In the future, it is possible we will hold more goodwill, which would increase the degree of judgment and uncertainty embedded in our financial statements, and potentially increase the volatility of our reported results.

Deferred Acquisition Costs and Value of Business Acquired ("VOBA")

VOBA was initially recorded to reflect the establishment of the value of business acquired asset, which represents the estimated present value of the expected underwriting profit within the unearned premiums liability, net of reinsurance, less costs to service the related policies and a risk premium. VOBA is derived using, among other things, estimated loss ratios by line of business to calculate the underwriting profit, weighted average cost of capital, risk premium and expected payout patterns. The adjustment for VOBA will be amortized to acquisition expenses over approximately two years, as the contracts for business in-force as of the acquisition date expire.

Investments in Other Ventures, Under Equity Method

Investments in which we have significant influence over the operating and financial policies of the investee are classified as investments in other ventures, under equity method, and are accounted for under the equity method of accounting. Under this method, we record our proportionate share of income or loss from such investments in our results for the period. Any decline in the value of investments in other ventures, under equity method, including goodwill and other intangible assets arising upon acquisition of the investee, considered by management to be other-than-temporary, is reflected in our consolidated statements of operations in the period in which it is determined. As of December 31, 2019, we had \$106.5 million (2018 - \$115.2 million) in investments in other ventures, under equity method on our consolidated balance sheets, including \$10.6 million of goodwill and \$14.3 million of other intangible assets (2018 - \$10.6 million and \$17.1 million). The carrying value of our investments in other ventures, under equity method, individually or in the aggregate, may, and likely will, differ from the realized value we may ultimately attain, perhaps significantly so.

In determining whether an equity method investment is impaired, we take into consideration a variety of factors including the operating and financial performance of the investee, the investee's future business plans and projections, recent transactions and market valuations of publicly traded companies where available, discussions with the investee's management, and our intent and ability to hold the investment until it recovers in value. Accordingly, we make assumptions and estimates in assessing whether an impairment has occurred and if, in the future, our assumptions and estimates made in assessing the fair value of these investments change, this could result in a material decrease in the carrying value of these investments. This would cause us to write-down the carrying value of these investments and could have a material adverse effect on our results of operations in the period the impairment charge is taken. We do not have any current plans to dispose of these investments, and cannot assure you we will consummate future transactions in which we realize the value at which these holdings are reflected in our financial statements. During the year ended December 31, 2019, we recorded \$Nil (2018 - \$Nil, 2017 - \$Nil) of other-than-temporary impairment charges related to goodwill and other intangible assets associated with our

investments in other ventures, under the equity method. See “Note 4. Goodwill and Other Intangible Assets” in our “Notes to the Consolidated Financial Statements” for additional information.

Income Taxes

Income taxes have been provided in accordance with the provisions of FASB ASC Topic *Income Taxes*. Deferred tax assets and liabilities result from temporary differences between the amounts recorded in our consolidated financial statements and the tax basis of our assets and liabilities. Such temporary differences are primarily due to net operating loss carryforwards and GAAP versus tax basis accounting differences relating to unearned premiums, deferred finance charges, reserves for claims and claim expenses, accrued expenses, deferred underwriting results, premiums receivable, deferred acquisition expenses, VOBA, investments, intangible assets and amortization and depreciation. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance against deferred tax assets is recorded if it is more likely than not that all, or some portion, of the benefits related to deferred tax assets will not be realized.

In accordance with FASB ASC Topic *Business Combinations*, we allocated the total consideration paid for TMR among acquired assets and assumed liabilities based on their fair values. This included the establishment of a net deferred tax liability of \$5.7 million and the recording of a valuation allowance against TMR's deferred tax assets of \$35.7 million in our consolidated financial statements.

As a result of the reduction in the U.S. corporate tax rate from 35% to 21% effective January 1, 2018 pursuant to the Tax Bill, which was enacted on December 22, 2017, we recorded a \$36.7 million write-down of its deferred tax asset during the fourth quarter of 2017.

At December 31, 2019, our net deferred tax asset (prior to our valuation allowance) and valuation allowance were \$119.6 million (2018 - \$99.9 million) and \$75.7 million (2018 - \$35.3 million), respectively. See “Note 15. Taxation” in our “Notes to the Consolidated Financial Statements” for additional information. At each balance sheet date, we assess the need to establish a valuation allowance that reduces the net deferred tax asset when it is more likely than not that all, or some portion, of the deferred tax assets will not be realized. The valuation allowance assessment is performed separately in each taxable jurisdiction based on all available information including projections of future GAAP taxable income from each tax-paying component in each tax jurisdiction. The valuation allowance relates to a substantial portion of our deferred tax assets in most jurisdictions in which we do business. It excludes Bermuda and our U.S. operations that existed prior to the TMR acquisition, which only have a small valuation allowance against finite lived tax carryforwards.

We have unrecognized tax benefits of \$Nil as of December 31, 2019 (2018 - \$Nil). Interest and penalties related to unrecognized tax benefits, would be recognized in income tax expense. At December 31, 2019, interest and penalties accrued on unrecognized tax benefits were \$Nil (2018 - \$Nil).

The following filed income tax returns are open for examination with the applicable tax authorities: tax years 2016 through 2018 with the IRS; 2015 through 2018 with Ireland; 2018 with the U.K.; 2015 through 2018 with Singapore; 2018 with Switzerland; and 2015 through 2018 with Australia. We do not expect the resolution of these open years to have a significant impact on our consolidated statements of operations and financial condition.

SUMMARY OF RESULTS OF OPERATIONS

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands, except per share amounts and percentages)			
Statements of operations highlights			
Gross premiums written	\$ 4,807,750	\$ 3,310,427	\$ 2,797,540
Net premiums written	\$ 3,381,493	\$ 2,131,902	\$ 1,871,325
Net premiums earned	\$ 3,338,403	\$ 1,976,129	\$ 1,717,575
Net claims and claim expenses incurred	2,097,021	1,120,018	1,861,428
Acquisition expenses	762,232	432,989	346,892
Operational expenses	222,733	178,267	160,778
Underwriting income (loss)	\$ 256,417	\$ 244,855	\$ (651,523)
Net investment income	\$ 423,833	\$ 261,866	\$ 222,209
Net realized and unrealized gains (losses) on investments	414,483	(175,069)	135,822
Total investment result	\$ 838,316	\$ 86,797	\$ 358,031
Net income (loss)	\$ 950,267	\$ 268,917	\$ (354,671)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 712,042	\$ 197,276	\$ (244,770)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	\$ 16.29	\$ 4.91	\$ (6.15)
Dividends per common share	\$ 1.36	\$ 1.32	\$ 1.28
Key ratios			
Net claims and claim expense ratio – current accident year	63.6 %	70.4 %	110.8 %
Net claims and claim expense ratio – prior accident years	(0.8)%	(13.7)%	(2.4)%
Net claims and claim expense ratio – calendar year	62.8 %	56.7 %	108.4 %
Underwriting expense ratio	29.5 %	30.9 %	29.5 %
Combined ratio	92.3 %	87.6 %	137.9 %
Return on average common equity	14.1 %	4.7 %	(5.7)%
Book value			
	December 31, 2019	December 31, 2018	December 31, 2017
Book value per common share	\$ 120.53	\$ 104.13	\$ 99.72
Accumulated dividends per common share	20.68	19.32	18.00
Book value per common share plus accumulated dividends	\$ 141.21	\$ 123.45	\$ 117.72
Change in book value per common share plus change in accumulated dividends	17.1 %	5.7 %	(6.9)%
Balance sheet highlights			
	December 31, 2019	December 31, 2018	December 31, 2017
Total assets	\$ 26,330,094	\$ 18,676,196	\$ 15,226,131
Total shareholders' equity attributable to RenaissanceRe	\$ 5,971,367	\$ 5,045,080	\$ 4,391,375

Results of operations for 2019 compared to 2018

Net income available to RenaissanceRe common shareholders was \$712.0 million in 2019, compared to \$197.3 million in 2018, an increase of \$514.8 million. As a result of our net income available to RenaissanceRe common shareholders in 2019, we generated an annualized return on average common equity of 14.1% and our book value per common share increased from \$104.13 at December 31, 2018 to \$120.53 at December 31, 2019, a 17.1% increase, after considering the change in accumulated dividends paid to our common shareholders.

The most significant events affecting our financial performance during 2019, on a comparative basis to 2018, include:

- *TMR* - the second quarter of 2019 was the first quarter that reflected the results of TMR in our results of operations. As such, our results of operations for 2019, compared to 2018, should be viewed in that context;
- *Impact of Catastrophe Events* - in 2019, we had a net negative impact on our net income available to RenaissanceRe common shareholders of \$348.2 million from Hurricane Dorian and Typhoon Faxai (the "Q3 2019 Catastrophe Events"), Typhoon Hagibis and losses associated with aggregate loss contracts (collectively, the "2019 Large Loss Events"). This compares to a net negative impact on our net income available to RenaissanceRe common shareholders of \$86.4 million from the combined impacts of the 2018 Large Loss Events and changes in estimates of the 2017 Large Loss Events, in 2018;
- *Underwriting Results* - we generated underwriting income of \$256.4 million and had a combined ratio of 92.3% in 2019, compared to underwriting income of \$244.9 million and a combined ratio of 87.6% in 2018. Our underwriting income in 2019 was comprised of \$209.3 million of underwriting income in our Property segment and \$46.0 million of underwriting income in our Casualty and Specialty segment. In comparison, our underwriting income in 2018 was comprised of our Property segment, which generated underwriting income of \$262.1 million, and our Casualty and Specialty segment, which incurred an underwriting loss of \$17.0 million.

Included in our underwriting result is the net negative impact associated with the 2019 Large Loss Events of \$418.9 million and a corresponding increase of 12.9 percentage points to the combined ratio. In comparison, in 2018, the underwriting result included the net negative impact associated with the combined impacts of the 2018 Large Loss Events and changes in estimates of the 2017 Large Loss Events of \$182.5 million and a corresponding increase in the combined ratio of 10.0 percentage points;
- *Gross Premiums Written* - our gross premiums written increased by \$1.5 billion, or 45.2%, to \$4.8 billion, in 2019, compared to 2018, with an increase of \$670.1 million in the Property segment and an increase of \$827.3 million in the Casualty and Specialty segment. These increases were primarily driven by expanded participation on existing transactions, certain new transactions, rate improvements, and the impact of the acquisition of TMR;
- *Investment Results* - our total investment result, which includes the sum of net investment income and net realized and unrealized gains on investments, was a gain of \$838.3 million in 2019, compared to a gain of \$86.8 million in 2018, an increase of \$751.5 million. Impacting the investment results were higher returns on portfolios of fixed maturity and short term investments, equity investments trading, catastrophe bonds and investments-related derivatives. Also driving the investment result for 2019 was higher average invested assets, primarily resulting from the acquisition of TMR, combined with capital raised in certain of our consolidated third-party capital vehicles during 2019, including DaVinciRe, Upsilon RFO, Vermeer and Medici, and the subsequent investment of those funds as part of our consolidated investment portfolio; and
- *Net Income Attributable to Redeemable Noncontrolling Interests* - our net income attributable to redeemable noncontrolling interests was \$201.5 million in 2019, compared to \$41.6 million in 2018. This increase was principally due to improved performance from DaVinciRe and the addition of net income attributable to Vermeer in 2019, compared to 2018, which was negatively impacted by significant losses in DaVinciRe associated with Hurricane Michael, the wildfires in California during the fourth quarter of 2018 (the "Q4 2018 California Wildfires") and changes in certain losses associated with aggregate loss contracts in 2018 (the "2018 Aggregate Losses").

Results of operations for 2018 compared to 2017

Net income available to RenaissanceRe common shareholders was \$197.3 million in 2018, compared to a net loss attributable to RenaissanceRe common shareholders of \$244.8 million in 2017, an increase of \$442.0 million. As a result of our net income available to RenaissanceRe common shareholders in 2018, we generated an annualized return on average common equity of 4.7% and our book value per common share increased from \$99.72 at December 31, 2017 to \$104.13 at December 31, 2018, a 5.7% increase, after considering the change in accumulated dividends paid to our common shareholders.

The most significant events affecting our financial performance during 2018, on a comparative basis to 2017, include:

- *Impact of Catastrophe Events* - we had a net negative impact on our net income available to RenaissanceRe common shareholders of \$216.1 million from the 2018 Large Loss Events, partially offset by a net positive impact of \$129.8 million resulting from decreases in the estimates of the net negative impact of the 2017 Large Loss Events, compared to a net negative impact of \$720.2 million associated with the 2017 Large Loss Events recorded in 2017;
- *Underwriting Results* - we generated underwriting income of \$244.9 million and had a combined ratio of 87.6% in 2018, compared to an underwriting loss of \$651.5 million and a combined ratio of 137.9%, in 2017. Our underwriting income in 2018 was comprised of \$262.1 million of underwriting income in our Property segment, partially offset by a \$17.0 million underwriting loss in our Casualty and Specialty segment.

Included in our underwriting results for 2018 were the 2018 Large Loss Events, which had a net negative impact on our underwriting result of \$340.2 million and added 18.6 percentage points to the combined ratio, partially offset by changes in the estimates of the 2017 Large Loss Events, which had a positive impact on the underwriting result of \$157.8 million and reduced the combined ratio by 8.0 percentage points. In addition, as a result of the Q4 2018 California Wildfires, our underwriting result was negatively impacted by certain casualty liability exposures within the Casualty and Specialty segment. In comparison, in 2017 the underwriting result experienced a net negative impact of \$989.2 million, or an increase in the combined ratio of 59.4 percentage points, associated with the 2017 Large Loss Events;

- *Large Reinsurance Transactions* - our results for 2018 include certain large reinsurance transactions, which are reflected in our Property segment and increased net premiums earned by \$72.3 million and contributed \$56.2 million to our net income available to RenaissanceRe common shareholders. While we expect large transactions from time to time, we believe they reflect our differentiated strategy, our capability to provide bespoke or large solutions for our clients and our continued focus on serving our clients with unique coverages;
- *Gross Premiums Written* - our gross premiums written increased by \$512.9 million, or 18.3%, to \$3.3 billion in 2018, compared to 2017, driven primarily by increases of \$320.5 million in the Property segment and \$192.4 million in the Casualty and Specialty segment. Included in gross premiums written in 2018 were \$94.5 million of reinstatement premiums written associated with the 2018 Large Loss Events and changes in the estimates of the 2017 Large Loss Events, and \$102.3 million of gross premiums written associated with a large reinsurance transaction, each principally within the Property segment. Included in the gross premiums written in 2017 were \$180.2 million of reinstatement premiums written associated with the 2017 Large Loss Events;
- *Investment Results* - our total investment result, which includes the sum of net investment income and net realized and unrealized gains and losses on investments, was \$86.8 million in 2018, compared to \$358.0 million in 2017, a decrease of \$271.2 million. The decrease was primarily driven by net realized and unrealized losses on investments of \$175.1 million in 2018, compared to net realized and unrealized gains on investments of \$135.8 million in 2017. The net realized and unrealized losses on investments in 2018 were driven by net realized and unrealized losses on the fixed maturity investments portfolio, and net realized and unrealized losses on the equity investments trading portfolio. Partially offsetting these items was higher net investment income from our portfolios of fixed maturity investments trading and short term investments, primarily driven by higher average invested assets and the impact of interest rate increases during recent periods; and

- *Net Income Attributable to Redeemable Noncontrolling Interests* - our net income attributable to redeemable noncontrolling interests was \$41.6 million in 2018, compared to a net loss attributable to redeemable noncontrolling interests of \$132.3 million in 2017. The increase was principally due to DaVinciRe generating underwriting income in 2018 compared to significant underwriting losses in 2017. Our ownership in DaVinciRe was 22.1% at both December 31, 2018 and December 31, 2017.

Net Negative Impact

Net negative impact includes the sum of estimates of net claims and claim expenses incurred, earned reinstatement premiums assumed and ceded, lost profit commissions and redeemable noncontrolling interest. Our estimates of net negative impact are based on a review of our potential exposures, preliminary discussions with certain counterparties and catastrophe modeling techniques. Our actual net negative impact, both individually and in the aggregate, may vary from these estimates, perhaps materially. Changes in these estimates will be recorded in the period in which they occur.

Meaningful uncertainty regarding the estimates and the nature and extent of the losses from these events remains, driven by the magnitude and recent occurrence of each event, the geographic areas in which the events occurred, relatively limited claims data received to date, the contingent nature of business interruption and other exposures, potential uncertainties relating to reinsurance recoveries and other factors inherent in loss estimation, among other things.

The financial data below provides additional information detailing the net negative impact of certain events on our consolidated results of operations in 2019.

<u>Year ended December 31, 2019</u>	<u>Typhoon Hagibis</u>	<u>Q3 2019 Catastrophe Events</u>	<u>2019 Aggregate Losses</u>	<u>Total 2019 Large Loss Events</u>
(in thousands)				
Net claims and claims expenses incurred	\$ (199,305)	\$ (187,188)	\$ (97,591)	\$ (484,084)
Assumed reinstatement premiums earned	28,829	24,596	183	53,608
Ceded reinstatement premiums earned	(219)	(574)	—	(793)
Lost profit commissions	7,509	3,100	1,740	12,349
Net negative impact on underwriting result	(163,186)	(160,066)	(95,668)	(418,920)
Redeemable noncontrolling interest - DaVinciRe	35,078	22,677	12,932	70,687
Net negative impact on net income available to RenaissanceRe common shareholders	<u>\$ (128,108)</u>	<u>\$ (137,389)</u>	<u>\$ (82,736)</u>	<u>\$ (348,233)</u>

The financial data below provides additional information detailing the net negative impact of certain events on our segment underwriting results and consolidated combined ratio in 2019.

<u>Year ended December 31, 2019</u>	<u>Typhoon Hagibis</u>	<u>Q3 2019 Catastrophe Events</u>	<u>2019 Aggregate Losses</u>	<u>Total 2019 Large Loss Events</u>
(in thousands, except percentages)				
Net negative impact on Property segment underwriting result	\$ (161,654)	\$ (157,064)	\$ (95,668)	\$ (414,386)
Net negative impact on Casualty and Specialty segment underwriting result	(1,532)	(3,002)	—	(4,534)
Net negative impact on underwriting result	<u>\$ (163,186)</u>	<u>\$ (160,066)</u>	<u>\$ (95,668)</u>	<u>\$ (418,920)</u>
Percentage point impact on consolidated combined ratio	5.0	4.9	2.8	12.9

The financial data below provides additional details regarding the net negative impact of certain events on our consolidated results of operations in 2018.

<u>Year ended December 31, 2018</u>	<u>Q3 2018 Catastrophe Events (1)</u>	<u>Q4 2018 Catastrophe Events (2)</u>	<u>2018 Aggregate Losses</u>	<u>Total 2018 Large Loss Events</u>	<u>Changes in Estimates of the 2017 Large Loss Events (3)</u>	<u>Total</u>
(in thousands)						
(Increase) decrease in net claims and claims expenses incurred	\$ (152,672)	\$ (232,702)	\$ (54,818)	\$ (440,192)	\$ 187,484	\$ (252,708)
Assumed reinstatement premiums earned	27,165	85,663	2	112,830	(18,374)	94,456
Ceded reinstatement premiums earned	(209)	(26,003)	—	(26,212)	(2)	(26,214)
Lost (earned) profit commissions	2,279	11,971	(900)	13,350	(11,355)	1,995
Net (negative) positive impact on underwriting result	(123,437)	(161,071)	(55,716)	(340,224)	157,753	(182,471)
Redeemable noncontrolling interest - DaVinciRe	20,815	87,245	16,035	124,095	(27,983)	96,112
Net (negative) positive impact on net income available to RenaissanceRe common shareholders	\$ (102,622)	\$ (73,826)	\$ (39,681)	\$ (216,129)	\$ 129,770	\$ (86,359)

- (1) Q3 2018 Catastrophe Events includes Typhoons Jebi, Mangkhut and Trami, Hurricane Florence and the wildfires in California during the third quarter of 2018.
- (2) Q4 2018 Catastrophe Events includes Hurricane Michael and the Q4 2018 California Wildfires.
- (3) An initial estimate of the net negative impact of the 2017 Large Loss Events was recorded in our consolidated financial statements during 2017. The amounts noted in the table above reflect changes in the estimates of the net negative impact of the 2017 Large Loss Events recorded in 2018.

The financial data below provides additional details regarding the net negative impact of certain events on our segment underwriting results and consolidated combined ratio in 2018.

<u>Year ended December 31, 2018</u>	<u>Q3 2018 Catastrophe Events</u>	<u>Q4 2018 Catastrophe Events</u>	<u>2018 Aggregate Losses</u>	<u>Total 2018 Large Loss Events</u>	<u>Changes in Estimates of the 2017 Large Loss Events (1)</u>	<u>Total</u>
(in thousands, except percentages)						
Net (negative) positive impact on Property segment underwriting result	\$ (121,875)	\$ (161,071)	\$ (55,716)	\$ (338,662)	\$ 145,724	\$ (192,938)
Net (negative) positive impact on Casualty and Specialty segment underwriting result (2)	(1,562)	—	—	(1,562)	12,029	10,467
Net (negative) positive impact on underwriting result	\$ (123,437)	\$ (161,071)	\$ (55,716)	\$ (340,224)	\$ 157,753	\$ (182,471)
Percentage point impact on consolidated combined ratio	6.5	8.8	2.8	18.6	(8.0)	10.0

- (1) An initial estimate of the net negative impact of the 2017 Large Loss Events was recorded in our consolidated financial statements during 2017. The amounts noted in the table above reflect changes in the estimates of the net negative impact of the 2017 Large Loss Events recorded in 2018.
- (2) Impact on Casualty and Specialty segment result includes loss estimates from catastrophe exposed contracts within certain specialty lines of business (i.e., energy, marine, and regional multi-line business). Amounts shown for the Q4 2018 Catastrophe Events, which includes the Q4 2018 California Wildfires, do not reflect impacts from certain casualty liability exposures within the Casualty and Specialty segment associated with the Q4 2018 California Wildfires, as different actuarial techniques are used to estimate losses related to such exposures.

Underwriting Results by Segment

Property Segment

Below is a summary of the underwriting results and ratios for our Property segment:

<u>Year ended December 31,</u> (in thousands, except percentages)	<u>2019</u>	<u>2018</u>	<u>2017</u>
Gross premiums written	\$ 2,430,985	\$ 1,760,926	\$ 1,440,437
Net premiums written	\$ 1,654,259	\$ 1,055,188	\$ 978,014
Net premiums earned	\$ 1,627,494	\$ 1,050,831	\$ 931,070
Net claims and claim expenses incurred	965,424	497,895	1,297,985
Acquisition expenses	313,761	177,912	113,816
Operational expenses	139,015	112,954	94,194
Underwriting income (loss)	\$ 209,294	\$ 262,070	\$ (574,925)
Net claims and claim expenses incurred – current accident year	\$ 968,357	\$ 719,185	\$ 1,343,581
Net claims and claim expenses incurred – prior accident years	(2,933)	(221,290)	(45,596)
Net claims and claim expenses incurred – total	\$ 965,424	\$ 497,895	\$ 1,297,985
Net claims and claim expense ratio – current accident year	59.5 %	68.4 %	144.3 %
Net claims and claim expense ratio – prior accident years	(0.2)%	(21.0)%	(4.9)%
Net claims and claim expense ratio – calendar year	59.3 %	47.4 %	139.4 %
Underwriting expense ratio	27.8 %	27.7 %	22.3 %
Combined ratio	87.1 %	75.1 %	161.7 %

Property Gross Premiums Written

In 2019, our Property segment gross premiums written increased by \$670.1 million, or 38.1%, to \$2.4 billion, compared to \$1.8 billion in 2018.

Gross premiums written in the catastrophe class of business were \$1.6 billion in 2019, an increase of \$246.1 million, or 18.2%, compared to 2018. The increase in gross premiums written in the catastrophe class of business was primarily driven by expanded participation on existing transactions, certain new transactions, rate improvements, and the acquisition of TMR.

Gross premiums written in the other property class of business were \$835.5 million in 2019, an increase of \$423.9 million, or 103.0%, compared to 2018. The increase in gross premiums written in the other property class of business was primarily driven by growth across our underwriting platforms, both from existing relationships and through new opportunities we believe have comparably attractive risk-return attributes, rate improvements, and business acquired in connection with the acquisition of TMR.

In 2018, our Property segment gross premiums written increased by \$320.5 million, or 22.2%, to \$1.8 billion, compared to \$1.4 billion in 2017.

Gross premiums written in the catastrophe class of business were \$1.3 billion in 2018, an increase of \$244.9 million, or 22.2%, compared to 2017. Included in the catastrophe class of business in 2018 were \$102.3 million of gross premiums written associated with large reinsurance transactions and \$95.5 million of reinstatement premiums written primarily associated with the 2018 Large Loss Events and changes in the estimates of the net negative impact of the 2017 Large Loss Events. In comparison, 2017 included \$172.4 million of reinstatement premiums written associated with the 2017 Large Loss Events. Excluding the reinstatement premiums written in each period associated with the respective catastrophe events, gross premiums written in the catastrophe class of business would have increased \$321.8 million, or 34.5%,

which was primarily a result of expanded participation on existing transactions and certain new transactions we believe have comparably attractive risk-return attributes, including the large reinsurance transactions noted above.

Gross premiums written in the other property class of business were \$411.6 million in 2018, an increase of \$75.6 million, or 22.5%, compared to 2017. The increase in gross premiums written in the other property class of business was primarily driven by growth across our underwriting platforms, both from existing relationships and through new opportunities we believe have comparably attractive risk-return attributes.

As the other property class of business has become a larger percentage of our Property segment gross premiums written, the amount of proportional business has increased. Proportional business typically has relatively higher premiums per unit of expected underwriting income, together with a higher acquisition expense ratio and combined ratio, than traditional excess of loss reinsurance.

Our Property segment gross premiums written continue to be characterized by a large percentage of U.S. and Caribbean premium, as we have found business derived from exposures in Europe, Asia and the rest of the world to be, in general, less attractive on a risk-adjusted basis during recent periods. A significant amount of our U.S. and Caribbean premium provides coverage against windstorms, notably U.S. Atlantic windstorms, as well as earthquakes and other natural and man-made catastrophes.

Property Ceded Premiums Written

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Ceded premiums written - Property	\$ 776,726	\$ 705,738	\$ 462,423

Ceded premiums written in our Property segment increased \$71.0 million, to \$776.7 million, in 2019, compared to \$705.7 million in 2018. The increase in ceded premiums written was principally due to a significant portion of the increase in gross premiums written in the catastrophe class of business noted above being ceded to third-party investors in our managed vehicles, in particular Upsilon RFO, as well as an overall increase in ceded purchases.

Ceded premiums written in our Property segment increased by \$243.3 million, to \$705.7 million, in 2018, compared to \$462.4 million in 2017. The increase in ceded premiums written was principally due to a significant portion of the increase in gross premiums written in the catastrophe class of business noted above being ceded through our managed joint venture, Upsilon RFO, combined with increased purchases of retrocessional reinsurance as part of the management of our risk portfolio.

Due to the potential volatility of the reinsurance contracts which we sell, we purchase reinsurance to reduce our exposure to large losses and to help manage our risk portfolio. To the extent that appropriately priced coverage is available, we anticipate continued use of retrocessional reinsurance to reduce the impact of large losses on our financial results and to manage our portfolio of risk; however, the buying of ceded reinsurance in our Property segment is based on market opportunities and is not based on placing a specific reinsurance program each year. In addition, in future periods we may utilize the growing market for insurance-linked securities to expand our purchases of retrocessional reinsurance if we find the pricing and terms of such coverages attractive.

Property Underwriting Results

Our Property segment generated underwriting income of \$209.3 million in 2019, compared to \$262.1 million in 2018, a decrease of \$52.8 million. In 2019, our Property segment generated a net claims and claim expense ratio of 59.3%, an underwriting expense ratio of 27.8% and a combined ratio of 87.1%, compared to 47.4%, 27.7% and 75.1%, respectively, in 2018.

Principally impacting the Property segment underwriting result and combined ratio in 2019 were the 2019 Large Loss Events, which resulted in a net negative impact on the Property segment underwriting result of \$414.4 million and a corresponding increase in the Property segment combined ratio of 26.7 percentage points. In comparison, 2018 was impacted by the 2018 Large Loss Events, which resulted in a net negative impact on the underwriting result of \$338.7 million, and a corresponding increase in the combined ratio of 37.4 percentage points. This was partially offset by a net positive impact on the underwriting result associated with changes in the estimates of the net negative impact on the underwriting result of the 2017 Large Loss Events of \$145.7 million, and a corresponding decrease in the combined ratio of 14.0 percentage points.

In addition, in 2019, net favorable development on prior accident years net claims and claim expenses of \$2.9 million, or a decrease in the combined ratio of 0.2 percentage points, was primarily driven by favorable development on the 2017 Large Loss Events, which was mostly offset by adverse development on the 2018 Large Loss Events, compared to net favorable development of \$221.3 million, or 21.0 percentage points, in 2018. The net favorable development in 2018 included the decreases in the estimates of the net negative impact of the 2017 Large Loss Events noted above. Refer to "Part II, Item 7. Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves" and "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for additional discussion of our reserving techniques and prior year development of net claims and claim expenses.

Our Property segment generated underwriting income of \$262.1 million in 2018, compared to an underwriting loss of \$574.9 million in 2017, an improvement of \$837.0 million. In 2018, our Property segment generated a net claims and claim expense ratio of 47.4%, an underwriting expense ratio of 27.7% and a combined ratio of 75.1%, compared to 139.4%, 22.3% and 161.7%, respectively, in 2017.

Principally impacting the Property segment underwriting result and combined ratio in 2018 were the 2018 Large Loss Events, which resulted in a net negative impact on the underwriting result of \$338.7 million, and a corresponding increase in the combined ratio of 37.4 percentage points. This was partially offset by a net positive impact on the underwriting result associated with changes in the estimates of the net negative impact on the underwriting result of the 2017 Large Loss Events of \$145.7 million, and a corresponding decrease in the combined ratio of 14.0 percentage points. In comparison, 2017 was impacted by the 2017 Large Loss Events which resulted in a net negative impact on the underwriting result of \$959.8 million and added 110.5 percentage points to the Property segment combined ratio.

Primarily as a result of changes in the estimates of the net negative impact of the 2017 Large Loss Events noted above, the Property segment experienced net favorable development on prior accident years net claims and claim expenses of \$221.3 million, or 21.0 percentage points, during 2018, compared to \$45.6 million, or 4.9 percentage points, in 2017. Refer to "Part II, Item 7. Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves" and "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for additional discussion of our reserving techniques and prior year development of net claims and claim expenses.

Casualty and Specialty Segment

Below is a summary of the underwriting results and ratios for our Casualty and Specialty segment:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands, except percentages)			
Gross premiums written	\$ 2,376,765	\$ 1,549,501	\$ 1,357,110
Net premiums written	\$ 1,727,234	\$ 1,076,714	\$ 893,307
Net premiums earned	\$ 1,710,909	\$ 925,298	\$ 786,501
Net claims and claim expenses incurred	1,131,637	622,320	565,026
Acquisition expenses	448,678	255,079	233,077
Operational expenses	84,546	64,883	66,548
Underwriting income (loss)	\$ 46,048	\$ (16,984)	\$ (78,150)
Net claims and claim expenses incurred – current accident year	\$ 1,155,519	\$ 671,582	\$ 558,843
Net claims and claim expenses incurred – prior accident years	(23,882)	(49,262)	6,183
Net claims and claim expenses incurred – total	\$ 1,131,637	\$ 622,320	\$ 565,026
Net claims and claim expense ratio – current accident year	67.5 %	72.6 %	71.1%
Net claims and claim expense ratio – prior accident years	(1.4)%	(5.3)%	0.7%
Net claims and claim expense ratio – calendar year	66.1 %	67.3 %	71.8%
Underwriting expense ratio	31.2 %	34.5 %	38.1%
Combined ratio	97.3 %	101.8 %	109.9%

Casualty and Specialty Gross Premiums Written – In 2019, our Casualty and Specialty segment gross premiums written increased by \$827.3 million, or 53.4%, to \$2.4 billion, compared to \$1.5 billion in 2018. The increase in gross premiums written in the Casualty and Specialty segment was primarily due to growth from new and existing business opportunities written in the current and prior periods across various classes of business within the segment, and business acquired in connection with the acquisition of TMR.

In 2018, our Casualty and Specialty segment gross premiums written increased by \$192.4 million, or 14.2%, to \$1.5 billion, compared to \$1.4 billion in 2017. The increase was principally due to selective growth from new business opportunities across various classes of business in our Casualty and Specialty segment. Much of this growth is a result of our differentiated strategy to provide bespoke customer solutions, which may be non-recurring.

Our relative mix of business between proportional business and excess of loss business has fluctuated in the past and will likely continue to do so in the future. Proportional business typically has relatively higher premiums per unit of expected underwriting income, together with a higher combined ratio, than traditional excess of loss reinsurance. In addition, proportional coverage tends to be exposed to relatively more attritional, and frequent, losses, while being subject to less expected severity.

Casualty and Specialty Ceded Premiums Written

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Ceded premiums written - Casualty and Specialty	\$ 649,531	\$ 472,787	\$ 463,803

Ceded premiums written in our Casualty and Specialty segment increased by \$176.7 million, to \$649.5 million, in 2019, compared to \$472.8 million in 2018, primarily resulting from increased gross premiums written subject to our retrocessional quota share reinsurance programs.

Ceded premiums written in our Casualty and Specialty segment increased by \$9.0 million, to \$472.8 million, in 2018, compared to \$463.8 million in 2017, primarily resulting from increases in gross premiums written subject to our retrocessional quota share reinsurance programs utilized as part of the management of our risk portfolio.

As in our Property segment, the buying of ceded reinsurance in our Casualty and Specialty segment is based on market opportunities and is not based on placing a specific reinsurance program each year.

Casualty and Specialty Underwriting Results

Our Casualty and Specialty segment generated underwriting income of \$46.0 million in 2019, compared to an underwriting loss of \$17.0 million in 2018. In 2019, our Casualty and Specialty segment generated a net claims and claim expense ratio of 66.1%, an underwriting expense ratio of 31.2% and a combined ratio of 97.3%, compared to 67.3%, 34.5% and 101.8%, respectively, in 2018.

The decrease in the Casualty and Specialty segment combined ratio in 2019 was primarily driven by an improved underwriting expense ratio as well as an overall decrease in the net claims and claims expense ratio. The decrease in the net claims and claim expense ratio was principally due to lower current accident year losses, which reduced the net claims and claim expense ratio by 5.1 percentage points in 2019, as compared to 2018 which was adversely impacted by liability exposures associated with the wildfires in California in 2018. The underwriting expense ratio in the Casualty and Specialty segment decreased 3.3 percentage points to 31.2% in 2019, compared to 34.5% in 2018, primarily due to a decrease in the operating expense ratio as a result of improved operating leverage.

Our Casualty and Specialty segment experienced net favorable development on prior accident years net claims and claim expenses of \$23.9 million, or 1.4 percentage points, during 2019, compared to \$49.3 million, or 5.3 percentage points, respectively, in 2018. The net favorable development during 2019 and 2018 was principally driven by reported losses coming in lower than expected. Refer to "Part II, Item 7. Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves" and "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for additional discussion of our reserving techniques and prior year development of net claims and claim expenses.

Our Casualty and Specialty segment incurred an underwriting loss of \$17.0 million in 2018, compared to an underwriting loss of \$78.2 million in 2017. In 2018, our Casualty and Specialty segment generated a net claims and claim expense ratio of 67.3%, an underwriting expense ratio of 34.5% and a combined ratio of 101.8%, compared to 71.8%, 38.1% and 109.9%, respectively, in 2017.

The decrease in our Casualty and Specialty segment's combined ratio was driven by decreases of 4.5 percentage points in the net claims and claim expense ratio and 3.6 percentage points in the underwriting expense ratio in 2018, compared to 2017.

The decrease in our Casualty and Specialty segment net claims and claim expense ratio was principally due to favorable development of prior accident year losses of \$49.3 million, or 5.3 percentage points during 2018, as compared to net adverse development of \$6.2 million, or 0.7 percentage points, in 2017. The net favorable development during 2018 was principally driven by reported losses coming in lower than expected compared to 2017, which experienced adverse development associated with the decrease in the Ogden Rate during the period. Refer to "Part II, Item 7. Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves" and "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for additional discussion of our reserving techniques and prior year development of net claims and claim expenses.

The underwriting expense ratio in our Casualty and Specialty segment decreased 3.6 percentage points to 34.5% in 2018, compared to 38.1% in 2017, due to decreases in both the net acquisition ratio and the operating expense ratio, with the latter being due to improved operating leverage.

Fee Income

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Management fee income			
Joint ventures	\$ 42,546	\$ 26,387	\$ 15,358
Managed funds	18,636	11,462	3,659
Structured reinsurance products	35,238	33,312	31,177
Total management fee income	96,420	71,161	50,194
Performance fee income			
Joint ventures	\$ 9,660	\$ 15,093	\$ 9,429
Managed funds	420	62	197
Structured reinsurance products	7,693	3,580	4,719
Total performance fee income	17,773	18,735	14,345
Total fee income	\$ 114,193	\$ 89,896	\$ 64,539

The table above shows total fee income earned through third-party capital management, as well as various joint ventures and certain structured retrocession agreements to which we are a party. Performance fees are based on the performance of the individual vehicles or products, and may be negative in a particular period if, for example, large losses occur, which can potentially result in no performance fees or the reversal of previously accrued performance fees. Joint ventures include DaVinciRe, Top Layer Re, Vermeer and certain entities investing in Langhorne. Managed funds include Upsilon Fund and Medici. Structured reinsurance products and other includes Fibonacci Re, as well as certain other vehicles and reinsurance contracts which transfer risk to capital. The TMR third-party capital vehicles which we manage in connection with the acquisition of TMR also generate management fee income, though this fee income was not material to our results of operations in 2019. The fees earned through third-party capital management are principally recorded through redeemable noncontrolling interest, or as a reduction to operating expenses and acquisition expenses, as applicable.

In 2019, total fee income earned through third-party capital management increased \$24.3 million, to \$114.2 million, compared to \$89.9 million in 2018, primarily driven by an increase in the dollar value of capital being managed combined with improved underlying performance.

In 2018, total fee income earned through third-party capital management increased \$25.4 million, to \$89.9 million, compared to \$64.5 million in 2017, primarily driven by an increase in the dollar value of capital being managed. In addition, certain of our joint ventures, namely DaVinciRe, were significantly more profitable in 2018 compared to 2017.

In addition to the fee income earned through third-party capital management, various joint ventures and certain structured retrocession agreements to which we are a party, as detailed in the table above, we also earn fee income on certain other underwriting-related activities. These fees, in the aggregate, are recorded as a reduction to operating expenses or acquisition expenses, as applicable. The total fees, as described above, earned by us in 2019 that were recorded as a reduction to operating expenses or acquisition expenses were \$92.6 million and \$15.3 million, respectively, resulting in a reduction to the combined ratio of 3.2% (2018 - \$81.6 million, \$15.0 million and 4.9%, respectively, 2017 - \$69.8 million, \$45.4 million and 6.7%, respectively).

Net Investment Income

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Fixed maturity investments	\$ 318,503	\$ 211,973	\$ 179,624
Short term investments	56,264	33,571	11,082
Equity investments trading	4,808	4,474	3,628
Other investments			
Private equity investments	14,981	477	33,999
Other	39,246	22,475	8,067
Cash and cash equivalents	7,676	3,810	1,196
	441,478	276,780	237,596
Investment expenses	(17,645)	(14,914)	(15,387)
Net investment income	<u>\$ 423,833</u>	<u>\$ 261,866</u>	<u>\$ 222,209</u>

Net investment income was \$423.8 million in 2019, compared to \$261.9 million in 2018, an increase of \$162.0 million. Impacting our net investment income for 2019 was improved performance in our fixed maturity and short term investment portfolios, combined with higher average invested assets, primarily resulting from the acquisition of TMR and additional capital raised in certain of our consolidated third-party capital vehicles.

Our private equity and other investment portfolios are accounted for at fair value with the change in fair value recorded in net investment income, which included net unrealized gains of \$12.2 million in 2019, and net unrealized gains of \$8.3 million and \$24.7 million in 2018 and 2017, respectively.

Net investment income was \$261.9 million in 2018, compared to \$222.2 million in 2017, an increase of \$39.7 million. Impacting our net investment income for 2018 were higher average invested assets in our fixed maturity and short term investment portfolios, combined with the impact of interest rate increases during recent periods. In addition, our catastrophe bonds, which are included in other investments, experienced an increase in net investment income as these investments benefited from higher interest rates and higher invested assets, and were less impacted by the catastrophe events in 2018, compared to 2017. Partially offsetting these items were lower returns in our portfolio of private equity investments in 2018 compared to 2017.

Low interest rates in 2019 have lowered the yields at which assets have been invested relative to 2018 and longer-term historical levels. If the current lower yield environment should persist, we would expect that the yield on our portfolio would be adversely impacted by this low interest rate environment.

Net Realized and Unrealized Gains (Losses) on Investments

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Gross realized gains	\$ 133,409	\$ 21,284	\$ 49,121
Gross realized losses	(43,149)	(91,098)	(38,832)
Net realized gains (losses) on fixed maturity investments	90,260	(69,814)	10,289
Net unrealized gains (losses) on fixed maturity investments trading	170,183	(57,310)	8,479
Net realized and unrealized gains (losses) on investments-related derivatives	58,891	(8,784)	(2,490)
Net realized gains on equity investments trading	31,062	27,739	80,027
Net unrealized gains (losses) on equity investments trading	64,087	(66,900)	39,517
Net realized and unrealized gains (losses) on investments	<u>\$ 414,483</u>	<u>\$ (175,069)</u>	<u>\$ 135,822</u>

Our investment portfolio strategy seeks to preserve capital and provide us with a high level of liquidity. A large majority of our investments are invested in the fixed income markets and, therefore, our realized and unrealized holding gains and losses on investments are highly correlated to fluctuations in interest rates. Therefore, as interest rates decline, we will tend to have realized and unrealized gains from our investment portfolio, and as interest rates rise, we will tend to have realized and unrealized losses from our investment portfolio.

Net realized and unrealized gains on investments were \$414.5 million in 2019, compared to net realized and unrealized losses of \$175.1 million in 2018, an increase of \$589.6 million. Principally impacting our net realized and unrealized gains on investments in 2019 were:

- net realized and unrealized gains on our fixed maturity investments trading of \$260.4 million in 2019, compared to net realized and unrealized losses of \$127.1 million in 2018, an increase of \$387.6 million, principally driven by a downward shift in the interest rate yield curve during 2019, compared to an upward shift in the yield curve in 2018;
- net realized and unrealized gains on our investment-related derivatives of \$58.9 million in 2019, compared to losses of \$8.8 million in 2018, an increase of \$67.7 million, principally driven by higher derivative exposure during 2019, in addition to the interest rate activity noted above; and
- net realized and unrealized gains on equity investments trading of \$95.1 million in 2019, compared to net realized and unrealized losses of \$39.2 million in 2018, an improvement of \$134.3 million, principally driven by higher returns on certain of our larger equity positions during 2019, compared to 2018.

Net realized and unrealized losses on investments were \$175.1 million in 2018, compared to net realized and unrealized gains of \$135.8 million in 2017, a decrease of \$310.9 million. Principally impacting our net realized and unrealized losses on investments in 2018 were:

- net realized and unrealized losses on our fixed maturity investments trading of \$127.1 million in 2018, compared to net realized and unrealized gains of \$18.8 million in 2017, a decrease of \$145.9 million, principally driven by an upward shift in the interest rate yield curve and a widening of credit spreads during 2018, compared to a tightening of credit spreads and a decrease in interest rates at the longer end of the yield curve in 2017; and
- net realized and unrealized losses on equity investments trading of \$39.2 million in 2018, compared to net realized and unrealized gains of \$119.5 million in 2017, a decrease of \$158.7 million, principally driven by lower returns on certain of our larger equity positions during 2018.

Net Foreign Exchange (Losses) Gains

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Total foreign exchange (losses) gains	\$ (2,938)	\$ (12,428)	\$ 10,628

Our functional currency is the U.S. dollar. We routinely write a portion of our business in currencies other than U.S. dollars and invest a portion of our cash and investment portfolio in those currencies. In addition, and in connection with the acquisition of TMR, we acquired certain entities with non-U.S. dollar functional currencies. As a result, we may experience foreign exchange gains and losses in our consolidated financial statements. We are primarily impacted by the foreign currency risk exposures associated with our underwriting operations, investment portfolio, and our operations with non-U.S. dollar functional currencies, and may, from time to time, enter into foreign currency forward and option contracts to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities.

Refer to “Part II, Item 7A. Quantitative and Qualitative Disclosures About Market Risk” for additional information related to our exposure to foreign currency risk and “Note 19. Derivative Instruments” in our “Notes to the Consolidated Financial Statements” for additional information related to foreign currency forward and option contracts we have entered into.

Equity in Earnings of Other Ventures

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Tower Hill Companies	\$ 10,337	\$ 9,605	\$ (1,647)
Top Layer Re	8,801	8,852	9,851
Other	4,086	17	(174)
Total equity in earnings of other ventures	\$ 23,224	\$ 18,474	\$ 8,030

Equity in earnings of other ventures primarily represents our pro-rata share of the net income (loss) from our investments in the Tower Hill Companies and Top Layer Re, and, except for Top Layer Re, is recorded one quarter in arrears. The carrying value of these investments on our consolidated balance sheets, individually or in the aggregate, may differ from the realized value we may ultimately attain, perhaps significantly so. The other category includes our equity investments in a select group of insurance and insurance-related companies.

Equity in earnings of other ventures was \$23.2 million in 2019, compared to \$18.5 million in 2018, an increase of \$4.8 million, principally driven by improved profitability of the Tower Hill Companies, as well as our equity investments in a select group of insurance and insurance-related companies within the other category.

Equity in earnings of other ventures was \$18.5 million in 2018, compared to \$8.0 million in 2017, an increase of \$10.4 million, principally driven by improved profitability of the Tower Hill Companies.

Other Income

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Assumed and ceded reinsurance contracts accounted for as derivatives and deposits	\$ 4,473	\$ 4,807	\$ 8,655
Other	476	1,162	760
Total other income	\$ 4,949	\$ 5,969	\$ 9,415

In 2019, we generated other income of \$4.9 million, compared to \$6.0 million in 2018, a decrease of \$1.0 million, driven by our assumed and ceded reinsurance contracts accounted for as derivatives and deposits.

In 2018, we generated other income of \$6.0 million, compared to \$9.4 million in 2017, a decrease of \$3.4 million, driven by a reduction in our assumed and ceded reinsurance contracts accounted for as derivatives and deposits.

Corporate Expenses

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Total corporate expenses	\$ 94,122	\$ 33,983	\$ 18,572

Corporate expenses include certain executive, director, legal and consulting expenses, costs for research and development, impairment charges related to goodwill and other intangible assets, and other miscellaneous costs, including those associated with operating as a publicly traded company, as well as costs incurred in connection with the acquisition of TMR. From time to time, we may revise the allocation of certain expenses between corporate and operating expenses to better reflect the characteristic of the underlying expense.

Corporate expenses increased \$60.1 million to \$94.1 million, in 2019, compared to \$34.0 million in 2018. During 2019, we recorded \$49.7 million of corporate expenses associated with the acquisition of TMR, comprised of \$24.0 million of compensation-related costs, \$13.8 million of transaction-related costs and \$11.9 million of integration-related costs.

Corporate expenses increased \$15.4 million, to \$34.0 million, in 2018, compared to \$18.6 million in 2017, principally as a result of changes in the allocation of operating and corporate expenses to better reflect the nature of those expenses. In addition, during 2018, we incurred \$3.4 million of costs in connection with the acquisition of TMR.

Interest Expense and Preferred Share Dividends

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Interest expense			
\$250.0 million Series B 7.50% Senior Notes due 2017	\$ —	\$ —	\$ 7,813
\$250.0 million 5.75% Senior Notes due 2020	14,375	14,375	14,375
\$300.0 million 3.700% Senior Notes due 2025	11,100	11,100	11,100
\$300.0 million 3.450% Senior Notes due 2027	10,350	10,350	5,482
\$400.0 million 3.600% Senior Notes due 2029	10,720	—	—
\$150.0 million 4.750% Senior Notes due 2025 (DaVinciRe)	7,125	7,125	7,125
Other	4,694	4,119	(1,702)
Total interest expense	58,364	47,069	44,193
Preferred share dividends			
\$125.0 million 6.08% Series C Preference Shares	7,600	7,600	7,600
\$275.0 million 5.375% Series E Preference Shares	14,781	14,781	14,781
\$250.0 million 5.750% Series F Preference Shares	14,375	7,707	—
Total preferred share dividends	36,756	30,088	22,381
Total interest expense and preferred share dividends	\$ 95,120	\$ 77,157	\$ 66,574

Interest expense increased \$11.3 million to \$58.4 million in 2019, compared to \$47.1 million in 2018, primarily driven by additional interest expense due to the April 2019 issuance of \$400.0 million principal amount of 3.600% Senior Notes due 2029, resulting in nearly nine months of interest expense in 2019, compared to no interest on these notes in 2018.

Interest expense increased \$2.9 million to \$47.1 million in 2018, compared to \$44.2 million in 2017, primarily driven by additional interest expense due to twelve months of interest expense in 2018 on the

\$300.0 million principal amount of 3.450% Senior Notes due 2027 issued in June 2017, compared to seven months of interest expense on these notes in 2017.

Preferred share dividends increased by \$6.7 million to \$36.8 million in 2019, compared to \$30.1 million in 2018, primarily driven by dividends on the \$250.0 million principal amount of 5.750% Series F Preference Shares issued in June 2018 resulting in twelve months of dividends in 2019 compared to six months of dividends on these preference shares in 2018.

Preferred share dividends increased by \$7.7 million to \$30.1 million in 2018, compared to \$22.4 million in 2017, primarily driven by dividends on the \$250.0 million of 5.750% Series F Preference Shares issued in June 2018.

Income Tax (Expense) Benefit

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Income tax (expense) benefit	\$ (17,215)	\$ 6,302	\$ (26,487)

We are subject to income taxes in certain jurisdictions in which we operate; however, since the majority of our income is currently earned in Bermuda, which does not have a corporate income tax, the tax impact to our operations has historically been minimal.

In 2019, we recognized an income tax expense of \$17.2 million, compared to an income tax benefit of \$6.3 million in 2018. The income tax expense in 2019 was principally driven by investment gains in our U.S. operations and income in the taxable jurisdictions of the newly acquired TMR entities.

In 2018, we recognized an income tax benefit of \$6.3 million, compared to an income tax expense of \$26.5 million in 2017. The income tax benefit in 2018 was principally driven by pre-tax GAAP losses in our U.S.-based operations associated with the 2018 Large Loss Events and unrealized losses on our investment portfolio, compared to pre-tax GAAP losses in our U.S.-based operations, offset by the impact of a \$36.7 million increase in income tax expense due to the write-down of a portion of our deferred tax asset during 2017, as a result of the reduction in the U.S. corporate tax rate pursuant to the Tax Bill, which was enacted on December 22, 2017.

At December 31, 2019, our U.S. tax-paying subsidiaries had a net deferred tax asset (after valuation allowance) of \$48.2 million. Our operations in Ireland, the U.K., Singapore and the U.S. operations of TMR have historically produced GAAP taxable losses and we currently do not believe it is more likely than not that we will be able to recover the predominant amount of our net deferred tax assets in these jurisdictions. Our valuation allowance totaled \$75.7 million and \$35.3 million at December 31, 2019 and 2018, respectively.

Our effective income tax rate, which we calculate as income tax benefit (expense) divided by income or loss before taxes, may fluctuate significantly from period to period depending on the geographic distribution of pre-tax income or loss in any given period between different jurisdictions with comparatively higher tax rates and those with comparatively lower tax rates. The geographic distribution of pre-tax income or loss can vary significantly between periods due to, but not limited to, the following factors: the business mix of net premiums written and earned; the size and nature of net claims and claim expenses incurred; the amount and geographic location of operating expenses, net investment income, net realized and unrealized gains (losses) on investments; outstanding debt and related interest expense; and the amount of specific adjustments to determine the income tax basis in each of our operating jurisdictions. In addition, a significant portion of our gross and net premiums are currently written and earned in Bermuda, which does not have a corporate income tax, including the majority of our catastrophe business, which can result in significant volatility to our pre-tax income or loss in any given period. We expect our consolidated effective tax rate to increase in the future, as our global operations outside of Bermuda expand, including in connection with the acquisition of TMR. In addition, it is possible we could be adversely affected by changes in tax laws, regulation, or enforcement, any of which could increase our effective tax rate more rapidly or steeply than we currently anticipate.

Generally, the preponderance of our revenue and pre-tax income or loss is generated by our domestic (i.e., Bermuda) operations, in the form of underwriting income or loss and net investment income or loss, rather

than our foreign operations. However, the geographic distribution of pre-tax income or loss can vary significantly between periods for a variety of reasons, including the business mix of net premiums written and earned, the size and nature of net claims and claim expenses incurred, the amount and geographic location of operating expenses, net investment income and net realized and unrealized gains (losses) on investments and the amount of specific adjustments to determine the income tax basis in each of our operating jurisdictions. Pre-tax income for our domestic operations was higher compared to our foreign operations for the years ended December 31, 2019 and 2018 primarily as a result of the more volatile catastrophe business underwritten in our Bermuda operations during these periods incurring a comparatively lower level of catastrophe losses and thus generating higher levels of net underwriting income than our foreign operations, which underwrite primarily less volatile business with higher attritional net claims and claim expenses and as a result produce lower levels of net underwriting income in benign loss years. For 2017, our domestic operations generated an underwriting loss due to the significant catastrophe loss activity during the year and the underwriting loss in our domestic operations was significantly greater than the underwriting loss that was generated by our foreign operations.

Net (Income) Loss Attributable to Redeemable Noncontrolling Interests

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Net (income) loss attributable to redeemable noncontrolling interests	\$ (201,469)	\$ (41,553)	\$ 132,282

Our net income attributable to redeemable noncontrolling interests was \$201.5 million in 2019, compared to \$41.6 million in 2018, a change of \$159.9 million. The increase was primarily driven by the results of operations of Vermeer being included in net income attributable to redeemable noncontrolling interests in 2019, combined with DaVinciRe generating higher net income.

Our net income attributable to redeemable noncontrolling interests was \$41.6 million in 2018, compared to a net loss attributable to redeemable noncontrolling interests of \$132.3 million in 2017, a change of \$173.8 million, principally due to DaVinciRe generating underwriting income in 2018, compared to significant underwriting losses in 2017 driven by the 2017 Large Loss Events.

Refer to "Note 10. Noncontrolling Interests" in our "Notes to Consolidated Financial Statements" for additional information regarding our redeemable noncontrolling interests.

FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

Financial Condition

As a Bermuda-domiciled holding company, RenaissanceRe has limited operations of its own. Its assets consist primarily of investments in subsidiaries, and, to a degree, cash and securities in amounts which fluctuate over time. We therefore rely on dividends, distributions and other statutorily permissible payments from our subsidiaries, investment income and fee income to meet our liquidity requirements, which primarily include making principal and interest payments on our debt and dividend payments to our preference and common shareholders.

The payment of dividends by our subsidiaries is, under certain circumstances, limited by the applicable laws and regulations in the various jurisdictions in which our subsidiaries operate, including Bermuda, the U.S., the U.K., Switzerland, Australia and Ireland. In addition, insurance laws require our insurance subsidiaries to maintain certain measures of solvency and liquidity. We believe that each of our insurance subsidiaries and branches exceeded the minimum solvency, capital and surplus requirements in their applicable jurisdictions at December 31, 2019. Certain of our subsidiaries and branches are required to file financial condition reports, or FCRs, with their regulators, which provide details on solvency and financial performance. Where required, these FCRs will be posted on our website. The regulations governing our and our principal operating subsidiaries' ability to pay dividends and to maintain certain measures of solvency and liquidity, requirements to file FCRs and are discussed in detail in "Part I, Item 1. Regulation" and "Note 18. Statutory Requirements" in our "Notes to the Consolidated Financial Statements."

Liquidity and Cash Flows

Holding Company Liquidity

RenaissanceRe's principal uses of liquidity are: (1) common share related transactions including dividend payments to our common shareholders and common share repurchases, (2) preference share related transactions including dividend payments to our preference shareholders and preference share redemptions, (3) interest and principal payments on debt, (4) capital investments in our subsidiaries, (5) acquisition of new or existing companies or businesses, such as our acquisition of TMR and (6) certain corporate and operating expenses.

We attempt to structure our organization in a way that facilitates efficient capital movements between RenaissanceRe and our operating subsidiaries and to ensure that adequate liquidity is available when required, giving consideration to applicable laws and regulations, and the domiciliary location of sources of liquidity and related obligations.

In the aggregate, our principal operating subsidiaries have historically produced sufficient cash flows to meet their expected claims payments and operational expenses and to provide dividend payments to us. In addition, our subsidiaries maintain a concentration of investments in high quality liquid securities, which management believes will provide additional liquidity for extraordinary claims payments should the need arise. However, in some circumstances, RenaissanceRe may contribute capital to its subsidiaries. For example, during 2018 and 2017 we experienced significant losses from large catastrophe events, and as we would expect following events of this magnitude, it was necessary for RenaissanceRe to contribute capital to certain of our principal operating subsidiaries to ensure they were able to maintain levels of capital adequacy and liquidity in compliance with various laws and regulations, support rating agency capital requirements, pay valid claims quickly and be adequately capitalized to pursue business opportunities as they arise. During 2019, RenaissanceRe contributed capital to RenaissanceRe Specialty Holdings to fund the acquisition of TMR and made a capital contribution to Renaissance Reinsurance to increase its shareholders' equity, consistent with past practice following a significant acquisition and to support growth in premiums. In addition, from time to time we invest in new managed joint ventures, increase our investments in certain of our managed joint ventures and contribute cash to investment subsidiaries. In certain instances, we are required to make capital contributions to our subsidiaries, for example, Renaissance Reinsurance is obligated to make a mandatory capital contribution of up to \$50.0 million in the event that a loss reduces Top Layer Re's capital below a specified level.

Sources of Liquidity

Historically, cash receipts from operations, consisting primarily of premiums, investment income and fee income, have provided sufficient funds to pay losses and operating expenses of our subsidiaries and to fund dividends and distributions to RenaissanceRe. Other potential sources of liquidity include borrowings under our credit facilities and issuances of securities.

The premiums received by our operating subsidiaries are generally received months or even years before losses are paid under the policies related to such premiums. Premiums and acquisition expenses generally are received within the first two years of inception of a contract while operating expenses are generally paid within a year of being incurred. It generally takes much longer for claims and claims expenses to be reported and ultimately settled, requiring the establishment of reserves for claims and claim expenses. Therefore, the amount of claims paid in any one year is not necessarily related to the amount of net claims incurred in that year, as reported in the consolidated statement of operations.

While we expect that our liquidity needs will continue to be met by our cash receipts from operations, as a result of the combination of current market conditions, lower than usual investment yields, and the nature of our business where a large portion of the coverages we provide can produce losses of high severity and low frequency, future cash flows from operating activities cannot be accurately predicted and may fluctuate significantly between individual quarters and years. In addition, due to the magnitude and complexity of certain large loss events, meaningful uncertainty remains regarding losses from these events and our actual ultimate net losses from these events may vary materially from preliminary estimates, which would impact our cash flows from operations.

Our “shelf” registration statement on Form S-3 under the Securities Act allows for the public offering of various types of securities, including common shares, preference shares and debt securities, and thus provides a source of liquidity. Because we are a “well-known seasoned issuer” as defined by the rules promulgated under the Securities Act, we are also eligible to file additional automatically effective registration statements on Form S-3 in the future for the potential offering and sale of an unlimited amount of debt and equity securities.

Credit Facilities

In addition, we maintain letter of credit facilities which provide liquidity and allow us to satisfy certain collateral requirements. The outstanding amounts drawn under each of our significant credit facilities are set forth below:

At December 31, 2019 (in thousands)	Issued or Drawn
Revolving Credit Facility (1)	\$ —
Bilateral Letter of Credit Facilities	
Secured	298,063
Unsecured	381,770
Funds at Lloyd's Letter of Credit Facility	290,000
TMR Letters of Credit (2)	140,923
	\$ 1,110,756

(1) At December 31, 2019, no amounts were issued or drawn under this facility.

(2) These letters of credit were transferred to us in connection with the acquisition of TMR. Refer to “Note 3. Acquisition of Tokio Millennium Re” in our “Notes to the Consolidated Financial Statements” for additional information related to the acquisition of TMR.

Refer to “Note 9. Debt and Credit Facilities” in our “Notes to the Consolidated Financial Statements” for additional information related to our debt and credit facilities and “Note 12. Shareholders' Equity” in our “Notes to the Consolidated Financial Statements” for additional information related to our common and preference shares.

Funds at Lloyd's

As a member of Lloyd's, the underwriting capacity, or stamp capacity, of Syndicate 1458 must be supported by providing a deposit in the form of cash, securities or letters of credit, which are referred to as Funds at Lloyd's. At December 31, 2019, the FAL required to support the underwriting activities at Lloyd's through Syndicate 1458 was £524.3 million (2018 - £427.5 million). Actual FAL posted for Syndicate 1458 at December 31, 2019 by RenaissanceRe CCL was £522.5 million (2018 - £481.0 million), supported by a \$290.0 million letter of credit and a \$385.9 million deposit of cash and fixed maturity securities (2018 - \$180.0 million and \$390.8 million, respectively). On November 7, 2019, Renaissance Reinsurance amended and restated a letter of credit reimbursement agreement supporting business written by Syndicate 1458 to increase the size of the facility from \$255.0 million to \$290.0 million and to reduce certain collateral pledge requirements. Refer to “Note 9. Debt and Credit Facilities” in our “Notes to the Consolidated Financial Statements” for additional information related to this letter of credit facility.

Multi-Beneficiary Reinsurance Trusts and Multi-Beneficiary Reduced Collateral Reinsurance Trusts

Refer to “Note 18. Statutory Requirements” in our “Notes to the Consolidated Financial Statements” for additional information related to our multi-beneficiary reinsurance trusts and multi-beneficiary reduced collateral reinsurance trust, which certain of our insurance subsidiaries use to collateralize reinsurance liabilities.

Cash Flows

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(in thousands)			
Net cash provided by operating activities	\$ 2,137,195	\$ 1,221,701	\$ 1,025,787
Net cash used in investing activities	(2,988,644)	(2,536,613)	(122,434)
Net cash provided by financing activities	1,120,117	1,066,340	28,860
Effect of exchange rate changes on foreign currency cash	2,478	(5,098)	8,222
Net increase (decrease) in cash and cash equivalents	271,146	(253,670)	940,435
Cash and cash equivalents, beginning of period	1,107,922	1,361,592	421,157
Cash and cash equivalents, end of period	<u>\$ 1,379,068</u>	<u>\$ 1,107,922</u>	<u>\$ 1,361,592</u>

2019

During 2019, our cash and cash equivalents increased by \$271.1 million, to \$1.4 billion at December 31, 2019, compared to \$1.1 billion at December 31, 2018.

Cash flows provided by operating activities. Cash flows provided by operating activities during 2019 were \$2.1 billion, compared to \$1.2 billion during 2018. Cash flows provided by operating activities during 2019 were primarily the result of certain adjustments to reconcile our net income of \$950.3 million to net cash provided by operating activities, including:

- an increase in reserve for claims and claim expenses of \$900.6 million as a result of claims and claims expenses incurred of \$3.2 billion during 2019 principally driven by current accident year losses, partially offset by claims payments of \$2.3 billion primarily associated with prior accident years losses;
- an increase in reinsurance balances payable of \$658.5 million principally driven by the issuance of non-voting preference shares to investors in Upsilon RFO, which are accounted for as prospective reinsurance and included in reinsurance balances payable on our consolidated balance sheet. Refer to "Note 11. Variable Interest Entities" in our "Notes to the Consolidated Financial Statements" for additional information related to Upsilon RFO's non-voting preference shares;
- an increase in other operating cash flows of \$251.4 million primarily reflecting the movement in subscriptions received in advance of the issuance of Upsilon RFO's non-voting preference shares effective January 1, 2020 and 2019, which were recorded in other liabilities at December 31, 2019 and 2018, respectively. Refer to "Note 11. Variable Interest Entities" in our "Notes to the Consolidated Financial Statements" for additional information related to Upsilon RFO's non-voting preference shares;
- a net decrease in reinsurance recoverable of \$129.7 million primarily resulting from the collection of \$1.2 billion during 2019, partially offset by increases to reinsurance recoverable principally driven by increases in net claims and claim expenses associated with current accident year losses, combined with the continued execution of our gross-to-net strategy; partially offset by
- an increase in premiums receivable of \$425.0 million due to the increase in gross premiums written combined with the timing of receipts of those premiums; and
- net realized and unrealized gains on investments of \$414.5 million principally due to improved performances from our fixed maturity, public equity and investments-related derivative portfolios.

Cash flows used in investing activities. During 2019, our cash flows used in investing activities were \$3.0 billion, principally reflecting net purchases of short term investments, fixed maturity investments and other investments of \$1.9 billion, \$605.4 million and \$202.9 million, respectively. The net purchase of short term investments was funded in part by the capital received from investors in DaVinciRe, Medici, Upsilon RFO and Vermeer, and other net cash flows provided by operating activities. The net purchase of other investments during 2019, was primarily driven by an increased allocation to catastrophe bonds. In addition, we completed our acquisition of TMR on March 22, 2019, resulting in a net cash outflow of \$276.2 million, comprised of cash consideration paid by RenaissanceRe as acquisition consideration of \$813.6 million, net

of cash acquired from TMR of \$537.4 million. Refer to “Note 3. Acquisition of Tokio Millennium Re” in our “Notes to the Consolidated Financial Statements” for additional information related to the acquisition of TMR.

Cash flows provided by financing activities. Our cash flows provided by financing activities in 2019 were \$1.1 billion, and were principally the result of:

- net inflows of \$827.1 million related to net third-party redeemable noncontrolling interest share transactions in DaVinciRe, Medici and Vermeer;
- net inflows of \$396.4 million associated with the April 2, 2019 issuance of \$400.0 million principal amount of our 3.600% Senior Notes due April 15, 2029; partially offset by
- dividends paid on our common and preference shares of \$59.4 million and \$36.8 million, respectively.

2018

During 2018, our cash and cash equivalents decreased by \$253.7 million, to \$1.1 billion at December 31, 2018, compared to \$1.4 billion at December 31, 2017.

Cash flows provided by operating activities. Cash flows provided by operating activities during 2018 were \$1.2 billion, compared to \$1.0 billion during 2017. Cash flows provided by operating activities during 2018 were primarily the result of certain adjustments to reconcile our net income of \$268.9 million to net cash provided by operating activities, including:

- an increase in reserve for claims and claim expenses of \$995.9 million as a result of claims and claims expenses incurred of \$2.6 billion during 2018 principally driven by the 2018 Large Loss Events, partially offset by claims payments of \$1.6 billion primarily associated with the 2017 Large Loss Events;
- an increase in reinsurance balances payable of \$913.0 million principally driven by the issuance of non-voting preference shares to investors in Upsilon RFO, following capital being deployed in the vehicle, which are accounted for as prospective reinsurance and included in reinsurance balances payable on our consolidated balance sheet. Refer to “Note 11. Variable Interest Entities” in our “Notes to the Consolidated Financial Statements” for additional information related to Upsilon RFO’s non-voting preference shares;
- an increase in unearned premiums of \$238.4 million due to the timing of renewals and the increase in gross premiums written in 2018, compared to 2017; partially offset by
- an increase in reinsurance recoverable of \$785.6 million primarily resulting from the increase in net claims and claim expenses principally driven by the 2018 Large Loss Events, noted above, as we continue to execute our gross-to-net strategy;
- a decrease in other operating cash flows of \$223.3 million primarily associated with movements in subscriptions received in advance associated with the issuance of Upsilon RFO’s non-voting preference shares effective January 1, 2019 and 2018. Refer to “Note 11. Variable Interest Entities” and “Note. 23 Subsequent Events” in our “Notes to the Consolidated Financial Statements” for additional information related to Upsilon RFO’s non-voting preference shares;
- increases in premiums receivable and deferred acquisition costs of \$232.6 million and \$50.1 million, respectively, due to the timing of payments of our gross premiums written and amortization of deferred acquisition costs, respectively;
- net realized and unrealized losses on investments of \$175.1 million principally related to our fixed maturity investments portfolio which experienced an upward shift in the interest rate yield curve and a widening of credit spreads during 2018, and our equity investments trading portfolio which was impacted by lower returns on certain of our larger equity positions during 2018; and
- an increase of \$82.6 million in our prepaid reinsurance premiums due to ceded premiums written associated renewals in 2018.

Cash flows used in investing activities. During 2018, our cash flows used in investing activities were \$2.5 billion, principally reflecting net purchases of short term, fixed maturity and other investments of \$1.4 billion, \$904.4 million and \$199.5 million, respectively. The net purchase of short term and fixed maturity investments was funded in part by the capital received from investors in Upsilon RFO and Vermeer, and the proceeds from the issuance of our 5.750% Series F Preference Shares and the issuance of \$250.0 million of our common shares to State Farm, each as discussed below. In addition, we increased our allocation to other investments during 2018.

Cash flows provided by financing activities. Our cash flows provided by financing activities in 2018 were \$1.1 billion, and were principally the result of:

- net inflows of \$665.7 million related to a net contribution of capital from third-party shareholders, primarily related to the creation of Vermeer, which was initially capitalized with \$600.0 million of participating, non-voting common shares;
- net inflows of \$241.4 million associated with the issuance of \$250.0 million of Depositary Shares (each representing a 1/1000th interest in a share of our 5.750% Series F Preference Shares), net of expenses;
- net inflows of \$250.0 million associated with the issuance of 1,947,496 of our common shares to State Farm; partially offset by
- dividends paid on our common and preference shares of \$52.8 million and \$30.1 million, respectively.

Capital Resources

We monitor our capital adequacy on a regular basis and seek to adjust our capital according to the needs of our business. In particular, we require capital sufficient to meet or exceed the capital adequacy ratios established by rating agencies for maintenance of appropriate financial strength ratings, the capital adequacy tests performed by regulatory authorities and the capital requirements under our credit facilities. We may seek to raise additional capital or return capital to our shareholders through common share repurchases and cash dividends (or a combination of such methods). In the normal course of our operations, we may from time to time evaluate additional share or debt issuances given prevailing market conditions and capital management strategies, including for our operating subsidiaries and joint ventures. In addition, as noted above, we enter into agreements with financial institutions to obtain letter of credit facilities for the benefit of our operating subsidiaries in their reinsurance and insurance business.

Our total shareholders' equity attributable to RenaissanceRe and debt as of December 31, 2019 and December 31, 2018 was as follows:

	At December 31, 2019	At December 31, 2018	Change
(in thousands)			
Common shareholders' equity	\$ 5,321,367	\$ 4,395,080	\$ 926,287
Preference shares	650,000	650,000	—
Total shareholders' equity attributable to RenaissanceRe	5,971,367	5,045,080	926,287
3.600% Senior Notes due 2029	391,475	—	391,475
3.450% Senior Notes due 2027	296,292	295,797	495
3.700% Senior Notes due 2025	298,057	297,688	369
5.750% Senior Notes due 2020	249,931	249,602	329
4.750% Senior Notes due 2025 (DaVinciRe) (1)	148,350	148,040	310
Total debt	1,384,105	991,127	392,978
Total shareholders' equity attributable to RenaissanceRe and debt	\$ 7,355,472	\$ 6,036,207	\$ 1,319,265

- (1) RenaissanceRe owns a noncontrolling economic interest in its joint venture DaVinciRe. Because RenaissanceRe controls a majority of DaVinciRe's outstanding voting rights, the consolidated financial statements of DaVinciRe are included in the consolidated financial statements of RenaissanceRe. However, RenaissanceRe does not guarantee or provide credit support for

DaVinciRe and RenaissanceRe's financial exposure to DaVinciRe is limited to its investment in DaVinciRe's shares and counterparty credit risk arising from reinsurance transactions.

During 2019, our total shareholders' equity attributable to RenaissanceRe and debt increased by \$1.3 billion, to \$7.4 billion.

Our shareholders' equity attributable to RenaissanceRe increased \$926.3 million during 2019 principally as a result of:

- our comprehensive income attributable to RenaissanceRe of \$748.3 million;
- the issuance of 1,739,071 of our common shares to Tokio in connection with the acquisition of TMR; and partially offset by
- \$59.4 million and \$36.8 million of dividends on our common and preference shares, respectively.

Our debt increased \$393.0 million during the year ended December 31, 2019 principally as a result of the April 2, 2019 issuance of \$400.0 million principal amount of 3.600% Senior Notes due April 15, 2029. The net proceeds from this offering were used to repay, in full, the \$200.0 million that was outstanding under our revolving credit agreement at March 31, 2019, and the remainder of the net proceeds will be used for general corporate purposes. Refer to "Note 3. Acquisition of Tokio Millennium Re" in our "Notes to the Consolidated Financial Statements" for additional information regarding the acquisition of TMR and "Note 9. Debt and Credit Facilities" in our "Notes to the Consolidated Financial Statements" for additional information regarding the issuance of our 3.600% Senior Notes due 2029.

Reserve for Claims and Claim Expenses

We believe the most significant accounting judgment made by management is our estimate of claims and claim expense reserves. Claims and claim expense reserves represent estimates, including actuarial and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts we sell. Our actual net claims and claim expenses paid will differ, perhaps materially, from the estimates reflected in our financial statements, which may adversely impact our financial condition, liquidity and capital resources.

Refer to "Note 8. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for more information on the risks we insure and reinsure, the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, prior year development of the reserve for claims and claim expenses, analysis of our incurred and paid claims development and claims duration information for each of our Property and Casualty and Specialty segments. In addition, refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves" for more information on the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, our current estimates versus our initial estimates of our claims reserves, and sensitivity analysis for each of our Property and Casualty and Specialty segments.

Investments

The table below shows our invested assets:

<u>At December 31,</u>	<u>2019</u>		<u>2018</u>		<u>Change</u>
(in thousands, except percentages)					
U.S. treasuries	\$ 4,467,345	25.7%	\$ 3,331,411	28.0%	\$ 1,135,934
Agencies	343,031	1.9%	174,883	1.5%	168,148
Municipal	—	—%	6,854	0.1%	(6,854)
Non-U.S. government	497,392	2.9%	279,818	2.4%	217,574
Non-U.S. government-backed corporate	321,356	1.9%	160,063	1.3%	161,293
Corporate	3,075,660	17.7%	2,450,244	20.6%	625,416
Agency mortgage-backed	1,148,499	6.6%	817,880	6.8%	330,619
Non-agency mortgage-backed	294,604	1.7%	278,680	2.4%	15,924
Commercial mortgage-backed	468,698	2.7%	282,294	2.4%	186,404
Asset-backed	555,070	3.2%	306,743	2.6%	248,327
Total fixed maturity investments, at fair value	11,171,655	64.3%	8,088,870	68.1%	3,082,785
Short term investments, at fair value	4,566,277	26.3%	2,586,520	21.8%	1,979,757
Equity investments trading, at fair value	436,931	2.5%	310,252	2.6%	126,679
Other investments, at fair value	1,087,377	6.3%	784,933	6.5%	302,444
Total managed investment portfolio	17,262,240	99.4%	11,770,575	99.0%	5,491,665
Investments in other ventures, under equity method	106,549	0.6%	115,172	1.0%	(8,623)
Total investments	\$ 17,368,789	100.0%	\$ 11,885,747	100.0%	\$ 5,483,042

At December 31, 2019, we held investments totaling \$17.4 billion, compared to \$11.9 billion at December 31, 2018. In connection with the acquisition of TMR, we acquired total investments with a fair market value of \$2.3 billion on March 22, 2019, the date of acquisition. Our investment guidelines stress preservation of capital, market liquidity, and diversification of risk. Notwithstanding the foregoing, our investments are subject to market-wide risks and fluctuations, as well as to risks inherent in particular securities. In addition to the information presented above and below, refer to “Note 5. Investments” and “Note 6. Fair Value Measurements” in our “Notes to the Consolidated Financial Statements” for additional information regarding our investments and the fair value measurement of our investments, respectively.

As the reinsurance coverages we sell include substantial protection for damages resulting from natural and man-made catastrophes, as well as for potentially large casualty and specialty exposures, we expect from time to time to become liable for substantial claim payments on short notice. Accordingly, our investment portfolio as a whole is structured to seek to preserve capital and provide a high level of liquidity, which means that the large majority of our investment portfolio consists of highly rated fixed income securities, including U.S. treasuries, agencies, highly rated sovereign and supranational securities, high-grade corporate securities and mortgage-backed and asset-backed securities. We also have an allocation to publicly traded equities reflected on our consolidated balance sheet as equity investments trading and an allocation to other investments (including catastrophe bonds, private equity investments, senior secured bank loan funds and hedge funds). At December 31, 2019, our portfolio of equity investments trading totaled \$436.9 million or 2.5%, of our total investments (2018 - \$310.3 million or 2.6%). Our portfolio of other investments totaled \$1.1 billion, or 6.3%, of our total investments (2018 - \$784.9 million or 6.5%).

The following table summarizes the composition of our investment portfolio, including the amortized cost and fair value of our investment portfolio and the ratings as assigned by S&P and/or other rating agencies when S&P ratings were not available, and the respective effective yield.

December 31, 2019 (in thousands, except percentages)	Amortized Cost	Fair Value	% of Total Investment Portfolio	Weighted Average Yield to Maturity	Credit Rating (1)					
					AAA	AA	A	BBB	Non-Investment Grade	Not Rated
Short term investments	\$ 4,566,277	\$ 4,566,277	26.3%	1.6%	\$ 4,293,369	\$ 258,477	\$ 12,480	\$ 1,376	\$ 545	\$ 30
		100.0%			94.0%	5.7%	0.3%	—%	—%	—%
Fixed maturity investments										
U.S. treasuries	4,439,533	4,467,345	25.7%	1.7%	—	4,467,345	—	—	—	—
Agencies	342,162	343,031	1.9%	2.1%	—	343,031	—	—	—	—
Non-U.S. government	495,465	497,392	2.9%	1.6%	262,457	204,036	11,292	18,259	1,348	—
Non-U.S. government-backed corporate	321,303	321,356	1.9%	2.0%	169,357	113,459	37,300	550	690	—
Corporate	3,010,615	3,075,660	17.7%	3.0%	47,337	221,494	1,395,626	802,372	593,371	15,460
Agency mortgage-backed	1,130,746	1,148,499	6.6%	2.5%	—	1,148,499	—	—	—	—
Non-agency securities - Alt A	218,846	229,055	1.3%	3.8%	32,026	6,671	2,227	8,000	146,434	33,697
Non-agency securities - Prime	63,421	65,549	0.4%	3.3%	23,535	3,142	2,657	582	20,814	14,819
Commercial mortgage-backed	489,352	468,698	2.7%	2.6%	365,272	84,859	2,701	14,270	1,596	—
Asset-backed	555,971	555,070	3.2%	3.3%	438,281	84,683	1,409	30,697	—	—
Total fixed maturity investments	11,067,414	11,171,655	64.3%	2.3%	1,338,265	6,677,219	1,453,212	874,730	764,253	63,976
		100.0%			12.0%	59.8%	13.0%	7.8%	6.8%	0.6%
Equity investments trading		436,931	2.5%		—	—	—	—	—	436,931
		100.0%			—%	—%	—%	—%	—%	100.0%
Other investments										
Catastrophe bonds		781,641	4.5%		—	—	—	—	781,641	—
Private equity investments		271,047	1.6%		—	—	—	—	—	271,047
Senior secured bank loan funds		22,598	0.1%		—	—	—	—	—	22,598
Hedge funds		12,091	0.1%		—	—	—	—	—	12,091
Total other investments		1,087,377	6.3%		—	—	—	—	781,641	305,736
		100.0%			—%	—%	—%	—%	71.9%	28.1%
Investments in other ventures		106,549	0.6%		—	—	—	—	—	106,549
		100.0%			—%	—%	—%	—%	—%	100.0%
Total investment portfolio	\$ 17,368,789		100.0%		\$ 5,631,634	\$ 6,935,696	\$ 1,465,692	\$ 876,106	\$ 1,546,439	\$ 913,222
		100.0%			32.4%	40.0%	8.4%	5.0%	8.9%	5.3%

(1) The credit ratings included in this table are those assigned by S&P. When ratings provided by S&P were not available, ratings from other nationally recognized rating agencies were used. We have grouped short term investments with an A-1+ and A-1 short term issue credit rating as AAA, short term investments with an A-2 short term issue credit rating as AA and short term investments with an A-3 short term issue credit rating as A.

Fixed Maturity Investments and Short Term Investments

At December 31, 2019, our fixed maturity investments and short term investment portfolio had a dollar-weighted average credit quality rating of AA (2018 – AA) and a weighted average effective yield of 2.1% (2018 – 3.2%). At December 31, 2019, our non-investment grade and not rated fixed maturity investments totaled \$828.2 million or 7.4% of our fixed maturity investments (2018 - \$1.0 billion or 12.2%, respectively).

In addition, within our other investments category we have funds that invest in non-investment grade and not rated fixed income securities and non-investment grade cat-linked securities. At December 31, 2019, the funds that invest in non-investment grade and not rated fixed income securities and non-investment grade cat-linked securities totaled \$816.3 million (2018 – \$531.1 million).

At December 31, 2019, we had \$4.6 billion of short term investments (2018 – \$2.6 billion). Short term investments are managed as part of our investment portfolio and have a maturity of one year or less when purchased. Short term investments are carried at fair value. The increase in our allocation to short term investments at December 31, 2019, compared to December 31, 2018, is principally driven by the additional invested assets in certain of our managed joint ventures and third-party capital vehicles that limit investment allocation to shorter term securities.

The duration of our fixed maturity investments and short term investments at December 31, 2019 was 2.9 years (2018 - 2.1 years). From time to time, we may reevaluate the duration of our portfolio in light of the duration of our liabilities and market conditions. The longer duration of our fixed maturity investments and short term investments at December 31, 2019, compared to December 31, 2018, is principally the result of a strategic evaluation of the interest rate sensitivity across our consolidated balance sheet and the duration contribution from our investments portfolio.

The value of our fixed maturity investments will fluctuate with changes in the interest rate environment and when changes occur in economic conditions or the investment markets. Additionally, our differing asset classes expose us to other risks which could cause a reduction in the value of our investments. Examples of some of these risks include:

- Changes in the overall interest rate environment can expose us to “prepayment risk” on our mortgage-backed investments. When interest rates decline, consumers will generally make prepayments on their mortgages and, as a result, our investments in mortgage-backed securities will be repaid to us more quickly than we might have originally anticipated. When we receive these prepayments, our opportunities to reinvest these proceeds back into the investment markets will likely be at reduced interest rates. Conversely, when interest rates increase, consumers will generally make fewer prepayments on their mortgages and, as a result, our investments in mortgage-backed securities will be repaid to us less quickly than we might have originally anticipated. This will increase the duration of our portfolio, which is disadvantageous to us in a rising interest rate environment.
- Our investments in mortgage-backed securities are also subject to default risk. This risk is due in part to defaults on the underlying securitized mortgages, which would decrease the fair value of the investment and be disadvantageous to us. Similar risks apply to other asset-backed securities in which we may invest from time to time.
- Our investments in debt securities of other corporations are exposed to losses from insolvencies of these corporations, and our investment portfolio can also deteriorate based on reduced credit quality of these corporations. We are also exposed to the impact of widening credit spreads even if specific securities are not downgraded.
- Our investments in asset-backed securities are subject to prepayment risks, as noted above, and to the structural risks of these securities. The structural risks primarily emanate from the priority of each security in the issuer’s overall capital structure. We are also exposed to the impact of widening credit spreads.
- Within our other investments category, we have funds that invest in non-investment grade fixed income securities as well as securities denominated in foreign currencies. These investments expose us to losses from insolvencies and other credit-related issues and also to widening of credit spreads. We are also exposed to fluctuations in foreign exchange rates that may result in realized losses to us if our exposures are not hedged or if our hedging strategies are not effective.

Equity Investments Trading

The following table summarizes the fair value of equity investments trading:

At December 31,	2019	2018	Change
(in thousands)			
Financials	\$ 248,189	\$ 200,357	\$ 47,832
Communications and technology	79,206	42,333	36,873
Industrial, utilities and energy	38,583	24,520	14,063
Consumer	35,987	20,639	15,348
Healthcare	29,510	18,925	10,585
Basic materials	5,456	3,478	1,978
Total	<u>\$ 436,931</u>	<u>\$ 310,252</u>	<u>\$ 126,679</u>

We have a diversified public equity securities mandate with a third-party investment manager which currently comprises a portion of our investments included in equity investments trading. In addition, we can also strategically invest in certain more concentrated public equity positions internally, primarily through our ventures business unit. It is possible our equity allocation will increase in the future, and it could, from time to time, have a material effect on our financial results for the reasonably foreseeable future.

Other Investments

The table below shows our portfolio of other investments:

At December 31,	2019	2018	Change
(in thousands)			
Catastrophe bonds	\$ 781,641	\$ 516,571	\$ 265,070
Private equity investments	271,047	242,647	28,400
Senior secured bank loan funds	22,598	14,482	8,116
Hedge funds	12,091	11,233	858
Total other investments	<u>\$ 1,087,377</u>	<u>\$ 784,933</u>	<u>\$ 302,444</u>

We account for our other investments at fair value in accordance with FASB ASC Topic *Financial Instruments*. The fair value of certain of our fund investments, which principally include private equity funds, senior secured bank loan funds and hedge funds, is recorded on our consolidated balance sheet in other investments, and is generally established on the basis of the net valuation criteria established by the managers of such investments, if applicable. The net valuation criteria established by the managers of such investments is established in accordance with the governing documents of such investments. Many of our fund investments are subject to restrictions on redemptions and sales which are determined by the governing documents and limit our ability to liquidate these investments in the short term.

Some of our fund managers and fund administrators are unable to provide final fund valuations as of our current reporting date. We typically experience a reporting lag to receive a final net asset value report of one month for our hedge funds and senior secured bank loan funds and three months for private equity funds, although we have occasionally experienced delays of up to six months at year end, as the private equity funds typically complete their year-end audits before releasing their final net asset value statements.

In circumstances where there is a reporting lag between the current period end reporting date and the reporting date of the latest fund valuation, we estimate the fair value of these funds by starting with the prior month or quarter-end fund valuations, adjusting these valuations for actual capital calls, redemptions or distributions, and the impact of changes in foreign currency exchange rates, and then estimating the return for the current period. In circumstances in which we estimate the return for the current period, all information available to us is utilized. This principally includes using preliminary estimates reported to us by our fund managers, obtaining the valuation of underlying portfolio investments where such underlying investments are publicly traded and therefore have a readily observable price, using information that is available to us with respect to the underlying investments, reviewing various indices for similar investments

or asset classes, and estimating returns based on the results of similar types of investments for which we have obtained reported results, or other valuation methods, where possible. Actual final fund valuations may differ, perhaps materially so, from our estimates and these differences are recorded in our consolidated statement of operations in the period in which they are reported to us, as a change in estimate. Included in net investment income for 2019 is a loss of \$5.5 million (2018 - income of \$0.3 million) representing the change in estimate during the period related to the difference between our estimated net investment income due to the lag in reporting discussed above and the actual amount as reported in the final net asset values provided by our fund managers.

Our estimate of the fair value of catastrophe bonds is based on quoted market prices, or when such prices are not available, by reference to broker or underwriter bid indications. Refer to "Note 6. Fair Value Measurements" in our "Notes to the Consolidated Financial Statements" for additional information regarding the fair value measurement of our investments.

We have committed capital to private equity investments, other investments and investments in other ventures of \$1.1 billion, of which \$708.4 million has been contributed at December 31, 2019. Our remaining commitments to these investments at December 31, 2019 totaled \$411.3 million. In the future, we may enter into additional commitments in respect of private equity investments or individual portfolio company investment opportunities.

Investments in Other Ventures, under Equity Method

The table below shows our investments in other ventures, under equity method:

At December 31, (in thousands, except percentages)	2019			2018		
	Investment	Ownership %	Carrying Value	Investment	Ownership %	Carrying Value
Total Tower Hill Companies	64,750	24.9%	36,779	64,750	24.9%	38,241
Top Layer Re	65,375	50.0%	35,363	65,375	50.0%	46,562
Other	38,964	26.6%	34,407	35,862	30.6%	30,369
Total investments in other ventures, under equity method	<u>\$ 169,089</u>		<u>\$ 106,549</u>	<u>\$ 165,987</u>		<u>\$ 115,172</u>

Except for Top Layer Re, the equity in earnings of the Tower Hill Companies and our other category of investments in other ventures are reported one quarter in arrears. The carrying value of our investments in other ventures, under equity method, individually or in the aggregate may, and likely will, differ from the realized value we may ultimately attain, perhaps significantly so.

Ratings

Financial strength ratings are important to the competitive position of reinsurance and insurance companies. We have received high long-term issuer credit and financial strength ratings from A.M. Best, S&P, Moody's and Fitch, as applicable. These ratings represent independent opinions of an insurer's financial strength, operating performance and ability to meet policyholder obligations, and are not an evaluation directed toward the protection of investors or a recommendation to buy, sell or hold any of our securities. Rating organizations continually review the financial positions of our principal operating subsidiaries and joint ventures and ratings may be revised or revoked by the agencies which issue them.

The ratings of our principal operating subsidiaries and joint ventures and the ERM ratings of RenaissanceRe as of February 3, 2020 are presented below.

	A.M. Best (1)	S&P (2)	Moody's (3)	Fitch (4)
Renaissance Reinsurance Ltd.	A+	A+	A1	A+
DaVinci Reinsurance Ltd.	A	A+	A3	—
Renaissance Reinsurance of Europe Unlimited Company	A+	A+	—	—
Renaissance Reinsurance U.S. Inc.	A+	A+	—	—
RenaissanceRe Europe AG	A+	A+	—	—
RenaissanceRe Specialty U.S.	A+	A+	—	—
Top Layer Reinsurance Ltd.	A+	AA	—	—
Vermeer Reinsurance Ltd.	A	—	—	—
RenaissanceRe Syndicate 1458	—	—	—	—
Lloyd's Overall Market Rating	A	A+	—	AA-
RenaissanceRe	Very Strong	Very Strong	—	—

(1) The A.M. Best ratings for our principal operating subsidiaries and joint ventures represent the insurer's financial strength rating. The Lloyd's Overall Market Rating represents RenaissanceRe Syndicate 1458's financial strength rating. The A.M. Best rating for RenaissanceRe represents its Enterprise Risk Management ("ERM") score.

(2) The S&P ratings for our principal operating subsidiaries and joint ventures represent the insurer's financial strength rating and the issuer's long-term issuer credit rating. The Lloyd's Overall Market Rating represents RenaissanceRe Syndicate 1458's financial strength rating. The S&P rating for RenaissanceRe represents the rating on its ERM practices.

(3) The Moody's ratings represent the insurer's financial strength rating.

(4) The Fitch rating for Renaissance Reinsurance represents the insurer's financial strength rating. The Lloyd's Overall Market Rating represents RenaissanceRe Syndicate 1458's financial strength rating.

A.M. Best

The outlook for all of our A.M. Best ratings is stable. "A+" is the second highest designation of A.M. Best's rating levels. "A+" rated insurance companies are defined as "Superior" companies and are considered by A.M. Best to have a very strong ability to meet their obligations to policyholders. "A" is the third highest designation assigned by A.M. Best, representing A.M. Best's opinion that the insurer has an "Excellent" ability to meet its ongoing obligations to policyholders.

S&P

The outlook for all of our S&P ratings is stable. The "A" range ("A+", "A", "A-"), which is the third highest rating assigned by S&P, indicates that S&P believes the insurers have strong capacity to meet their respective financial commitments but they are somewhat more susceptible to adverse effects or changes in circumstances and economic conditions than insurers rated higher.

Moody's

The outlook for all of our Moody's ratings is stable. Moody's Insurance Financial Strength Ratings represent its opinions of the ability of insurance companies to pay punctually policyholder claims and obligations and senior unsecured debt instruments. Moody's believes that insurance companies rated "A1" and "A3" offer good financial security.

Fitch

The outlook for all of our Fitch ratings is stable. Fitch believes that insurance companies rated "A+" have "Strong" capacity to meet policyholders and contract obligations on a timely basis with a low expectation of ceased or interrupted payments. Insurers rated "AA-" by Fitch are believed to have a very low expectation of ceased or interrupted payments and very strong capital to meet policyholder obligations.

Lloyd's Overall Market Rating

A.M. Best, S&P and Fitch have each assigned a financial strength rating to the Lloyd's overall market. The financial risks to policy holders of syndicates within the Lloyd's market are partially mutualized through the Lloyd's Central Fund, to which all underwriting members contribute. Because of the presence of the Lloyd's Central Fund, and the current legal and regulatory structure of the Lloyd's market, financial strength ratings on individual syndicates would not be particularly meaningful and in any event would not be lower than the financial strength rating of the Lloyd's overall market.

EFFECTS OF INFLATION

The potential exists, after a catastrophe loss, for the development of inflationary pressures in a local economy. We consider the anticipated effects on us in our catastrophe loss models. Our estimates of the potential effects of inflation are also considered in pricing and in estimating reserves for unpaid claims and claim expenses. In addition, it is possible that the risk of general economic inflation has increased which could, among other things, cause claims and claim expenses to increase and also impact the performance of our investment portfolio. The actual effects of this potential increase in inflation on our results cannot be accurately known until, among other items, claims are ultimately settled. The onset, duration and severity of an inflationary period cannot be estimated with precision.

OFF-BALANCE SHEET AND SPECIAL PURPOSE ENTITY ARRANGEMENTS

At December 31, 2019, we had not entered into any off-balance sheet arrangements, as defined in Item 303(a)(4) of Regulation S-K.

CONTRACTUAL OBLIGATIONS

In the normal course of business, we are party to a variety of contractual obligations and these are considered by us when assessing our liquidity requirements. In certain circumstances, our contractual obligations may be accelerated due to defaults under the agreements governing those obligations (including pursuant to cross-default provisions in such agreements) or in connection with certain changes in control of the Company, for example. In addition, in certain circumstances, in the event of a default these obligations may bear an increased interest rate or be subject to penalties.

On March 22, 2019 we acquired TMR and the transaction was accounted under the acquisition method of accounting in accordance with FASB ASC Topic *Business Combinations*. Total consideration paid was allocated among acquired assets and assumed liabilities based on their fair values. Refer to "Note 3. Acquisition of Tokio Millennium Re" in our "Notes to the Consolidated Financial Statements" for additional information related to the acquisition of TMR.

The table below shows our contractual obligations:

At December 31, 2019	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
(in thousands)					
Long term debt obligations (1)					
3.600% Senior Notes due 2029	\$ 533,747	\$ 14,400	\$ 28,800	\$ 28,800	\$ 461,747
3.450% Senior Notes due 2027	\$ 377,615	\$ 10,350	\$ 20,700	\$ 20,700	\$ 325,865
3.700% Senior Notes due 2025	358,264	11,100	22,200	22,200	302,764
5.750% Senior Notes due 2020	252,918	252,918	—	—	—
4.750% Senior Notes due 2025 (DaVinciRe) (1)	187,991	7,125	14,250	14,250	152,366
Total long term debt obligations	1,710,535	295,893	85,950	85,950	1,242,742
Private equity and investment commitments (2)	411,262	411,262	—	—	—
Operating lease obligations	40,657	7,912	14,651	6,809	11,285
Capital lease obligations	25,628	3,336	6,672	5,491	10,129
Payable for investments purchased	225,275	225,275	—	—	—
Reserve for claims and claim expenses (3)	9,384,349	2,627,618	4,410,643	3,002,993	(656,905)
Total contractual obligations	<u>\$ 11,797,706</u>	<u>\$ 3,571,296</u>	<u>\$ 4,517,916</u>	<u>\$ 3,101,243</u>	<u>\$ 607,251</u>

(1) Includes contractual interest payments.

(2) The private equity and investment commitments do not have a defined contractual commitment date and we have therefore included them in the less than one year category.

(3) Because of the nature of the coverages we provide, the amount and timing of the cash flows associated with our policy liabilities will fluctuate, perhaps significantly, and therefore are highly uncertain. We have based our estimates of future claim payments on available relevant sources of loss and allocated loss adjustment expense development data and benchmark industry payment patterns. These benchmarks are revised periodically as new trends emerge. We believe that it is likely that this benchmark data will not be predictive of our future claim payments and that material fluctuations can occur due to the nature of the losses which we insure and the coverages which we provide.

CURRENT OUTLOOK

Property Exposed Market Developments

We estimate that the insurance and reinsurance markets experienced approximately \$75 billion of insured catastrophe loss in 2019 from events including Hurricane Dorian, Typhoons Faxai and Hagibis, and the significant wildfires in California. These events follow a number of significant large loss events in 2018, including Typhoons Jebi, Mangkhut and Trami, Hurricanes Florence and Michael, and wildfires across the state of California, as well as the significant natural disasters in 2017, including Hurricanes Harvey, Irma and Maria, the Mexico City Earthquake, and wildfires in many areas of California. In addition, the market has been impacted by continuing, significant adverse developments from these events, particularly Typhoon Jebi and Hurricanes Irma and Michael. In sum, we estimate that 2017 and 2018 represent the largest back-to-back years for insured natural disaster losses in history, and view the incidents experienced in 2019 as consistent with this trend.

Given the nature and breadth of these events, the associated losses over this period affected an unusually large number of regions, and, accordingly, insureds, reinsurance lines and reinsurers. In addition, the ultimate scale of the losses, difficulty of loss estimation, length of payout periods, social inflation risk and other factors have contributed to uncertainty around these loss events, both individually and in the aggregate. Moreover, we believe a large number of our clients and competitors have been impacted by significant ongoing adverse developments on these large events; in particular, we estimate that the industry's reported adverse developments on Typhoon Jebi and on Hurricane Irma would each represent, by themselves, historically large insured loss events. We believe that the adverse development in respect of these various disasters arises from factors including: underestimations of exposure and incurred loss; loss

reporting delays in the regions impacted by Typhoon Jebi; aggressive litigation and adjustment practices, particularly, but not limited to, in the state of Florida; other elevated loss adjustment expenses; and other factors. We continue to estimate that Typhoon Faxai will approach a \$10 billion industry event and currently estimate likely industry-wide insured losses arising from Typhoon Hagibis at approximately \$15 billion, subject in each case to significant uncertainty.

We believe that revised views of risk as a result of these experiences, both in respect of the Japanese and U.S. markets and perils, and the potential diminishment of capacity or risk appetite from the insurance-linked securities market, may contribute favorably to market conditions in future periods, although there can be no assurance that these developments will occur or be sustained.

Based on our experience, intermediary reports and other industry commentary, in respect of the January 2020 renewal, rates for retrocessional reinsurance and some lines of primary insurance were up substantially, while rates on other layers of reinsurance, if loss free in expiring periods, were up less markedly. Loss affected reinsurance programs and lines, such as treaties exposed to the California wildfires, did manifest more substantially improved terms. These developments facilitated our growth in gross premiums written, both in our existing operations and more particularly by presenting opportunities to deploy additional third-party capital. Nonetheless, in respect of certain regions and perils we continue to assess that prevailing rate increases were not sufficient to offset increases in exposure, continuing risks from social inflation and the potential for sustained elevation in exposure due to changes in climate conditions and demographics. Moreover, we believe that the adverse impact of years of sustained reinsurance rate decreases have not yet been offset by the recent positive rate environment. Accordingly, we sought to re-balance our portfolio, and to access forms of portfolio protection to further our capacity to support our clients while maximizing the estimated efficiency of our retained risk portfolio.

We believe it is possible that these large loss events, the scale and pace of adverse developments and other market dynamics may contribute to sustained general market dynamics that could continue to support improving market conditions in lines and regions we target, and in which we have differentiating expertise. In addition, public rate filings, reports from intermediaries and public reports from primary insurance companies reflect rate increases in the U.S. in respect of property-exposed direct insurance coverages, as well as complex commercial lines. We also expect that the broader market will reflect rate increases in respect of retrocessional coverages. Accordingly, we currently intend to allocate relatively more capital in coming periods to our assumed retrocessional portfolio, target products in the U.S. excess and surplus lines direct insurance market, and our other property business. We also anticipate continuing improvements in the reinsurance sector overall, in particular, with respect to the complex, holistic and bespoke product coverages for which we believe we have competitive advantages. However, at this time we cannot know with certainty whether any such positive developments will transpire or be sustained, or the degree to which we will continue to benefit from them. Moreover, we are carefully monitoring ongoing, adverse trends in the Florida market with respect to claims practices, litigation risks, and exposure growth, and are prepared to continue to reduce our exposure to risks and accounts exposed to these trends.

We expect that over time reinsurance demand for many coverages and solutions will continue to lag the pace of growth in available capital. We believe we are well positioned to benefit from these developments as shown, for example, in our efforts to optimize our gross-to-net portfolio. However, we estimate that in 2019, and in respect of the January 2020 renewal season, capital supply from alternative capital providers was more constrained than in past periods. It is possible that the recent large loss events, and the uncertainty relating to the ultimate insured losses arising from these events, may contribute to a continuation of this trend for the capital raising cycle in respect of the April and June 1, 2020 market renewals. Nonetheless, over the medium and longer term, we anticipate the market will continue to be characterized by an ample supply of capital, including third-party capital, notwithstanding the significant impacts of the large loss events of 2017, 2018 and 2019, and the continuing adverse developments therefrom.

Furthermore, cedants in many of the key markets we serve are large and increasingly sophisticated. They may be able to manage large and growing retentions, access risk transfer capital in expanding forms, and may seek to focus their reinsurance relationships on a core group of well-capitalized, highly-rated reinsurers who can provide a complete product suite as well as value-added service. While we believe we are well positioned to compete for business we find attractive, these dynamics may limit the degree to which the

market sustains favorable improvements in the near-term or continue to introduce or exacerbate long-term challenges in our markets.

Casualty and Specialty Exposed Market Developments

Certain of the markets in which our Casualty and Specialty segment operate generally experienced favorable rate trends in respect of the January 2020 renewals. Moreover, we also saw meaningful improvements in terms and conditions, including broad-based reductions in ceding commissions. Concurrently, however, the casualty and specialty markets have continued to broadly exhibit adverse loss development and negative exposure trends, including a meaningful increase in both the incidence and severity of civil jury awards. In 2019, we observed favorable conditions for accounts that exhibited elevated loss emergence or underlying rate deterioration, but we also estimate that the favorable market trends have extended more broadly. In the near term, we expect that current pricing trends exhibited during the year are likely to continue, with terms and conditions for loss-affected lines of business continuing to show moderate improvement and certain other areas of the casualty and specialty market potentially maintaining less pronounced but positive adjustments. As a whole, we continue to believe that pockets of casualty and specialty lines may provide attractive opportunities for stronger or well-positioned reinsurers, and that, given our strong ratings, expanded product offerings, and increased U.S. market presence, we are well positioned to compete for business that we find attractive. At the same time, we also estimate that underlying loss costs for many casualty and specialty lines of business will continue to rise. We plan to continue to seek unique or differentiated opportunities to provide coverage on large programs open to us on a differentiated basis or to select markets. However, we cannot assure you that positive market trends will continue, that we will succeed in identifying and expanding on attractive programs or obtain potentially attractive new programs, or that future, currently unforeseen, developments will not adversely impact the casualty and specialty markets.

Relatedly, specific renewal terms vary widely by insured account and our ability to shape our portfolio to improve its estimated risk and return characteristics is subject to a range of competitive and commercial factors. We cannot assure you that these positive dynamics will be sustained, or that we will participate fully in improving terms. We intend to seek to maintain strong underwriting discipline and, in light of prevailing market conditions, cannot provide assurance that we will succeed in growing or maintaining our current combined in-force book of business.

General Economic Conditions

Underlying economic conditions in several of the key markets we serve remained generally stable in 2019, with certain of our core markets, including the U.S., experiencing economic growth supported by decreases in some prevailing interest rates, and continued quantitative easing policies by some major central banks, partly offset by reporting declines in manufacturing activity in certain key markets and a reduction in trade flows. Economic growth contributes positively to demand for our coverages and services, particularly in jurisdictions with high insurance penetration and the potential for risk concentration. We also continue to seek and participate in efforts to enhance insurance penetration in respect of select perils and regions, although such efforts are complex and frequently long-term and uncertain in nature.

We continue to believe that meaningful risk remains related to political and economic uncertainty, economic weakness, or adverse disruptions in general economic and financial market conditions. Moreover, any future economic growth may be at a comparatively suppressed rate for a relatively extended period of time, particularly given the length of the U.S. economic cycle. Declining or weak economic conditions could reduce demand for the products sold by us or our customers, impact the risk-adjusted attractiveness and absolute returns and yields of our investment portfolio, or weaken our overall ability to write business at risk-adequate rates. Persistent low levels of economic activity could also adversely impact other areas of our financial performance, by contributing to unforeseen premium adjustments, mid-term policy cancellations, commutations or asset devaluations, among other things. In addition, it is possible that increasing uncertainties related to cross-border trade may reduce economic growth for specific sectors which drive the insurance market disproportionately. In particular, our specialty and casualty reinsurance and Lloyd's portfolios could be exposed to risks arising from economic weakness or dislocations, including with respect to a potential increase of claims in directors and officers, errors and omissions, surety, casualty clash and other lines of business. In addition, we believe our consolidated credit risk, reflecting our counterparty dealings with customers, agents, brokers, retrocessionaires, capital providers and parties associated with

our investment portfolio, among others, is likely to be higher during a period of economic weakness. Any of the foregoing or other outcomes of a period of economic weakness could adversely impact our financial position or results of operations.

The sustained environment of low interest rates in recent years lowered the yields at which we invest our assets relative to longer-term historical levels. In 2019, decreases in prevailing interest rates contributed significantly to comparably high net realized and unrealized gains from our invested assets. However, as we invest cash from new premiums written or reinvest the proceeds of invested assets that mature or that we choose to sell, we expect the yield on our portfolio to be adversely impacted by a declining interest rate environment. While it is possible that yields will improve in future periods, we currently anticipate a period of declining interest rates and broader uncertainty. We are unable to predict with certainty when conditions will substantially and sustainably improve, or the pace of any such improvement.

We continue to monitor the risk that our principal markets will experience increased inflationary conditions, potentially exacerbated by interest rate cuts. Inflationary conditions would cause costs related to our claims and claim expenses to increase and impact the performance of our investment portfolio, among other things. The onset, duration and severity of an inflationary period cannot be estimated with precision.

Legislative and Regulatory Update

In prior Congressional sessions, Congress has considered a range of potential legislation which would, if enacted, provide for matters such as the creation of (i) a federal reinsurance catastrophe fund; (ii) a federal consortium to facilitate qualifying state residual markets and catastrophe funds in securing reinsurance; and (iii) a federal bond guarantee program for state catastrophe funds in qualifying state residual markets. In April 2016, H.R.4947, the Natural Disaster Reinsurance Act of 2016, which would create a federal reinsurance program to cover any losses insured or reinsured by eligible state programs arising from natural catastrophes, including losses from floods, earthquakes, tropical storms, tornadoes, volcanic eruption and winter storms, was introduced. If enacted, this bill, or legislation, similar to any of these proposals, would, we believe, likely contribute to the growth of state entities offering below-market priced insurance and reinsurance in a manner adverse to us and market participants more generally. Such legislation could also encourage cessation, or even reversal, of reforms and stabilization initiatives that have been enacted in the state of Florida and other catastrophe-exposed states in recent years. While we believe such legislation will continue to be vigorously opposed, if adopted these bills would likely diminish the role of private market catastrophe reinsurers and could adversely impact our financial results, perhaps materially.

In June 2012, Congress passed the Biggert-Waters Bill, which provided for a five-year renewal of the National Flood Insurance Program (the "NFIP") and, among other things, authorized the Federal Emergency Management Agency ("FEMA") to carry out initiatives to determine the capacity of private insurers, reinsurers, and financial markets to assume a greater portion of the flood risk exposure in the U.S., and to assess the capacity of the private reinsurance market to assume some of the program's risk. Commencing in January 2017, FEMA has, acting under authority contemplated by the Biggert-Waters Bill, secured annual reinsurance protection for the NFIP. Most recently, in January 2020, FEMA announced that it had renewed its reinsurance program to provide for \$1.33 billion of protection in respect of 2020, covering 10.25% of NFIP's losses between \$4 billion and \$6 billion, 34.7% of its losses between \$6 billion and \$8 billion, and 21.8% of its losses between \$8 billion and \$10 billion. In addition, NFIP has procured an additional \$500 million of private market protection via the FloodSmart Re \$500 million Series 2018-1 Notes. It is possible this program will continue and potentially expand in future periods and may encourage other U.S. federal programs to explore private market risk transfer initiatives; however, we cannot assure you that any such developments will in fact occur, or that if they do transpire we will succeed in participating.

The statutory authorization for the operation and continuation of the NFIP has expired and received a series of short-term extensions. The NFIP's current authorization has been extended to September 30, 2020. In January 2019, the Federal Deposit Insurance Corp. and Office of the Comptroller of the Currency issued rules requiring lenders to accept private flood insurance policies that have coverage at least as comprehensive as that offered by NFIP, and providing a framework to evaluate alternative flood coverage; these rules went into effect on July 1, 2019. Congress is also considering legislative language that would direct FEMA to consider policyholders who discontinue an NFIP policy and then later return to the NFIP as having continuous coverage if they can demonstrate that a flood insurance policy from a private firm was maintained throughout the interim period. To the extent these laws, rules and regulations are adopted and enforced, they could incrementally contribute to the growth of private residential flood opportunities and the financial stabilization of the NFIP. However, reauthorization of the NFIP remains subject to meaningful uncertainty; and whether a successful reauthorization would continue market-enhancing reforms is significantly uncertain. Accordingly, we cannot assure you that legislation to reform the NFIP will indeed be enacted or that the private market for residential flood protection will be enhanced if it is.

In recent years, market conditions for insurance in the state of Florida have been significantly impacted by the increasingly prevalent utilization of a practice referred to as "assignment of benefits," or "AOB." We currently estimate that the impacts of AOB have contributed adversely and significantly to the ultimate economic losses borne by the insurance market in light of recent large Florida loss events, including Hurricanes Irma and Michael. An AOB is an instrument executed by a primary policyholder that is deemed to permit certain third parties, such as water extraction companies, roofers or plumbers, to "stand in the shoes" of the insured and seek direct payments from the policyholder's insurance company.

In April 2019, SB 122: The Insurance Assignment Agreements Act (the "AOB Reform Bill") became law in Florida, effective July 1, 2019. Among other things, the AOB Reform Bill is intended to change the way attorneys' fees are calculated to provide less incentive for plaintiff attorneys to file frivolous suits; requires written notice to the insurer of a filing; more clearly informs insureds of their rights; allows Florida domestic insurers the option of offering policies with and without AOB language included; and requires service providers in Florida to give an insurer and the consumer prior written notice of at least 10 business days before filing suit on a claim. While we are cautiously optimistic that this law could somewhat mitigate, in respect of losses subsequent to July 2019, some of the more egregious practices that have contributed to adverse industry results in Florida, we continue believe that the likely estimated impact to exposed loss in reinsurance treaties and programs will not be material. In addition, the AOB Reform Bill is not intended to remediate the adverse impacts of earlier events, such as the large losses in 2017 and 2018, which continue to exhibit loss development well beyond modeled expectations. Moreover, industry organizations have reported that there was a measurable spike in AOB filings before the bill's effective date of July 1, 2019 and that plaintiff firms have announced identified "workarounds" to the AOB Reform Bill provisions. In general, we continue to estimate that the dynamics and practices we refer to as "social inflation" will continue to adversely impact loss trends in Florida. Moreover, reforms of social inflation trends in Florida or other jurisdictions do not impact the increased risks attributable to changes in climate, demographics and other factors which we estimate are increasing the probability and severity of meteorologically-driven hazards.

In January 2020 media reports announced that the rating agency responsible for assigning financial stability ratings ("FSR") to more than 40 Florida domestic insurers had warned that several carriers would be expected to receive downgrades due to deteriorating conditions in the state's property insurance market, and that more than a dozen of such carriers could be downgraded in the next few months. Factors cited by this agency included what the firm deemed to be the cumulative impact of prolonged periods of inadequate rate revisions by these carriers, as well as state judicial rulings adversely impacting claims awards, including in respect of the natural disasters of recent years.

Further, in February 2020, legislation was introduced in the Florida Senate, Bill No. SB 1334, which would, if ultimately adopted, significantly expand the Florida Hurricane Catastrophe Fund for a statutory period of several years. This bill was just introduced, and we cannot assess yet its likelihood of passage or the impact it would have on the market or us if adopted. However, in general, expansion of state programs such as that contemplated by the bill reduce private market opportunities. In sum, taken together, these ongoing challenges have impacted our own risk selection criteria with respect to Florida exposures, and our estimation of the number of programs we believe are likely to be submitted at attractive risk-adjusted terms in respect of the June 2020 renewal.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following risk management discussion and the estimated amounts generated from sensitivities presented are forward-looking statements of market risk assuming certain market conditions occur. Actual results in the future may differ materially from these estimated results due to, among other things, actual developments in the global financial markets and changes in the composition of our investment portfolio, derivatives and product offerings. The results of analysis used by us to assess and mitigate risk should not be considered projections of future events or losses. Refer to “Note On Forward-Looking Statements” for additional discussion regarding forward-looking statements included herein.

We are principally exposed to four types of market risk: interest rate risk; foreign currency risk; credit risk; and equity price risk. As a result of the acquisition of TMR expanding the geographic scope of our operations and the size of our investment portfolio, our exposure to each of these market risks increased. Our policies to address these risks in 2019 were not materially different than those used in 2018.

Our investment guidelines permit, subject to approval, investments in derivative instruments such as futures, options, foreign currency forward contracts and swap agreements, which may be used to assume risks or for hedging purposes. Refer to “Note 19. Derivative Instruments” in our “Notes to the Consolidated Financial Statements” for additional information related to derivatives we have entered into.

Interest Rate Risk

Interest rate risk is the price sensitivity of a security to changes in interest rates. Our investment portfolio includes fixed maturity investments and short term investments, whose fair values will fluctuate with changes in interest rates. Our liabilities are accrued at a static rate in accordance with GAAP. However, we consider our liabilities, namely our net claims and claims expenses, to have an economic exposure to inflation and interest rate risk. As a result, we are exposed to interest rate risk with respect to our overall net economic asset position and more generally from an accounting standpoint since the assets are carried at fair value, while liabilities are accrued at a static rate.

We may utilize derivative instruments via an interest rate overlay strategy, for example, to manage or optimize our duration and curve exposures. In addition, we attempt to maintain adequate liquidity in our fixed maturity investments portfolio to fund operations, pay reinsurance and insurance liabilities and claims and provide funding for unexpected events.

The following tables summarize the aggregate hypothetical increase (decrease) in fair value from an immediate parallel shift in the treasury yield curve, assuming credit spreads remain constant, reflecting the use of an immediate time horizon since this presents the worst-case scenario, in our fixed maturity investment and short term investments portfolio for the years indicated:

At December 31, 2019	Interest Rate Shift in Basis Points				
	-100	-50	Base	50	100
(in thousands, except percentages)					
Fair value of fixed maturity and short term investments \$	16,099,052	\$ 15,918,493	\$ 15,737,932	\$ 15,557,371	\$ 15,376,808
Net increase (decrease) in fair value	\$ 361,120	\$ 180,561	\$ —	\$ (180,561)	\$ (361,124)
Percentage change in fair value	2.3%	1.1%	—%	(1.1)%	(2.3)%

At December 31, 2018	Interest Rate Shift in Basis Points				
	-100	-50	Base	50	100
(in thousands, except percentages)					
Fair value of fixed maturity and short term investments \$	10,877,855	\$ 10,777,893	\$ 10,675,390	\$ 10,571,175	\$ 10,466,211
Net increase (decrease) in fair value	\$ 202,465	\$ 102,503	\$ —	\$ (104,215)	\$ (209,179)
Percentage change in fair value	1.9%	1.0%	—%	(1.0)%	(2.0)%

As noted above, we use derivative instruments, namely interest rate futures, within our portfolio of fixed maturity investments to manage our exposure to interest rate risk, which can include increasing or decreasing our exposure to this risk. At December 31, 2019, we had \$2.5 billion of notional long positions and \$1.0 billion of notional short positions of primarily Eurodollar, U.S. Treasury and non-U.S. dollar futures contracts (2018 - \$1.9 billion and \$545.8 million, respectively). At December 31, 2019, we had \$27.9 million of notional positions paying a fixed rate and \$25.5 million receiving a fixed rate denominated in U.S. dollar swap contracts (2018 - \$78.4 million and \$32.1 million, respectively). Refer to "Note 19. Derivative Instruments" in our "Notes to the Consolidated Financial Statements" for additional information related to interest rate futures and swaps entered into by us.

At December 31, 2019, the aggregate hypothetical impact of an immediate upward parallel shift in the treasury yield curve of 100 basis points would be a decrease in the market value of our net position in interest rate futures of approximately \$75.6 million and a decrease in the market value of our net position in interest rate swaps of approximately \$1.6 million. Conversely, at December 31, 2019, the aggregate hypothetical impact of an immediate downward parallel shift in the treasury yield curve of 100 basis points would be an increase in the market value of our net position in interest rate futures of approximately \$81.5 million and an increase in the market value of our net position in interest rate swaps of approximately \$1.6 million. The foregoing reflects the use of an immediate time horizon, since this presents the worst-case scenario. Credit spreads are assumed to remain constant in these hypothetical examples.

Foreign Currency Risk

Our functional currency for consolidated reporting purposes is the U.S. dollar. We routinely write a portion of our business in currencies other than U.S. dollars and invest a portion of our cash and investment portfolio in those currencies. In addition, and in connection with the acquisition of TMR, we acquired certain entities with non-U.S. dollar functional currencies. As a result, we may experience foreign exchange gains and

losses in our consolidated financial statements. We are primarily impacted by the foreign currency risk exposures noted below, and may, from time to time, enter into foreign currency forward and option contracts to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities. Refer to "Note 19. Derivative Instruments" in our "Notes to the Consolidated Financial Statements" for additional information related to foreign currency forward and option contracts we have entered into. We may determine to not match a portion of our projected liabilities in foreign currencies with investments in the same currencies, which would increase our exposure to foreign currency fluctuations and increase the volatility of our results of operations.

Underwriting Operations

Our foreign currency policy with regard to our underwriting operations is generally to enter into foreign currency forward and option contracts for notional values that approximate the foreign currency liabilities, including claims and claim expense reserves and reinsurance balances payable, net of any cash, investments and receivables held in the respective foreign currency. Our use of foreign currency forward and option contracts is intended to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities associated with our underwriting operations.

Investment Portfolio

Our investment portfolio is exposed to currency fluctuations through our investments in non-U.S. dollar fixed maturity investments, short term investments and other investments. To economically hedge our exposure to currency fluctuations from these investments, we may enter into foreign currency forward contracts. In certain instances, we may assume foreign exchange risk as part of our investment strategy. Realized and unrealized foreign exchange gains or losses from the sale of our non-U.S. dollar fixed maturity investments trading and other investments, and foreign exchange gains or losses associated with our hedging of these non-U.S. dollar investments are recorded in net foreign exchange (losses) gains in our consolidated statements of operations. In the future, we may choose to increase our exposure to non-U.S. dollar investments.

The following tables summarize the principal currencies creating foreign exchange risk for us and our net foreign currency exposures and the impact of a hypothetical 10% change in our net foreign currency exposure, keeping all other variables constant, as of the dates indicated:

At December 31, 2019	AUD	CAD	EUR	GBP	JPY	NZD	Other	Total
(in thousands, except for percentages)								
Net assets (liabilities) denominated in foreign currencies	\$ 109,915	\$ 63,473	\$ 217,652	\$ (12,856)	\$ (361,083)	\$ (74,042)	\$ (44,393)	\$ (101,334)
Net foreign currency derivatives notional amounts	(74,862)	(48,918)	(255,935)	135,296	412,590	64,332	5,369	237,872
Total net foreign currency exposure	<u>\$ 35,053</u>	<u>\$ 14,555</u>	<u>\$ (38,283)</u>	<u>\$ 122,440</u>	<u>\$ 51,507</u>	<u>\$ (9,710)</u>	<u>\$ (39,024)</u>	<u>\$ 136,538</u>
Net foreign currency exposure as a percentage of total shareholders' equity attributable to RenaissanceRe	0.6%	0.2%	(0.6)%	2.1%	0.9%	(0.2)%	(0.7)%	2.3%
Impact of a hypothetical 10% change in total net foreign currency exposure	\$ (3,505)	\$ (1,456)	\$ 3,828	\$ (12,244)	\$ (5,151)	\$ 971	\$ 3,902	\$ (13,654)

At December 31, 2018	AUD	CAD	EUR	GBP	JPY	NZD	Other	Total
(in thousands, except for percentages)								
Net (liabilities) assets denominated in foreign currencies	\$ (7,428)	\$ 57,425	\$ 190,573	\$ (94,769)	\$ (233,041)	\$ (15,495)	\$ (36,968)	\$ (139,703)
Net foreign currency derivatives notional amounts	(2,360)	(54,656)	(136,404)	98,195	163,909	16,413	10,030	95,127
Total net foreign currency exposure	<u>\$ (9,788)</u>	<u>\$ 2,769</u>	<u>\$ 54,169</u>	<u>\$ 3,426</u>	<u>\$ (69,132)</u>	<u>\$ 918</u>	<u>\$ (26,938)</u>	<u>\$ (44,576)</u>
Net foreign currency exposure as a percentage of total shareholders' equity attributable to RenaissanceRe	(0.2)%	0.1%	1.1%	0.1%	(1.4)%	—%	(0.5)%	(0.9)%
Impact of a hypothetical 10% change in total net foreign currency exposure	\$ 979	\$ (277)	\$ (5,417)	\$ (343)	\$ 6,913	\$ (92)	\$ 2,694	\$ 4,458

Credit Risk

Credit risk relates to the uncertainty of a counterparty's ability to make timely payments in accordance with contractual terms of the instrument or contract and market risk associated with changes in credit spreads. We are primarily exposed to direct credit risk within our portfolios of fixed maturity and short term investments, and through customers and reinsurers in the form of premiums receivable and reinsurance recoverables, respectively, as discussed below.

Fixed Maturity Investments and Short Term Investments

Credit risk related to our fixed maturity investments and short term investments is the exposure to adverse changes in the creditworthiness of individual investment holdings, issuers, groups of issuers, industries and countries. We manage credit risk in our fixed maturity investments and short term investments through the credit research performed primarily by the investment management service providers and our evaluation of these investment managers adherence to investment mandates provided to them. The management of credit risk in the investment portfolio is integrated in our credit risk management governance framework and the management of credit exposures and concentrations within the investment portfolio are carried out in accordance with our risk policies, limits and risk concentrations as overseen by the Investment and Risk Management Committee of our Board of Directors. In the investment portfolio, we review on a regular basis our asset concentration, credit quality and adherence to credit limit guidelines. At December 31, 2019, our fixed maturity investments and short term investment portfolio had a dollar-weighted average credit quality rating of AA (2018 - AA). In addition, we limit the amount of credit exposure to any one financial institution and, except for the securities of the U.S. Government and U.S. Government related entities, and money market securities, none of our investments exceeded 10% of shareholders' equity at December 31, 2019.

The following table summarizes the ratings of our fixed maturity investments and short term investments (using ratings assigned by S&P and/or other rating agencies when S&P ratings were not available) as a percentage of total fixed maturity investments and short term investments as of the dates indicated:

<u>At December 31,</u>	<u>2019</u>	<u>2018</u>
AAA	35.8%	31.4%
AA	44.0%	44.5%
A	9.3%	8.7%
BBB	5.6%	6.2%
Non-investment grade	4.9%	8.4%
Not rated	0.4%	0.8%
Total	<u>100.0%</u>	<u>100.0%</u>

We consider the impact of credit spread movements on the fair value of our fixed maturity and short term investments portfolio. As credit spreads widen, the fair value of our fixed maturity and short term investments decreases, and vice versa.

The following tables summarize the aggregate hypothetical increase (decrease) in fair value from an immediate parallel shift in credit spreads, assuming the treasury yield curve remains constant, reflecting the use of an immediate time horizon since this presents the worst-case scenario, in our fixed maturity investments and short term investments portfolio for the years indicated:

At December 31, 2019 (in thousands, except percentages)	Credit Spread Shift in Basis Points				
	-100	-50	Base	50	100
Fair value of fixed income and short term investments	\$ 15,879,718	\$ 15,833,057	\$ 15,737,932	\$ 15,626,356	\$ 15,514,779
Net increase (decrease) in fair value	\$ 141,786	\$ 95,125	\$ —	\$ (111,576)	\$ (223,153)
Percentage change in fair value	0.9%	0.6%	—%	(0.7)%	(1.4)%

At December 31, 2018 (in thousands, except percentages)	Credit Spread Shift in Basis Points				
	-100	-50	Base	50	100
Fair value of fixed income and short term investments	\$ 10,804,654	\$ 10,750,213	\$ 10,675,390	\$ 10,589,321	\$ 10,503,252
Net increase (decrease) in fair value	\$ 129,264	\$ 74,823	\$ —	\$ (86,069)	\$ (172,138)
Percentage change in fair value	1.2%	0.7%	—%	(0.8)%	(1.6)%

We also employ credit derivatives in our investment portfolio to either assume credit risk or hedge our credit exposure. At December 31, 2019, we had outstanding credit derivatives of \$0.5 million in notional long positions (short credit) and \$143.4 million in notional short positions (long credit), denominated in U.S. dollars (2018 - \$1.0 million and \$126.2 million, respectively). Refer to "Note 19. Derivative Instruments" in our "Notes to the Consolidated Financial Statements" for additional information related to credit derivatives entered into by us. The aggregate hypothetical market value impact from an immediate upward shift in credit spreads of 100 basis points would cause a decrease in the market value of our net position in these derivatives of approximately \$8.9 million at December 31, 2019. Conversely, the aggregate hypothetical market value impact from an immediate downward shift in credit spreads of 100 basis points would cause an increase in the market value of our net position in these derivatives of approximately \$8.9 million at December 31, 2019. For an immediate downward shift in credit spreads, we do not allow credit spreads to go negative in calculating the impact. The foregoing reflects the use of an immediate time horizon, since this presents the worst-case scenario.

Premiums Receivable and Reinsurance Recoverable

Premiums receivable from ceding companies are subject to credit risk. To mitigate credit risk related to reinsurance premiums receivable, we have established standards for ceding companies and, in most cases, have a contractual right of offset allowing us to settle claims net of any reinsurance premiums receivable. We also have reinsurance recoverable amounts from our reinsurers. To mitigate credit risk related to our reinsurance recoverable amounts, we consider the financial strength of our reinsurers when determining whether to purchase coverage from them. We generally obtain reinsurance coverage from companies rated "A-" or better by S&P unless the obligations are collateralized. We routinely monitor the financial performance and rating status of all material reinsurers. Refer to "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Summary of Critical Accounting Estimates, Reinsurance Recoverables" for additional information with respect to reinsurance recoverable.

Equity Price Risk

Equity price risk is the potential loss arising from changes in the market value of equities. As detailed in the table below, we are directly exposed to this risk through our investment in equity investments trading which are traded on nationally recognized stock exchanges; and indirectly exposed to this risk through our investments in: (1) private equity investments whose exit strategies often depend on the equity markets; and (2) other ventures, under equity method. We may use equity derivatives in our investment portfolio to either assume equity risk or hedge our equity exposure. The following table summarizes a hypothetical 10% increase and decline in the carrying value of our equity investments trading, private equity investments, hedge funds and investments in other ventures, under equity method, holding all other factors constant, at the dates indicated:

At December 31, (in thousands, except for percentages)	2019		2018	
Equity investments trading, at fair value	\$	436,931	\$	310,252
Private equity investments, at fair value		271,047		242,647
Investments in other ventures, under equity method		106,549		115,172
Hedge funds, at fair value		12,091		11,233
Total carrying value of investments exposed to equity price risk	\$	826,618	\$	679,304
Impact of a hypothetical 10% increase in the carrying value of investments exposed to equity price risk	\$	82,662	\$	67,930
Impact of a hypothetical 10% decrease in the carrying value of investments exposed to equity price risk	\$	(82,662)	\$	(67,930)

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Reference is made to Item 15 of this Report for the Consolidated Financial Statements of RenaissanceRe and the Notes thereto, as well as the Schedules to the Consolidated Financial Statements.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(b) and 15d-15(b) of the Exchange Act, as of the end of the period covered by this report. Based upon that evaluation, our management, including our Chief Executive Officer and Chief Financial Officer, concluded that, at December 31, 2019, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in Company reports filed or submitted under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Our internal control over financial reporting was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external

purposes in accordance with U.S. generally accepted accounting principles and to reflect management's judgments and estimates concerning effects of events and transactions that are accounted for or disclosed.

Our internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and the dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

There are inherent limitations to the effectiveness of any controls. Our Board of Directors and management, including our Chief Executive Officer and Chief Financial Officer, do not expect that our disclosure controls and procedures or internal control over financial reporting will prevent all errors and all fraud. Controls, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the controls are met. Further, we believe that the design of controls must reflect appropriate resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in controls, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within RenaissanceRe have been detected.

Management, with the participation of the Chief Executive Officer and Chief Financial Officer, assessed our internal control over financial reporting as of December 31, 2019 using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on this assessment, management concluded that RenaissanceRe's internal control over financial reporting was effective as of December 31, 2019.

Under guidelines established by the SEC, companies are allowed to exclude acquisitions from their first assessment of internal control over financial reporting following the date of acquisition. Based on those guidelines, management's assessment of the effectiveness of RenaissanceRe's internal control over financial reporting excluded TMR, which was acquired on March 22, 2019. TMR represented approximately 17.3% of the Company's total assets at December 31, 2019 and approximately 16.8% of the Company's net income for the year ended December 31, 2019. Refer to "Note 3. Acquisition of Tokio Millennium Re" in our "Notes to the Consolidated Financial Statements" for additional information regarding the acquisition of TMR.

Ernst & Young Ltd., the independent registered public accountants who audited our consolidated financial statements included in this Form 10-K, audited our internal control over financial reporting as of December 31, 2019 and their attestation report on our internal control over financial reporting appears below.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2019, which were identified in connection with our evaluation required pursuant to Rules 13a-15 or 15d-15 under the Exchange Act, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of RenaissanceRe Holdings Ltd.

Opinion on Internal Control Over Financial Reporting

We have audited RenaissanceRe Holdings Ltd. and subsidiaries' internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, RenaissanceRe Holdings Ltd. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

As indicated in the accompanying Management's Annual Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of TMR, which is included in the 2019 consolidated financial statements of the Company and constituted approximately 17.3% of total assets, as of December 31, 2019 and approximately 16.8% net income for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of TMR.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of RenaissanceRe Holdings Ltd. and subsidiaries as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and schedules of the Company and our reports dated February 7, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young Ltd.

Hamilton, Bermuda

February 7, 2020

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item relating to our directors, executive officers and corporate governance is incorporated herein by reference to information found in our Proxy Statement for the Annual General Meeting of Shareholders to be held on May 18, 2020 (our "Proxy Statement"). We intend to file our Proxy Statement no later than 120 days after the close of the fiscal year.

We have adopted a Code of Ethics within the meaning of Item 406 of Regulation S-K of the Exchange Act that applies to all of our directors and employees, including our principal executive officer, principal financial officer, principal accounting officer, controller and other persons performing similar functions. The Code of Ethics is available free of charge on our website *www.renre.com*. We will also provide a printed version of the Code of Ethics to any shareholder who requests it. We intend to disclose any amendments to our Code of Ethics by posting such information on our website. Any waivers of our Code of Ethics applicable to our directors, principal executive officer, principal financial officer, principal accounting officer or controller and other persons who perform similar functions will be disclosed on our website or by filing a Form 8-K, as required.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item relating to executive compensation is incorporated herein by reference to information included in our Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS

The information required by this Item relating to security ownership of certain beneficial owners and management and securities authorized for issuance under equity compensation plans is incorporated herein by reference to information included in our Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item relating to certain relationships and related transactions and director independence is incorporated herein by reference to information included in our Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item relating to principal accountant fees and services is incorporated herein by reference to information included in our Proxy Statement.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Financial Statements

The Consolidated Financial Statements of RenaissanceRe Holdings Ltd. and related Notes thereto are listed in the accompanying Index to Consolidated Financial Statements and are filed as part of this Form 10-K.

Financial Statement Schedules

The Schedules to the Consolidated Financial Statements of RenaissanceRe Holdings Ltd. are listed in the accompanying Index to Schedules to Consolidated Financial Statements and are filed as a part of this Form 10-K.

Exhibit Index

Exhibit

Number Description

- 2.1 [Stock Purchase Agreement, dated as of October 30, 2018, by and among Tokio Marine & Nichido Fire Insurance Co., Ltd., Tokio Marine Holdings, Inc., and RenaissanceRe Holdings Ltd., including the exhibits thereto.](#) (41)
- 3.1 Memorandum of Association. (P) (1)
- 3.2 [Amended and Restated Bye-Laws.](#) (2)
- 3.3 [Memorandum of Increase in Share Capital of RenaissanceRe Holdings Ltd.](#) (3)
- 3.4 Specimen Common Share certificate. (P) (1)
- 4.1 [Certificate of Designation, Preferences and Rights of 6.08% Series C Preference Shares.](#) (4)
- 4.2 [Certificate of Designation, Preferences and Rights of 5.375% Series E Preference Shares.](#) (5)
- 4.2(a) [Form of Stock Certificate Evidencing the 5.375% Series E Preference Shares.](#) (5)
- 4.3 [Certificate of Designation, Preferences and Rights of 5.750% Series F Preference Shares.](#) (40)
- 4.3(a) [Form of Stock Certificate Evidencing the 5.750% Series F Preference Shares.](#) (40)
- 4.3(b) [Deposit Agreement, dated June 18, 2018, among RenaissanceRe Holdings Ltd., Computershare, Inc. and Computershare Trust Company, N.A.](#) (40)
- 4.3(c) [Form of Depositary Receipt.](#) (40)
- 4.4 [Senior Indenture, dated as of March 17, 2010, among RenRe North America Holdings Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Companies America, as trustee.](#) (6)
- 4.4(a) [First Supplemental Indenture, dated as of March 17, 2010, among RenRe North America Holdings Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Companies America, as trustee.](#) (6)
- 4.4(b) [Senior Debt Securities Guarantee Agreement, dated as of March 17, 2010, between RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Companies America, as guarantee trustee.](#) (6)
- 4.4(c) [Waiver Agreement, dated as of January 21, 2011, by and among RenRe North America Holdings Inc., RenaissanceRe Holdings Ltd. and Deutsche Bank Trust Company Americas, as trustee.](#) (7)
- 4.4(d) [Second Supplemental Indenture, dated as of July 3, 2015, among RenRe North America Holdings, Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, RenaissanceRe Finance Inc., as co-obligor, and Deutsche Bank Trust Companies America, as trustee.](#) (24)
- 4.5 [Senior Indenture, dated as of March 24, 2015, among RenaissanceRe Finance Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as trustee.](#) (22)
- 4.5(a) [First Supplemental Indenture, dated as of March 24, 2015, among RenaissanceRe Finance Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as trustee.](#) (22)
- 4.5(b) [Senior Debt Securities Guarantee Agreement, dated as of March 24, 2015, between RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as guarantee trustee.](#) (22)
- 4.6 [Senior Indenture, dated as of June 29, 2017, among RenaissanceRe Finance Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as trustee.](#) (35)
- 4.6(a) [First Supplemental Indenture, dated as of June 29, 2017, among RenaissanceRe Finance Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as trustee.](#) (35)

- 4.6(b) [Second Supplemental Indenture, March 25, 2019, by and among RenaissanceRe Finance Inc., as issuer, RenaissanceRe Holdings Ltd., as guarantor and Deutsche Bank Trust Company Americas, as trustee.](#) (48)
- 4.6(c) [Senior Debt Securities Guarantee Agreement, dated as of June 29, 2017, between RenaissanceRe Holdings Ltd., as guarantor, and Deutsche Bank Trust Company Americas, as guarantee trustee.](#) (35)
- 4.7 [Senior Indenture, dated as of April 2, 2019, by and between RenaissanceRe Holdings Ltd., as issuer, and Deutsche Bank Trust Company Americas, as trustee.](#) (49)
- 4.7(a) [First Supplemental Indenture, dated as of April 2, 2019, by and between RenaissanceRe Holdings Ltd., as issuer, and Deutsche Bank Trust Company Americas, as trustee.](#) (49)
- 4.8 [Description of Securities.](#)
- 10.1* [Further Amended and Restated Employment Agreement, dated as of July 22, 2016, by and between RenaissanceRe Holdings Ltd. and Kevin J. O'Donnell.](#) (28)
- 10.2* [Legacy Form of Further Amended and Restated Employment Agreement for Named Executive Officers \(other than our Chief Executive Officer\).](#) (28)**
- 10.3* [Form of Employment Agreement for Named Executive Officers \(other than our Chief Executive Officer\).](#) (28)***
- 10.4* [Letter agreement, dated July 6, 2016, between Ian Branagan and RenaissanceRe Holdings Ltd. regarding secondment to the U.K.](#) (28)
- 10.5* [Letter agreement, dated April 11, 2013, between Ian Branagan and RenaissanceRe Holdings Ltd. regarding secondment to the U.K.](#) (28)
- 10.6* [RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan.](#) (38)
- 10.6(a)* [Form of Director Restricted Stock Agreement under the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan.](#) (28)
- 10.6(b)* [Form of Restricted Stock Agreement under the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan.](#) (28)
- 10.6(c)* [Form of Performance Share Agreement under the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan \(for awards made in 2017 and March 2018\).](#) (33)
- 10.6(d)* [Form of Performance Share Agreement under the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan \(for awards made in May 2018 and March 2019\).](#) (39)
- 10.6(e)* [Form of Performance Share Agreement under the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan \(for awards to be made in March 2020\).](#)
- 10.7 [RenaissanceRe Holdings Ltd. Deferred Cash Award Plan.](#) (36)
- 10.7(a) [Form of Deferred Cash Award Agreement pursuant to which Deferred Cash Awards are granted under the RenaissanceRe Holdings Ltd. Deferred Cash Award Plan.](#) (36)
- 10.8* [RenaissanceRe Holdings Ltd. 2016 Restricted Stock Unit Plan.](#) (39)
- 10.8(a)* [Form of Restricted Stock Unit Agreement pursuant to which restricted stock unit grants are made under the RenaissanceRe Holdings Ltd. 2016 Restricted Stock Unit Plan.](#) (30)
- 10.9* [RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (15)
- 10.9(a)* [Amendment No. 1 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (16)
- 10.9(b)* [Amendment No. 2 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (16)
- 10.9(c)* [Amendment No. 3 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (8)
- 10.9(d)* [Amendment No. 4 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (13)
- 10.9(e)* [Amendment No. 5 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (17)
- 10.9(f)* [Amendment No. 6 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (11)
- 10.9(g)* [UK Schedule to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (8)
- 10.9(h)* [UK Sub-Plan to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (8)
- 10.9(i)* [Form of Restricted Stock Grant Notice and Agreement pursuant to which restricted stock grants were made under the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.](#) (27)

- 10.10* [RenaissanceRe Holdings Ltd. 2010 Restricted Stock Unit Plan.](#) (14)
- 10.10(a)* [Form of Restricted Stock Unit Agreement, pursuant to which restricted stock unit grants were made under the RenaissanceRe Holdings Ltd. 2010 Restricted Stock Unit Plan.](#) (14)
- 10.11* [Form of Tax Reimbursement Waiver Letter with the Named Executive Officers.](#) (19)
- 10.12* [Form of Agreement Regarding Use of Aircraft Interest by and between RenaissanceRe Holdings Ltd. and Certain Executive Officers of RenaissanceRe Holdings Ltd.](#) (12)
- 10.13* [Form of Director Retention Agreement, dated as of November 8, 2002, entered into by each of the non-employee directors of RenaissanceRe Holdings Ltd.](#) (20)
- 10.14 [Amended and Restated Standby Letter of Credit Agreement, dated as of June 21, 2019, by and among Renaissance Reinsurance Ltd., RenaissanceRe Specialty U.S. Inc., DaVinci Reinsurance Ltd., RenaissanceRe Europe AG, RenaissanceRe Holdings Ltd., as Guarantor, and Wells Fargo Bank, National Association.](#) (51)
- 10.15 [Facility Letter, dated September 17, 2010, from Citibank Europe plc to Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd. and Glencoe Insurance Ltd.](#) (9)
- 10.15(a) [Insurance Letters of Credit - Master Agreement, dated September 17, 2010, between Renaissance Reinsurance Ltd. and Citibank Europe plc, DaVinci Reinsurance Ltd., Glencoe Insurance Ltd., Renaissance Reinsurance of Europe, Renaissance Specialty U.S. Ltd., Platinum Underwriters Bermuda, Ltd. and Renaissance Reinsurance U.S. Inc. each entered into an agreement with Citibank Europe plc that is identical to the foregoing agreement, except with respect to party names and dates.](#) (9)
- 10.15(b) [Amendment to Facility Letter, dated July 14, 2011, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd. and Glencoe Insurance Ltd.](#) (45)
- 10.15(c) [Amendment to Facility Letter, dated October 1, 2013, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty Risks Ltd., Renaissance Reinsurance of Europe and RenaissanceRe Specialty U.S. Ltd.](#) (10)
- 10.15(d) [Amendment to Facility Letter, dated December 23, 2014, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty Risks Ltd., Renaissance Reinsurance of Europe and RenaissanceRe Specialty U.S. Ltd.](#) (27)
- 10.15(e) [Amendment to Facility Letter, dated March 31, 2015, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty Risks Ltd., Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S. Ltd., Platinum Underwriters Bermuda, Ltd. and Platinum Underwriters Reinsurance, Inc.](#) (27)
- 10.15(f) [Amendment to Facility Letter, dated December 30, 2015, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty Risks Ltd., Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S. Ltd., Platinum Underwriters Bermuda, Ltd. and Renaissance Reinsurance U.S. Inc.](#) (26)
- 10.15(g) [Amendment to Facility Letter, dated January 14, 2016, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty Risks Ltd., Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S. Ltd., Platinum Underwriters Bermuda, Ltd. and Renaissance Reinsurance U.S. Inc.](#) (27)
- 10.15(h) [Termination of Master Agreements, Control Agreements and Pledge Agreements, dated October 1, 2016, between Renaissance Reinsurance Ltd. and Citibank Europe plc.](#) (29)
- 10.15(i) [Amendment to Facility Letter, dated December 31, 2016, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S. Ltd. and Renaissance Reinsurance U.S. Inc.](#) (32)
- 10.15(j) [Amendment to Facility Letter, dated December 29, 2017, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., Renaissance Reinsurance of Europe Unlimited Company, RenaissanceRe Specialty U.S. Ltd. and Renaissance Reinsurance U.S. Inc.](#) (37)
- 10.15(k) [Amendment to Facility Letter, dated December 31, 2018, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., Renaissance Reinsurance of Europe](#)

- [Unlimited Company, RenaissanceRe Specialty U.S. Ltd. and Renaissance Reinsurance U.S. Inc. \(44\)](#)
- 10.15(l) [Deed of Amendment and Accession, dated June 24, 2019, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance of Europe, Renaissance Reinsurance U.S. Inc and RenaissanceRe Europe AG. \(52\)](#)
- 10.15(m) [Deed of Amendment to Facility Letter, dated December 31, 2019, by and among Citibank Europe plc, Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance U.S. Inc. and RenaissanceRe Europe AG. \(54\)](#)
- 10.16 [Amended and Restated Letter of Credit Reimbursement Agreement, dated as of November 7, 2019, by and among Renaissance Reinsurance Ltd., as borrower, ING Bank N.V., London Branch, as agent and as lender, Bank of Montreal, London Branch, as a lender, and Citibank Europe plc, as a lender. \(53\)](#)
- 10.17 [Second Amended and Restated Credit Agreement, dated as of November 9, 2018, by and among RenaissanceRe Holdings Ltd., Renaissance Reinsurance Ltd., RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance U.S. Inc., various banks and financial institutions parties thereto, and Wells Fargo Bank, National Association, as Fronting Bank, LC Administrator and Administrative Agent for the Lenders. \(43\)](#)
- 10.17(a) [Guaranty Agreement, dated as of November 9, 2018, by and among RenRe North America Holdings Inc., RenaissanceRe Finance Inc. and Wells Fargo Bank, National Association, as Administrative Agent. \(43\)](#)
- 10.17(b) [First Amendment to Loan Documents, dated June 11, 2019, by and among RenaissanceRe Holdings Ltd., Renaissance Reinsurance Ltd., RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance U.S. Inc., various banks and financial institutions parties thereto, and Wells Fargo Bank, National Association, as Fronting Bank, LC Administrator, a Swingline Lender and Administrative Agent for the Lenders. \(52\)](#)
- 10.18 [Master Agreement for Issuance of Payment Instruments, dated March 22, 2019, between Renaissance Reinsurance Ltd., RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance Inc., RenaissanceRe Europe AG and Citibank Europe plc. \(47\)](#)
- 10.18(a) [Facility Letter for Issuance of Payment Instruments, dated March 22, 2019, by and among Renaissance Reinsurance Ltd., RenaissanceRe Specialty U.S. Ltd., Renaissance Reinsurance Inc., RenaissanceRe Europe AG and Citibank Europe plc. \(47\)](#)
- 10.18(b) [Accession Undertaking, dated as of April 26, 2019, by and between RenaissanceRe \(UK\) Limited and Citibank Europe plc. \(50\)](#)
- 10.19 [Waiver, dated as of November 15, 2016, by and between RenaissanceRe Holdings Ltd. and BlackRock, Inc. \(31\)](#)
- 10.20 [Waiver, dated as of May 11, 2018, by and between RenaissanceRe Holdings Ltd. and The Vanguard Group, Inc. \(39\)](#)
- 10.21 [Investment Agreement, dated as of October 30, 2018, by and between RenaissanceRe Holdings Ltd. And State Farm Mutual Automobile Insurance Company, including the exhibits thereto. \(41\)](#)
- 10.22 [Registration Rights Agreement, dated October 30, 2018, by and between RenaissanceRe Holdings Ltd. and State Farm Mutual Automobile Insurance Co. Ltd. \(41\)](#)
- 10.23+ [Reserve Development Agreement, dated as of March 22, 2019, by and between Tokio Millennium Re AG, and Tokio Millennium Re \(UK\) Limited and Tokio Marine & Nichido Fire Insurance Co., Ltd. \(46\)](#)
- 10.24+ [Retrocession Agreement, dated as of March 22, 2019, by and between Tokio Millennium Re AG and Tokio Marine & Nichido Fire Insurance Co., Ltd. \(46\)](#)
- 21.1 [List of Subsidiaries of the Registrant.](#)
- 23.1 [Consent of Ernst & Young Ltd.](#)

31.1	<u>Certification of Kevin J. O'Donnell, Chief Executive Officer of RenaissanceRe Holdings Ltd., pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.</u>
31.2	<u>Certification of Robert Qutub, Chief Financial Officer of RenaissanceRe Holdings Ltd., pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.</u>
32.1	<u>Certification of Kevin J. O'Donnell, Chief Executive Officer of RenaissanceRe Holdings Ltd., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
32.2	<u>Certification of Robert Qutub, Chief Financial Officer of RenaissanceRe Holdings Ltd., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and included in Exhibit 101)

* Represents management contract or compensatory plan or arrangement.

** Applicable to Stephen H. Weinstein and Ian D. Branagan.

*** Applicable to Ross A. Curtis and Robert Qutub.

+ Certain schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company hereby undertakes to furnish supplemental copies of any of the omitted schedules upon request by the SEC.

- (1) Incorporated by reference to the Registration Statement on Form S-1 of RenaissanceRe Holdings Ltd. (Registration No. 33-70008) which was declared effective by the SEC on July 26, 1995.
- (2) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended June 30, 2002, filed with the SEC on August 14, 2002.
- (3) Incorporated by reference to Exhibit 3.1 to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended March 31, 1998, filed with the SEC on May 14, 1998.
- (4) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on March 18, 2004.
- (5) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on May 28, 2013.
- (6) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on March 18, 2010.
- (7) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on January 24, 2011.
- (8) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended March 31, 2009, filed with the SEC on May 1, 2009.
- (9) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on September 23, 2010.
- (10) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on October 4, 2013.
- (11) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended September 30, 2013, filed with the SEC on November 6, 2013.
- (12) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2012, filed with the SEC on February 22, 2013.

- (13) Amendment No. 4 to the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan is incorporated by reference to Appendix B to RenaissanceRe Holdings Ltd.'s Definitive Proxy Statement, filed with the SEC on April 8, 2010. The RenaissanceRe Holdings Ltd. 2010 Performance-Based Equity Incentive Plan is incorporated by reference to Appendix A to RenaissanceRe Holdings Ltd.'s Definitive Proxy Statement, filed with the SEC on April 8, 2010.
- (14) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2009, filed with the SEC on February 19, 2010.
- (15) Incorporated by reference to Exhibit 99.2 to the Registration Statement on Form S-8 (Registration No. 333-90758) dated June 19, 2002.
- (16) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended March 31, 2007, filed with the SEC on May 2, 2007.
- (17) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on August 13, 2010.
- (18) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q, for the period ended September 30, 2004, filed with the SEC on November 9, 2004.
- (19) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2011, filed with the SEC on February 23, 2012.
- (20) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2002, filed with the SEC on March 31, 2003 (SEC File Number 001-14428).
- (21) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on December 30, 2014.
- (22) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on March 25, 2015.
- (23) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on May 21, 2015.
- (24) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on July 8, 2015.
- (25) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on November 25, 2015.
- (26) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on December 31, 2015.
- (27) Incorporated by reference to RenaissanceRe Holding Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2015, filed with the SEC on February 19, 2016.
- (28) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended June 30, 2016, filed with the SEC on July 27, 2016.
- (29) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended September 30, 2016, filed with the SEC on November 2, 2016.
- (30) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on November 10, 2016.
- (31) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on November 18, 2016.
- (32) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on January 5, 2017.
- (33) Incorporated by reference to RenaissanceRe Holding Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on February 23, 2017.
- (34) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on May 26, 2017.
- (35) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on June 29, 2017.

- (36) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on November 13, 2017.
- (37) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on January 3, 2018.
- (38) Incorporated by reference to RenaissanceRe Holding Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 9, 2018.
- (39) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on May 16, 2018.
- (40) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on June 19, 2018.
- (41) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on November 5, 2018.
- (42) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on November 9, 2018.
- (43) Incorporated by reference to RenaissanceRe Holding Ltd.'s Current Report on Form 8-K, filed with the SEC on November 14, 2018.
- (44) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on January 3, 2019.
- (45) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 7, 2019.
- (46) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the Commission on March 22, 2019.
- (47) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on March 25, 2019.
- (48) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the Commission on March 26, 2019.
- (49) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the Commission on April 2, 2019.
- (50) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended March 31, 2019, filed with the SEC on May 8, 2019.
- (51) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on June 24, 2019.
- (52) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Quarterly Report on Form 10-Q for the period ended June 30, 2019, filed with the SEC on July 25, 2019.
- (53) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on November 12, 2019.
- (54) Incorporated by reference to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on January 3, 2020.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 7, 2020

RENAISSANCERE HOLDINGS LTD.

/s/ Kevin J. O'Donnell

Kevin J. O'Donnell

Chief Executive Officer and President

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Kevin J. O'Donnell</u> Kevin J. O'Donnell	Chief Executive Officer, President and Director (Principal Executive Officer)	February 7, 2020
<u>/s/ Robert Qutub</u> Robert Qutub	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 7, 2020
<u>/s/ James C. Fraser</u> James C. Fraser	Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 7, 2020
<u>/s/ James L. Gibbons</u> James L. Gibbons	Non-Executive Chair of the Board of Directors	February 7, 2020
<u>/s/ David C. Bushnell</u> David C. Bushnell	Director	February 7, 2020
<u>/s/ Brian G. J. Gray</u> Brian G. J. Gray	Director	February 7, 2020
<u>/s/ Jean D. Hamilton</u> Jean D. Hamilton	Director	February 7, 2020
<u>/s/ Duncan P. Hennes</u> Duncan P. Hennes	Director	February 7, 2020
<u>/s/ Henry Klehm, III</u> Henry Klehm, III	Director	February 7, 2020
<u>/s/ Valerie Rahmani</u> Valerie Rahmani	Director	February 7, 2020
<u>/s/ Carol P. Sanders</u> Carol P. Sanders	Director	February 7, 2020
<u>/s/ Anthony M. Santomero</u> Anthony M. Santomero	Director	February 7, 2020
<u>/s/ Cynthia Trudell</u> Cynthia Trudell	Director	February 7, 2020

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of RenaissanceRe Holdings Ltd.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of RenaissanceRe Holdings Ltd. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 7, 2020, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of Reserve for Incurred But Not Reported Claim Reserves

Description of the Matter At December 31, 2019, the liability for incurred but not reported claim reserves, including additional case reserves (ACR) for the property segment (collectively referred to as IBNR claim reserves), represented \$6,404.4 million of the total \$9,384.3 million of reserves for claims and claim expenses. As disclosed in Notes 2 and 8 of the consolidated financial statements, reserves for claims and claim expenses represent estimates that are established by management based on actuarially and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts the Company sells for both their casualty and specialty segment and their property segment.

There is significant uncertainty inherent in estimating IBNR claim reserves. In determining management's estimate of the IBNR claim reserves for the casualty and specialty segment, management's analysis includes consideration of loss development patterns; historical ultimate loss ratios; and the presence of individual large losses. In particular, the estimate is sensitive to the selection and weighting of actuarial methods, expected trends in claim severity and frequency, the time lag inherent in reporting information and industry or event trends. In determining management's estimate of the ultimate loss settlement costs which is used to determine the IBNR claim reserves for the property segment, which generally involve catastrophic events, management's analysis includes available information derived from claims information from certain customers and brokers, industry assessments of losses from the events, proprietary models, and the terms and conditions of the Company's contracts. In particular, the estimate is sensitive to the preliminary nature of the information available, the magnitude and relative infrequency of the events, the expected duration of the respective claims development period, inadequacies in the data provided to the relevant date by industry participants and the potential for further reporting lags or insufficiencies, and in certain large events, significant uncertainty as to the form of the claims and legal issues under the relevant terms of insurance and reinsurance contracts.

Auditing management's estimate for IBNR claim reserves was complex and required the involvement of our actuarial specialists due to the high degree of subjectivity inherent in management's methods and assumptions used in the calculations which have a significant effect on the valuation of the reserves.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of the relevant controls over the estimation process for IBNR claim reserves. This included, among others, evaluating management's review controls over the actuarial methods selected to determine the estimate and the assumptions and methods used for the Company's determination of their recorded estimate.

To test the IBNR claim reserves that are included in claims and claim expense reserves, our audit procedures included, among others, utilizing the assistance of actuarial specialists. Our actuarial specialists evaluated the selection of standard reserving methods applied, considering the methods used in prior periods and those applied in the broader insurance industry. To evaluate the significant assumptions used by management in the reserving methods for the casualty and specialty segment, we compared the significant assumptions, including loss development patterns, ultimate loss ratios, and the impact of individual large losses, to company experience and current industry benchmarks. To evaluate the significant assumptions used by management in their actuarial methods in the property segment we compared the significant assumptions, including the severity of industry losses by event and development patterns, to current industry benchmarks such as incurred to ultimate loss ratios and industry loss levels. In addition, for casualty, specialty and property claims and claims expense reserves, we developed a range of reasonable reserve estimates including performing independent projections for a significant portion of the Company's classes of business and compared the range of reserve estimates to the Company's recorded claims and claim expense reserves.

Valuation of Value of Business Acquired for TMR Acquisition

Description of the Matter As disclosed in Note 3 of the consolidated financial statements, on March 22, 2019, the Company completed its acquisitions of Tokio Millennium Re AG and Tokio Millennium Re (UK) Ltd (collectively referred to as TMR) for the net purchase price of \$1.1 billion. The purchase price was allocated to the acquired assets and liabilities of TMR, which resulted in the Company recording an asset for the Value of Business Acquired (VOBA) of \$287.6 million at the acquisition date. The Company's December 31, 2019 balance of VOBA represents the unamortized present value of the expected underwriting profit, net of reinsurance less the costs to service the related expenses. VOBA is expected to amortize over approximately two years from the acquisition date, as the in-force contracts as of the acquisition date expire.

There is significant uncertainty inherent in determining the VOBA asset, primarily due to the sensitivity of the valuation to estimate loss ratios by line of business used to calculate the underwriting profit, weighted average cost of capital, risk premium and expected payout patterns.

Auditing management's VOBA asset as a result of its acquisition of TMR was complex and required the involvement of our actuarial specialists due to the high degree of subjectivity inherent in management's assumptions used in the model which have a significant effect on the valuation of VOBA.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of the Company's controls over the process to calculate VOBA, which included, among others, evaluating management's review controls over the assumptions used to develop such estimate.

To test the VOBA asset, we performed audit procedures that included, among others, the involvement of our actuarial specialists to assist in evaluating management's calculation of VOBA. To evaluate the significant assumptions used by management in the model, we compared their loss ratio estimate selections to a range of reasonable actuarial estimates based on data as of the acquisition date, the expected payout patterns of the claims and claim expenses and the expected investment yields used in the determination of the discount rate to both industry benchmarks and historical data, and the risk premium used to a margin derived using appropriate industry capital factors by type of business and jurisdiction. We independently calculated a range of reasonable valuations of the VOBA asset, which we compared to management's estimate of VOBA. We also evaluated the amortization period selected by management and compared it to the remaining duration of the contracts of business in-force that were acquired.

/s/ Ernst & Young Ltd.

We have served as the Company's auditor since 1993.

Hamilton, Bermuda
February 7, 2020

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Balance Sheets
At December 31, 2019 and 2018
(in thousands of United States Dollars, except share and per share amounts)

	December 31, 2019	December 31, 2018
Assets		
Fixed maturity investments trading, at fair value - amortized cost \$11,067,414 at December 31, 2019 (2018 - \$8,163,962) (Notes 5 and 6)	\$ 11,171,655	\$ 8,088,870
Short term investments, at fair value (Notes 5 and 6)	4,566,277	2,586,520
Equity investments trading, at fair value (Notes 5 and 6)	436,931	310,252
Other investments, at fair value (Notes 5 and 6)	1,087,377	784,933
Investments in other ventures, under equity method (Note 5)	106,549	115,172
Total investments	17,368,789	11,885,747
Cash and cash equivalents	1,379,068	1,107,922
Premiums receivable	2,599,896	1,537,188
Prepaid reinsurance premiums (Note 7)	767,781	616,185
Reinsurance recoverable (Notes 7 and 8)	2,791,297	2,372,221
Accrued investment income	72,461	51,311
Deferred acquisition costs and value of business acquired	663,991	476,661
Receivable for investments sold	78,369	256,416
Other assets	346,216	135,127
Goodwill and other intangible assets (Note 4)	262,226	237,418
Total assets	\$ 26,330,094	\$ 18,676,196
Liabilities, Noncontrolling Interests and Shareholders' Equity		
Liabilities		
Reserve for claims and claim expenses (Note 8)	\$ 9,384,349	\$ 6,076,271
Unearned premiums	2,530,975	1,716,021
Debt (Note 9)	1,384,105	991,127
Reinsurance balances payable	2,830,691	1,902,056
Payable for investments purchased	225,275	380,332
Other liabilities	932,024	513,609
Total liabilities	17,287,419	11,579,416
Commitments and Contingencies (Note 20)		
Redeemable noncontrolling interests (Note 10)	3,071,308	2,051,700
Shareholders' Equity (Note 12)		
Preference shares: \$1.00 par value – 16,010,000 shares issued and outstanding at December 31, 2019 (2018 – 16,010,000)	650,000	650,000
Common shares: \$1.00 par value – 44,148,116 shares issued and outstanding at December 31, 2019 (2018 – 42,207,390)	44,148	42,207
Additional paid-in capital	568,277	296,099
Accumulated other comprehensive loss	(1,939)	(1,433)
Retained earnings	4,710,881	4,058,207
Total shareholders' equity attributable to RenaissanceRe	5,971,367	5,045,080
Total liabilities, noncontrolling interests and shareholders' equity	\$ 26,330,094	\$ 18,676,196

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Operations
For the years ended December 31, 2019, 2018, and 2017
(in thousands of United States Dollars, except per share amounts)

	2019	2018	2017
Revenues			
Gross premiums written	\$ 4,807,750	\$ 3,310,427	\$ 2,797,540
Net premiums written (Note 7)	\$ 3,381,493	\$ 2,131,902	\$ 1,871,325
Increase in unearned premiums	(43,090)	(155,773)	(153,750)
Net premiums earned (Note 7)	3,338,403	1,976,129	1,717,575
Net investment income (Note 5)	423,833	261,866	222,209
Net foreign exchange (losses) gains	(2,938)	(12,428)	10,628
Equity in earnings of other ventures (Note 5)	23,224	18,474	8,030
Other income	4,949	5,969	9,415
Net realized and unrealized gains (losses) on investments (Note 5)	414,483	(175,069)	135,822
Total revenues	4,201,954	2,074,941	2,103,679
Expenses			
Net claims and claim expenses incurred (Notes 7 and 8)	2,097,021	1,120,018	1,861,428
Acquisition expenses	762,232	432,989	346,892
Operational expenses	222,733	178,267	160,778
Corporate expenses	94,122	33,983	18,572
Interest expense (Note 9)	58,364	47,069	44,193
Total expenses	3,234,472	1,812,326	2,431,863
Income (loss) before taxes	967,482	262,615	(328,184)
Income tax (expense) benefit (Note 15)	(17,215)	6,302	(26,487)
Net income (loss)	950,267	268,917	(354,671)
Net (income) loss attributable to redeemable noncontrolling interests (Note 10)	(201,469)	(41,553)	132,282
Net income (loss) attributable to RenaissanceRe	748,798	227,364	(222,389)
Dividends on preference shares (Note 12)	(36,756)	(30,088)	(22,381)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 712,042	\$ 197,276	\$ (244,770)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – basic (Note 13)	\$ 16.32	\$ 4.91	\$ (6.15)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted (Note 13)	\$ 16.29	\$ 4.91	\$ (6.15)

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)
For the years ended December 31, 2019, 2018 and 2017
(in thousands of United States Dollars)

	2019	2018	2017
Comprehensive income (loss)			
Net income (loss)	\$ 950,267	\$ 268,917	\$ (354,671)
Change in net unrealized gains on investments, net of tax	2,173	(1,657)	(909)
Foreign currency translation adjustments, net of tax	(2,679)	—	—
Comprehensive income (loss)	949,761	267,260	(355,580)
Net (income) loss attributable to redeemable noncontrolling interests	(201,469)	(41,553)	132,282
Comprehensive (income) loss attributable to redeemable noncontrolling interests	(201,469)	(41,553)	132,282
Comprehensive income (loss) attributable to RenaissanceRe	<u>\$ 748,292</u>	<u>\$ 225,707</u>	<u>\$ (223,298)</u>
Disclosure regarding net unrealized gains (losses)			
Total net realized and unrealized holding gains (losses) on investments	\$ 2,173	\$ (1,657)	\$ (909)
Change in net unrealized (losses) gains on investments	<u>\$ 2,173</u>	<u>\$ (1,657)</u>	<u>\$ (909)</u>

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Changes in Shareholders' Equity
For the years ended December 31, 2019, 2018 and 2017
(in thousands of United States Dollars)

	2019	2018	2017
Preference shares			
Balance – January 1	\$ 650,000	\$ 400,000	\$ 400,000
Issuance of shares (Note 12)	—	250,000	—
Balance – December 31	650,000	650,000	400,000
Common shares			
Balance – January 1	42,207	40,024	41,187
Issuance of shares (Note 12)	1,739	1,947	—
Repurchase of shares	—	—	(1,322)
Exercise of options and issuance of restricted stock awards (Notes 12 and 17)	202	236	159
Balance – December 31	44,148	42,207	40,024
Additional paid-in capital			
Balance – January 1	296,099	37,355	216,558
Issuance of shares (Note 12)	248,259	248,053	—
Repurchase of shares	—	—	(187,269)
Offering expenses	—	(8,552)	—
Change in redeemable noncontrolling interest	(342)	837	119
Exercise of options and issuance of restricted stock awards (Notes 12 and 17)	24,261	18,406	7,947
Balance – December 31	568,277	296,099	37,355
Accumulated other comprehensive (loss) income			
Balance – January 1	(1,433)	224	1,133
Change in net unrealized gains on investments, net of tax	2,173	(1,657)	(909)
Foreign currency translation adjustments, net of tax	(2,679)	—	—
Balance – December 31	(1,939)	(1,433)	224
Retained earnings			
Balance – January 1	4,058,207	3,913,772	4,207,699
Cumulative effect of adoption of ASU 2016-09 (Note 2)	—	—	2,213
Net income (loss)	950,267	268,917	(354,671)
Net (income) loss attributable to redeemable noncontrolling interests (Note 10)	(201,469)	(41,553)	132,282
Dividends on common shares	(59,368)	(52,841)	(51,370)
Dividends on preference shares	(36,756)	(30,088)	(22,381)
Balance – December 31	4,710,881	4,058,207	3,913,772
Total shareholders' equity	\$ 5,971,367	\$ 5,045,080	\$ 4,391,375

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
For the years ended December 31, 2019, 2018 and 2017
(in thousands of United States Dollars)

	2019	2018	2017
Cash flows provided by operating activities			
Net income (loss)	\$ 950,267	\$ 268,917	\$ (354,671)
Adjustments to reconcile net income (loss) to net cash provided by operating activities			
Amortization, accretion and depreciation	(58,964)	123	31,242
Equity in undistributed (earnings) losses of other ventures	(762)	(3,772)	6,295
Net realized and unrealized (gains) losses on investments	(414,483)	175,069	(135,822)
Net unrealized (gains) losses included in net investment income	(12,221)	8,309	(24,737)
Change in:			
Premiums receivable	(424,973)	(232,566)	(317,299)
Prepaid reinsurance premiums	(11,798)	(82,639)	(92,286)
Reinsurance recoverable	129,665	(785,591)	(1,307,066)
Deferred acquisition costs	118,676	(50,110)	(91,226)
Reserve for claims and claim expenses	900,562	995,863	2,232,114
Unearned premiums	51,343	238,412	246,036
Reinsurance balances payable	658,532	912,966	315,107
Other	251,351	(223,280)	518,100
Net cash provided by operating activities	2,137,195	1,221,701	1,025,787
Cash flows used in investing activities			
Proceeds from sales and maturities of fixed maturity investments trading	17,313,940	11,585,576	9,490,669
Purchases of fixed maturity investments trading	(17,919,343)	(12,489,972)	(10,093,532)
Net (purchases) sales of equity investments trading	(7,841)	14,156	115,837
Net (purchases) sales of short term investments	(1,900,741)	(1,436,389)	364,011
Net purchases of other investments	(202,878)	(199,475)	(19,419)
Net purchases of investments in other ventures	(2,717)	(21,473)	—
Return of investment from investment in other ventures	11,250	8,464	20,000
Net (purchases) sales of other assets	(4,108)	2,500	—
Net purchase of TMR	(276,206)	—	—
Net cash used in investing activities	(2,988,644)	(2,536,613)	(122,434)
Cash flows provided by financing activities			
Dividends paid – RenaissanceRe common shares	(59,368)	(52,841)	(51,370)
Dividends paid – preference shares	(36,756)	(30,088)	(22,381)
RenaissanceRe common share repurchases	—	—	(188,591)
RenaissanceRe common share issuance	—	250,000	—
Issuance of debt, net of expenses	396,411	—	295,866
Repayment of debt	—	—	(250,000)
Issuance of preference shares, net of expenses	—	241,448	—
Net third-party redeemable noncontrolling interest share transactions	827,083	665,683	260,475
Taxes paid on withholding shares	(7,253)	(7,862)	(15,139)
Net cash provided by financing activities	1,120,117	1,066,340	28,860
Effect of exchange rate changes on foreign currency cash	2,478	(5,098)	8,222
Net increase (decrease) in cash and cash equivalents	271,146	(253,670)	940,435
Cash and cash equivalents, beginning of year	1,107,922	1,361,592	421,157
Cash and cash equivalents, end of year	\$ 1,379,068	\$ 1,107,922	\$ 1,361,592
Supplemental disclosure of cash flow information			
Income taxes paid	\$ 9,749	\$ 341	\$ 343
Interest paid	\$ 53,220	\$ 45,623	\$ 44,171

See accompanying notes to the consolidated financial statements

RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2019

(unless otherwise noted, amounts in tables expressed in thousands of United States ("U.S.") dollars, except per share amounts and percentages)

NOTE 1. ORGANIZATION

RenaissanceRe Holdings Ltd. ("RenaissanceRe" or the "Company") was formed under the laws of Bermuda on June 7, 1993. Together with its wholly owned and majority-owned subsidiaries and joint ventures, the Company provides property, casualty and specialty reinsurance and certain insurance solutions to its customers.

- On March 22, 2019, the Company's wholly owned subsidiary, RenaissanceRe Specialty Holdings (UK) Limited ("RenaissanceRe Specialty Holdings"), completed its previously announced purchase of all of the share capital of RenaissanceRe Europe AG (formerly known as Tokio Millennium Re AG) ("RenaissanceRe Europe"), RenaissanceRe (UK) Limited (formerly known as Tokio Millennium Re (UK) Limited) ("RenaissanceRe UK"), and their respective subsidiaries (collectively, "TMR") pursuant to a Stock Purchase Agreement by and among the Company, Tokio Marine & Nichido Fire Insurance Co. Ltd. ("Tokio") and, with respect to certain sections only, Tokio Marine Holdings, Inc. entered into on October 30, 2018 (the "TMR Stock Purchase Agreement") (the "TMR Stock Purchase"). TMR comprised the treaty reinsurance business of Tokio Marine Holdings, Inc. The results of operations of TMR from March 22, 2019, through December 31, 2019, are reflected in the Company's results of operations for the year ended December 31, 2019. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information regarding the TMR Stock Purchase.
- Renaissance Reinsurance Ltd. ("Renaissance Reinsurance"), a Bermuda-domiciled reinsurance company, is the Company's principal reinsurance subsidiary and provides property, casualty and specialty reinsurance coverages to insurers and reinsurers on a worldwide basis.
- Renaissance Reinsurance U.S. Inc. ("Renaissance Reinsurance U.S.") is a reinsurance company domiciled in the state of Maryland that provides property, casualty and specialty reinsurance coverages to insurers and reinsurers, primarily in the Americas.
- RenaissanceRe Underwriting Managers U.S. LLC, a specialty reinsurance agency domiciled in the state of Connecticut, provides specialty treaty reinsurance solutions on both a quota share and excess of loss basis; and writes business on behalf of RenaissanceRe Specialty U.S. Ltd. ("RenaissanceRe Specialty U.S."), a Bermuda-domiciled reinsurer, which operates subject to U.S. federal income tax, and RenaissanceRe Syndicate 1458 ("Syndicate 1458").
- Syndicate 1458 is the Company's Lloyd's syndicate. RenaissanceRe Corporate Capital (UK) Limited ("RenaissanceRe CCL"), a wholly owned subsidiary of RenaissanceRe, is Syndicate 1458's sole corporate member. RenaissanceRe Syndicate Management Ltd. ("RSML"), a wholly owned subsidiary of RenaissanceRe, is the managing agent for Syndicate 1458.
- RenaissanceRe Europe, a Swiss-domiciled reinsurance company, which has branches in Australia, Bermuda, the U.K. and the U.S., provides property, casualty and specialty reinsurance coverages to insurers and reinsurers on a worldwide basis.
- RenaissanceRe UK, a U.K.-domiciled reinsurance company in run-off, provided property, casualty and specialty reinsurance coverages on a worldwide basis. RenaissanceRe UK was placed into run-off effective July 1, 2015, from which date all new and renewal business was written by the U.K. branch of RenaissanceRe Europe. On February 4, 2020, RenaissanceRe Specialty Holdings entered into an agreement to sell RenaissanceRe UK to an investment vehicle managed by AXA Liabilities Managers, an affiliate of AXA XL. The sale is expected to close in 2020 and is subject to regulatory approval.
- The Company also manages property, casualty and specialty reinsurance business written on behalf of joint ventures, which include Top Layer Reinsurance Ltd. ("Top Layer Re"), recorded under the equity method of accounting, and DaVinci Reinsurance Ltd. ("DaVinci"). Because the Company owns a noncontrolling equity interest in, but controls a majority of the outstanding voting power of DaVinci's

parent, DaVinciRe Holdings Ltd. ("DaVinciRe"), the results of DaVinci and DaVinciRe are consolidated in the Company's consolidated financial statements and all significant intercompany transactions have been eliminated. Redeemable noncontrolling interest - DaVinciRe represents the interests of external parties with respect to the net income and shareholders' equity of DaVinciRe. Renaissance Underwriting Managers, Ltd. ("RUM"), a wholly owned subsidiary of RenaissanceRe, acts as exclusive underwriting manager for these joint ventures in return for fee-based income and profit participation.

- RenaissanceRe Medici Fund Ltd. ("Medici") is an exempted fund, incorporated under the laws of Bermuda. Medici's objective is to seek to invest substantially all of its assets in various insurance-based investment instruments that have returns primarily tied to property catastrophe risk. Third-party investors have subscribed for a portion of the participating, non-voting common shares of Medici. Because the Company owns a noncontrolling equity interest in, but controls a majority of the outstanding voting power of Medici, through its wholly-owned parent, RenaissanceRe Fund Holdings Ltd. ("Fund Holdings"), the results of Medici and Fund Holdings are consolidated in the Company's consolidated financial statements and all significant inter-company transactions have been eliminated. Redeemable noncontrolling interest - Medici represents the interests of external parties with respect to the net income and shareholders' equity of Medici.
- Upsilon RFO Re Ltd., formerly known as Upsilon Reinsurance II Ltd. ("Upsilon RFO"), a Bermuda domiciled special purpose insurer ("SPI"), is a managed joint venture formed by the Company principally to provide additional capacity to the worldwide aggregate and per-occurrence primary and retrocessional property catastrophe excess of loss market. Upsilon RFO is considered a variable interest entity ("VIE") and the Company is considered the primary beneficiary. As a result, Upsilon RFO is consolidated by the Company and all significant inter-company transactions have been eliminated.
- RenaissanceRe Upsilon Fund Ltd. ("Upsilon Fund"), an exempted Bermuda segregated accounts company was formed by the Company to provide a fund structure through which third-party investors can invest in reinsurance risk managed by the Company. As a segregated accounts company, Upsilon Fund is permitted to establish segregated accounts to invest in and hold identified pools of assets and liabilities. Each pool of assets and liabilities in each segregated account is structured to be ring-fenced from any claims from the creditors of Upsilon Fund's general account and from the creditors of other segregated accounts within Upsilon Fund. Third-party investors purchase redeemable, non-voting preference shares linked to specific segregated accounts of Upsilon Fund and own 100% of these shares. Upsilon Fund is an investment company and is considered a VIE. The Company is not considered the primary beneficiary of Upsilon Fund and, as a result, the Company does not consolidate the financial position and results of operations of Upsilon Fund.
- Effective December 17, 2018, the Company formed Vermeer Reinsurance Ltd. ("Vermeer"), an exempted Bermuda reinsurer, with PGGM, a Dutch pension fund manager. Vermeer provides capacity focused on risk remote layers in the U.S. property catastrophe market. Vermeer is managed by RUM in return for a management fee. The Company maintains a majority voting control of Vermeer, while PGGM retains economic benefits. Vermeer is considered a VIE, as it has voting rights that are not proportional to its participating rights and the Company is the primary beneficiary. As a result, the Company consolidates Vermeer and all significant inter-company transactions have been eliminated. The Company does not currently expect its voting or economic interest in Vermeer to fluctuate.
- Fibonacci Reinsurance Ltd. ("Fibonacci Re"), a Bermuda-domiciled SPI, was formed in 2016 to provide collateralized capacity to Renaissance Reinsurance and its affiliates. Fibonacci Re raises capital from third-party investors and the Company, via private placements of participating notes which are listed on the Bermuda Stock Exchange. Fibonacci Re is considered a VIE. The Company is not considered the primary beneficiary of Fibonacci Re and, as a result, the Company does not consolidate the financial position and results of operations of Fibonacci Re.
- Effective December 22, 2017, the Company and Reinsurance Group of America, Incorporated closed an initiative ("Langhorne") to source third-party capital to support reinsurers targeting large in-force life and annuity blocks. Langhorne Holdings LLC ("Langhorne Holdings") is a company that owns and manages certain reinsurance entities within Langhorne. Langhorne Partners LLC ("Langhorne

Partners”) is the general partner for Langhorne and the entity which manages the third-parties investing in Langhorne Holdings. The Company concluded that Langhorne Holdings meets the definition of a VIE. The Company is not the primary beneficiary of Langhorne Holdings and as a result, the Company does not consolidate the financial position or results of operations of Langhorne Holdings. The Company concluded that Langhorne Partners is not a VIE. The Company will account for its investments in Langhorne Holdings and Langhorne Partners under the equity method of accounting, one quarter in arrears.

- In connection with the acquisition of TMR, the Company manages Shima Reinsurance Ltd. (“Shima Re”), Norwood Re Ltd. (“Norwood Re”) and Blizzard Re Ltd. (“Blizzard Re”) (together, the “TMR managed third-party capital vehicles”), which provide third-party investors with access to reinsurance risk formerly managed by TMR. Following the closing of the acquisition, the retrocessionaires providing reinsurance to TMR on certain TMR managed third-party capital vehicles’ legacy portfolios of in-force and expired contracts were replaced. The TMR managed third-party capital vehicles no longer write new business.

NOTE 2. SIGNIFICANT ACCOUNTING POLICIES

BASIS OF PRESENTATION

These consolidated financial statements have been prepared on the basis of accounting principles generally accepted in the United States (“GAAP”). All significant intercompany accounts and transactions have been eliminated from these statements.

Certain comparative information has been reclassified to conform to the current presentation.

USE OF ESTIMATES IN FINANCIAL STATEMENTS

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported and disclosed amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from those estimates. The major estimates reflected in the Company’s consolidated financial statements include, but are not limited to, the reserve for claims and claim expenses; reinsurance recoverables, including allowances for reinsurance recoverables deemed uncollectible; estimates of written and earned premiums; fair value, including the fair value of investments, financial instruments and derivatives; impairment charges; deferred acquisition costs and the value of business acquired (“VOBA”) and the Company’s deferred tax valuation allowance.

PREMIUMS AND RELATED EXPENSES

Premiums are recognized as income, net of any applicable reinsurance or retrocessional coverage purchased, over the terms of the related contracts and policies. Premiums written are based on contract and policy terms and include estimates based on information received from both insureds and ceding companies. Subsequent differences arising on such estimates are recorded in the period in which they are determined. Unearned premiums represent the portion of premiums written that relate to the unexpired terms of contracts and policies in force. Amounts are computed by pro rata methods based on statistical data or reports received from ceding companies. Reinstatement premiums are estimated after the occurrence of a significant loss and are recorded in accordance with the contract terms based upon paid losses and case reserves. Reinstatement premiums are earned when written.

Acquisition costs are incurred when a contract or policy is issued and only the costs directly related to the successful acquisition of new and renewal contract or policies are deferred and amortized over the same period in which the related premiums are earned. Acquisition costs consist principally of commissions, brokerage and premium tax expenses. Certain of our assumed contracts contain profit sharing provisions or adjustable commissions that are estimated based on the expected loss and loss adjustment expense on those contracts. Acquisition costs include accruals for such estimates of commissions and are shown net of commissions and profit commissions earned on ceded reinsurance. Deferred policy acquisition costs are limited to their estimated realizable value based on the related unearned premiums. Anticipated claims and

claim expenses, based on historical and current experience, and anticipated investment income related to those premiums are considered in determining the recoverability of deferred acquisition costs.

CLAIMS AND CLAIM EXPENSES

The reserve for claims and claim expenses includes estimates for unpaid claims and claim expenses on reported losses as well as an estimate of losses incurred but not reported. The reserve is based on individual claims, case reserves and other reserve estimates reported by insureds and ceding companies as well as management estimates of ultimate losses. Inherent in the estimates of ultimate losses are expected trends in claim severity and frequency and other factors which could vary significantly as claims are settled. Also, during the past few years, the Company has increased its casualty and specialty reinsurance businesses, but does not have the benefit of a significant amount of its own historical experience in certain of these lines of business. Accordingly, the reserving for incurred losses in these lines of business could be subject to greater variability.

Ultimate losses may vary materially from the amounts provided in the consolidated financial statements. These estimates are reviewed regularly and, as experience develops and new information becomes known, the reserves are adjusted as necessary. Such adjustments, if any, are reflected in the consolidated statements of operations in the period in which they become known and are accounted for as changes in estimates.

REINSURANCE

Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability associated with the reinsured policies. For multi-year retrospectively rated contracts, the Company accrues amounts (either assets or liabilities) that are due to or from assuming companies based on estimated contract experience. If the Company determines that adjustments to earlier estimates are appropriate, such adjustments are recorded in the period in which they are determined. Reinsurance recoverables on dual trigger reinsurance contracts require the Company to estimate its ultimate losses applicable to these contracts as well as estimate the ultimate amount of insured industry losses that will be reported by the applicable statistical reporting agency, as per the contract terms. Amounts recoverable from reinsurers are recorded net of a valuation allowance for estimated uncollectible recoveries.

Assumed and ceded reinsurance contracts that lack a significant transfer of risk are treated as deposits.

Certain assumed and ceded reinsurance contracts that do not meet all of the criteria to be accounted for as reinsurance in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic *Financial Services - Insurance* have been accounted for at fair value under the fair value option in accordance with FASB ASC Topic *Financial Instruments*.

INVESTMENTS, CASH AND CASH EQUIVALENTS

Fixed Maturity Investments

Investments in fixed maturities are classified as trading and are reported at fair value. Investment transactions are recorded on the trade date with balances pending settlement reflected in the balance sheet as a receivable for investments sold or a payable for investments purchased. Net investment income includes interest and dividend income together with amortization of market premiums and discounts and is net of investment management and custody fees. The amortization of premium and accretion of discount for fixed maturity securities is computed using the effective yield method. For mortgage-backed securities and other holdings for which there is prepayment risk, prepayment assumptions are evaluated quarterly and revised as necessary. Any adjustments required due to the change in effective yields and maturities are recognized on a prospective basis through yield adjustments. Fair values of investments are based on quoted market prices, or when such prices are not available, by reference to broker or underwriter bid indications and/or internal pricing valuation techniques. The net unrealized appreciation or depreciation on fixed maturity investments trading is included in net realized and unrealized gains (losses) on investments in the consolidated statements of operations. Realized gains or losses on the sale of investments are determined on the basis of the first in first out cost method.

Short Term Investments

Short term investments, which are managed as part of the Company's investment portfolio and have a maturity of one year or less when purchased, are carried at fair value. The net unrealized appreciation or depreciation on short term investments is included in net realized and unrealized gains on investments in the consolidated statements of operations.

Equity Investments, Classified as Trading

Equity investments are accounted for at fair value in accordance with FASB ASC Topic *Financial Instruments*. Fair values are primarily priced by pricing services, reflecting the closing price quoted for the final trading day of the period. Net investment income includes dividend income and the net realized and unrealized appreciation or depreciation on equity investments is included in net realized and unrealized gains (losses) on investments in the consolidated statements of operations.

Other Investments

The Company accounts for its other investments at fair value in accordance with FASB ASC Topic *Financial Instruments* with interest, dividend income, income distributions and realized and unrealized gains and losses included in net investment income. The fair value of certain of the Company's fund investments, which principally include private equity investments, senior secured bank loan funds and hedge funds, is recorded on its balance sheet in other investments, and is generally established on the basis of the net valuation criteria established by the managers of such investments, if applicable. The net valuation criteria established by the managers of such investments is established in accordance with the governing documents of such investments. Certain of the Company's fund managers, fund administrators, or both, are unable to provide final fund valuations as of the Company's current reporting date. The typical reporting lag experienced by the Company to receive a final net asset value report is one month for hedge funds and senior secured bank loan funds and three months for private equity investments, although, in the past, in respect of certain of the Company's private equity investments, the Company has on occasion experienced delays of up to six months at year end, as the private equity investments typically complete their respective year-end audits before releasing their final net asset value statements.

In circumstances where there is a reporting lag between the current period end reporting date and the reporting date of the latest fund valuation, the Company estimates the fair value of these funds by starting with the prior month or quarter-end fund valuations, adjusting these valuations for actual capital calls, redemptions or distributions, as well as the impact of changes in foreign currency exchange rates, and then estimating the return for the current period. In circumstances in which the Company estimates the return for the current period, all information available to the Company is utilized. This principally includes preliminary estimates reported to the Company by its fund managers, obtaining the valuation of underlying portfolio investments where such underlying investments are publicly traded and therefore have a readily observable price, using information that is available to the Company with respect to the underlying investments, reviewing various indices for similar investments or asset classes, as well as estimating returns based on the results of similar types of investments for which the Company has obtained reported results, or other valuation methods, where possible. Actual final fund valuations may differ, perhaps materially so, from the Company's estimates and these differences are recorded in the Company's statement of operations in the period in which they are reported to the Company as a change in estimate.

The Company's other investments also include investments in catastrophe bonds which are recorded at fair value and the fair value is based on broker or underwriter bid indications.

Investments in Other Ventures, Under Equity Method

Investments in which the Company has significant influence over the operating and financial policies of the investee are classified as investments in other ventures, under equity method, and are accounted for under the equity method of accounting. Under this method, the Company records its proportionate share of income or loss from such investments in its results for the period. Any decline in value of investments in other ventures, under equity method considered by management to be other-than-temporary is charged to income in the period in which it is determined.

Cash and Cash Equivalents

Cash equivalents include money market instruments with a maturity of ninety days or less when purchased.

STOCK INCENTIVE COMPENSATION

The Company is authorized to issue restricted stock awards and units, performance shares, stock options and other equity-based awards to its employees and directors. The fair value of the compensation cost is measured at the grant date and expensed over the period for which the employee is required to provide services in exchange for the award.

In addition, the Company is authorized to issue cash settled restricted stock units ("CSRSU") to its employees. The fair value of CSRSUs is determined using the fair market value of RenaissanceRe common shares at the end of each reporting period and is expensed over the period for which the employee is required to provide service in exchange for the award. The fair value of these awards is recorded on the Company's consolidated balance sheet as a liability as it is expensed and until the point payment is made to the employee.

The Company has elected to recognize forfeitures as they occur rather than estimating service-based forfeitures over the requisite service period.

DERIVATIVES

From time to time, the Company enters into derivative instruments such as futures, options, swaps, forward contracts and other derivative contracts primarily to manage its foreign currency exposure, obtain exposure to a particular financial market, for yield enhancement, or for trading and to assume risk. The Company accounts for its derivatives in accordance with FASB ASC Topic *Derivatives and Hedging*, which requires all derivatives to be recorded at fair value on the Company's balance sheet as either assets or liabilities, depending on their rights or obligations, with changes in fair value reflected in current earnings. Commencing in 2019, the Company elected to adopt hedge accounting for certain of its derivative instruments used as hedges of a net investment in a foreign operation, as discussed below. The fair value of the Company's derivatives is estimated by reference to quoted prices or broker quotes, where available, or in the absence of quoted prices or broker quotes, the use of industry or internal valuation models.

Hedges of the Net Investment in a Foreign Operation

Changes in the fair value of derivative instruments used to hedge the net investment in a foreign operation, to the extent effective as a hedge, are recorded as a component of accumulated other comprehensive income (loss) in foreign currency translation adjustments, net of tax. Cumulative changes in fair value recorded in accumulated other comprehensive income (loss) are reclassified into earnings upon the sale, or complete or substantially complete liquidation, of the foreign operation. Any hedge ineffectiveness is recorded immediately in current period earnings as net foreign exchange gains (losses).

Hedge Documentation and Effectiveness Testing

To qualify for hedge accounting treatment, a derivative must be highly effective in mitigating the designated changes in value or cash flow of the hedged item. At the inception of a hedge, the Company formally documents relationships between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking each hedge transaction. The documentation process includes linking derivatives that are designated as net investment hedges to specific assets or liabilities on the consolidated balance sheet. The Company also formally assesses, both at the hedge's inception and on an ongoing basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in the net investment in a foreign operation. The Company will discontinue hedge accounting prospectively if it determines that the derivative is no longer highly effective in offsetting changes in the net investment in a foreign operation, the derivative is no longer designated as a hedging instrument, or the derivative expires or is sold, terminated or exercised. If hedge accounting is discontinued, the derivative continues to be carried at fair value on the consolidated balance sheet with changes in its fair value recognized in current period earnings through net realized and unrealized gains (losses) on investments.

FAIR VALUE

The Company accounts for certain of its assets and liabilities at fair value in accordance with FASB ASC Topic *Fair Value Measurements and Disclosures*. The Company recognizes the change in unrealized gains and losses arising from changes in fair value in its statements of operations.

BUSINESS COMBINATIONS, GOODWILL AND OTHER INTANGIBLE ASSETS

The Company accounts for business combinations in accordance with FASB ASC Topic *Business Combinations*, and goodwill and other intangible assets that arise from business combinations in accordance with FASB ASC Topic *Intangibles – Goodwill and Other*. A purchase price that is in excess of the fair value of the net assets acquired arising from a business combination is recorded as goodwill, and is not amortized. Other intangible assets with a finite life are amortized over the estimated useful life of the asset. Other intangible assets with an indefinite useful life are not amortized.

Goodwill and other indefinite life intangible assets are tested for impairment on an annual basis or more frequently if events or changes in circumstances indicate that the carrying amount may not be recoverable. Finite life intangible assets are reviewed for indicators of impairment on an annual basis or more frequently if events or changes in circumstances indicate that the carrying amount may not be recoverable, and tested for impairment if appropriate. For purposes of the annual impairment evaluation, goodwill is assigned to the applicable reporting unit of the acquired entities giving rise to the goodwill. Goodwill and other intangible assets recorded in connection with investments accounted for under the equity method, are recorded as “Investments in other ventures, under equity method” on the Company’s consolidated balance sheets.

The Company has established the beginning of the fourth quarter as the date for performing its annual impairment tests. The Company has the option to first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. Under this option, the Company would not be required to calculate the fair value of a reporting unit unless the Company determines, based on its qualitative assessment, that it is more likely than not that a reporting unit’s fair value is less than its carrying amount. If goodwill or other intangible assets are impaired, they are written down to their estimated fair value with a corresponding expense reflected in the Company’s consolidated statements of operations.

The Company initially recorded VOBA to reflect the establishment of the value of business acquired asset, which represents the estimated present value of the expected underwriting profit within the unearned premiums liability, net of reinsurance, less costs to service the related policies and a risk premium. VOBA is derived using, among other things, estimated loss ratios by line of business to calculate the underwriting profit, weighted average cost of capital, risk premium and expected payout patterns. The adjustment for VOBA will be amortized to acquisition expenses over approximately two years, as the contracts for business in-force as of the acquisition date expire.

NONCONTROLLING INTERESTS

The Company accounts for redeemable noncontrolling interests in the mezzanine section of the Company’s consolidated balance sheet in accordance with United States Securities and Exchange Commission (“SEC”) guidance which is applicable to SEC registrants. The SEC guidance requires shares, not required to be accounted for in accordance with FASB ASC Topic *Distinguishing Liabilities from Equity*, and having redemption features that are not solely within the control of the issuer, to be classified outside of permanent equity in the mezzanine section of the balance sheet. Because the share classes related to the redeemable noncontrolling interest portion of the issuer are not considered liabilities in accordance with FASB ASC Topic *Distinguishing Liabilities from Equity* and have redemption features that are not solely within the control of the issuer, the redeemable noncontrolling interests are presented in the mezzanine section on the Company’s consolidated balance sheet in accordance with the SEC guidance noted above. The SEC guidance does not impact the accounting for redeemable noncontrolling interest on the consolidated statements of operations; therefore, the provisions of FASB ASC Topic *Consolidation* with respect to the consolidated statements of operations still apply, and net income attributable to redeemable noncontrolling interests is presented separately in the Company’s consolidated statements of operations.

VARIABLE INTEREST ENTITIES

The Company accounts for VIEs in accordance with FASB ASC Topic *Consolidation*, which requires the consolidation of all VIEs by the primary beneficiary, that being the investor that has the power to direct the activities of the VIE and that will absorb a portion of the VIE's expected losses or residual returns that could potentially be significant to the VIE. For VIEs the Company determines it has a variable interest in, it determines whether it is the primary beneficiary of a VIE by performing an analysis that principally considers: (i) the VIE's purpose and design, including the risks the VIE was designed to create and pass through to its variable interest holders; (ii) the VIE's capital structure; (iii) the terms between the VIE and its variable interest holders and other parties involved with the VIE; (iv) which variable interest holders have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance; (v) which variable interest holders have the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE; and (vi) related party relationships. The Company reassesses its initial determination of whether the Company is the primary beneficiary of a VIE upon changes in facts and circumstances that could potentially alter the Company's assessment.

EARNINGS PER SHARE

The Company calculates earnings per share in accordance with FASB ASC Topic *Earnings per Share*. Basic earnings per share are based on weighted average common shares and exclude any dilutive effects of options and restricted stock. Diluted earnings per share assumes the exercise of all dilutive stock options and restricted stock grants.

The two-class method is used to determine earnings per share based on dividends declared on common shares and participating securities (i.e., distributed earnings) and participation rights of participating securities in any undistributed earnings. Each unvested restricted share granted by the Company to its employees is considered a participating security and the Company uses the two-class method to calculate its net income available to RenaissanceRe common shareholders per common share – basic and diluted.

FOREIGN EXCHANGE

Monetary assets and liabilities denominated in a currency other than the functional currency of the Company's subsidiaries in which those monetary assets and liabilities reside are revalued into such subsidiary's functional currency at the prevailing exchange rate on the balance sheet date. Revenues and expenses denominated in a currency other than the functional currency of the Company's subsidiaries, are valued at the exchange rate on the date on which the underlying revenue or expense transaction occurred. The net effect of these revaluation adjustments are recognized in the Company's consolidated statement of operations as part of net foreign exchange (gains) losses.

The Company's functional currency is the U.S. dollar. Certain of the Company's subsidiaries have a functional currency other than the U.S. dollar. Assets and liabilities of foreign operations whose functional currency is not the U.S. dollar are translated into the Company's U.S. dollar reporting currency at prevailing balance sheet-date exchange rates, while revenue and expenses of such foreign operations are translated into the Company's U.S. dollar functional currency at monthly average exchange rates during the year. The net effect of these translation adjustments, as well as any gains or losses on intercompany balances for which settlement is not planned or anticipated in the foreseeable future, net of applicable deferred income taxes, is included in the Company's consolidated balance sheet as currency translation adjustments and reflected within accumulated other comprehensive income (loss).

TAXATION

Income taxes have been provided for in accordance with the provisions of FASB ASC Topic *Income Taxes*. Deferred tax assets and liabilities result from temporary differences between the amounts recorded in the consolidated financial statements and the tax basis of the Company's assets and liabilities. Such temporary differences are primarily due to net operating loss carryforwards and GAAP versus tax basis accounting differences relating to interest expense, underwriting results, accrued expenses and investments. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance against deferred tax assets is recorded if it is more likely than not that all, or some portion, of the benefits related to deferred tax assets will not be realized.

Uncertain tax positions are also accounted for in accordance with FASB ASC Topic *Income Taxes*. Uncertain tax positions must meet a more likely than not recognition threshold to be recognized.

RECENTLY ADOPTED ACCOUNTING PRONOUNCEMENTS

Leases

In February 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-02, *Leases* and subsequently issued a number of other ASUs to amend the guidance, each ultimately reflected in FASB ASC Topic *Leases*. FASB ASC Topic *Leases* requires, among other items, lessees to recognize lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under the previous guidance. FASB ASC Topic *Leases* was effective for public business entities for annual and interim periods beginning after December 15, 2018. The Company has adopted FASB ASC Topic *Leases* through the application of the modified retrospective transition approach. In addition, the Company employed certain practical expedients permitted under the guidance and utilized its incremental borrowing rate in determining the present value of lease payments, not yet paid. The adoption of this guidance did not have a material impact on the Company’s consolidated statements of operations and financial position. The Company determined there was no material impact and as a result, there was no cumulative effect adjustment to opening retained earnings as of January 1, 2019.

Intra-Entity Transfers of Assets Other Than Inventory

In October 2016, the FASB issued ASU No. 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory* (“ASU 2016-16”). ASU 2016-16 requires entities to recognize the income tax consequences of intra-entity transfers of assets other than inventory when the transfers occur; this is a change from current guidance which prohibits the recognition of current and deferred income taxes until the underlying assets have been sold to outside entities. ASU 2016-16 was effective for public business entities for annual and interim periods beginning after December 15, 2018. The adoption of this guidance did not have a material impact on the Company’s consolidated statements of operations and financial position.

Improvements to Employee Share-Based Payment Accounting

In March 2016, the FASB issued ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting* (“ASU 2016-09”). ASU 2016-09 was issued to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, treatment of forfeitures, classification of awards as either equity or liabilities, and the classification of taxes paid on the statements of cash flows. ASU 2016-09 became effective for the Company in annual and interim periods beginning after December 15, 2016. The cumulative effect of the adoption of ASU 2016-09 was a \$2.2 million increase to opening retained earnings as of January 1, 2017.

Revenue from Contracts with Customers

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (“ASU 2014-09”). ASU 2014-09 provides comprehensive guidance on the recognition of revenue from customers arising from the transfer of goods and services. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 also provides guidance on accounting for certain contract costs and had also required new disclosures. ASU 2014-09 was to be effective for public business entities in annual and interim periods beginning after December 15, 2016, however in July 2015, the FASB decided to defer by one year the effective dates of ASU 2014-09, and as a result, ASU 2014-09 is effective for public business entities in annual and interim periods beginning after December 15, 2017. ASU 2014-09 notably excludes the accounting for insurance contracts, leases, financial instruments and guarantees. As a result, the Company’s implementation efforts primarily focused on other income and operational expenses on its consolidated statements of operations. The adoption of ASU 2014-09 did not have a material impact on the Company’s consolidated statements of operations and financial position.

Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued ASU No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities* ("ASU 2016-01"). ASU 2016-01 requires equity investments (except those accounted for under the equity method of accounting or those that result in the consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income, simplifies the impairment assessment of equity investments without readily determinable values by requiring a qualitative assessment to identify impairment, eliminates the requirement to disclose the methods and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost, requires the use of the exit price notion when measuring the fair value of financial instruments for disclosure purposes, requires separate presentation in other comprehensive income of the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the organization has elected to measure the liabilities in accordance with the fair value option, requires the separate presentation of financial assets and financial liabilities by measurement category and form of financial asset on the balance sheet or the accompanying notes to the financial statements and clarifies that the reporting organization should evaluate the need for a valuation allowance on a deferred tax asset related to available for sale securities in combination with the organization's other deferred tax assets. ASU 2016-01 is effective for public business entities in annual and interim periods beginning after December 15, 2017. The adoption of ASU 2016-01 did not have a material impact on the Company's consolidated statements of operations and financial position.

Classification of Certain Cash Receipts and Cash Payments

In August 2016, the FASB issued ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"). ASU 2016-15 clarifies the classification of receipts and payments in the statement of cash flows. ASU 2016-15 provides guidance related to (1) settlement and payment of zero coupon debt instruments, (2) contingent consideration, (3) proceeds from settlement of insurance claims, (4) proceeds from settlement of corporate and bank owned life insurance policies, (5) distributions from equity method investees, (6) cash receipts from beneficial interests obtained by a transferor, and (7) general guidelines for cash receipts and payments that have more than one aspect of classification. ASU 2016-15 is effective for public business entities for annual periods beginning after December 15, 2017, and interim periods within those fiscal years. The adoption of ASU 2016-15 resulted in the reclassification of \$20.0 million of cash inflows from cash flows provided by operating activities, to cash flows used in investing activities for 2017. This amount related to a return of investment associated with the Company's investment in Top Layer Reinsurance Ltd, recorded under the equity method of accounting.

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS NOT YET ADOPTED

Measurement of Credit Losses on Financial Instruments

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). ASU 2016-13 modifies the recognition of credit losses by replacing the incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. ASU 2016-13 is applicable to financial assets such as loans, debt securities, trade receivables, off-balance sheet credit exposures, reinsurance receivables, and other financial assets that have the contractual right to receive cash. The measurement of expected credit losses is based on relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. The Company's invested assets are measured at fair value through net income, and therefore those invested assets would not be impacted by the adoption of ASU 2016-13. The Company has other financial assets, such as reinsurance recoverables, that could be impacted by the adoption of ASU 2016-13. ASU 2016-13 is effective for public business entities that are SEC filers for annual and interim periods beginning after December 15, 2019. The Company is currently evaluating the impact of this guidance; however, it is not expected to have a material impact on the Company's consolidated statements of operations and financial position.

Simplifying the Test for Goodwill Impairment

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"). Among other things, ASU 2017-04 requires the following: (1) the elimination of step two of the goodwill impairment test; entities will no longer utilize the implied fair value of their assets and liabilities for purposes of testing goodwill for impairment, (2) the quantitative portion of the goodwill impairment test will be performed by comparing the fair value of a reporting unit with its carrying amount; an impairment charge is to be recognized for the excess of carrying amount over fair value, but only to the extent of the amount of goodwill allocated to that reporting unit, and (3) foreign currency translation adjustments are not to be allocated to a reporting unit from an entity's accumulated other comprehensive income (loss); the reporting unit's carrying amount should include only the currently translated balances of the assets and liabilities assigned to the reporting unit. ASU 2017-04 is effective for public business entities that are SEC filers for annual periods, or any interim goodwill impairment tests in annual periods, beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The Company is currently evaluating the impact of this guidance; however, it is not expected to have a material impact on the Company's consolidated statements of operations and financial position.

Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). The ASU 2018-13 modifies the disclosure requirements of fair value measurements as part of the disclosure framework project with the objective to improve the effectiveness of disclosures in the notes to the financial statements. ASU 2018-13 allows for removal of the amount and reasons for transfer between Level 1 and Level 2 of the fair value hierarchy; the policy for transfers between levels; and the valuation processes for Level 3 fair value measurements. ASU 2018-13 is effective for all entities for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. The Company is currently evaluating the impact of this guidance; however, it is not expected to have a material impact on the Company's consolidated statements of operations and financial position.

NOTE 3. ACQUISITION OF TOKIO MILLENNIUM RE

Overview

The aggregate consideration for the TMR Stock Purchase, which closed on March 22, 2019, was \$1.6 billion, consisting of cash, RenaissanceRe common shares and a special dividend from TMR, as described in more detail below. The aggregate consideration paid at closing for the TMR Stock Purchase was based on the closing tangible book value of TMR, subject to a post-closing adjustment under the terms of the TMR Stock Purchase Agreement. The parties determined that no closing adjustment was required.

In connection with the closing of the TMR Stock Purchase, Tokio, RenaissanceRe Europe and RenaissanceRe UK entered into a reserve development agreement whereby RenaissanceRe Europe and RenaissanceRe UK agreed to cede to Tokio, and Tokio agreed to indemnify and reimburse RenaissanceRe Europe and RenaissanceRe UK for, substantially all of RenaissanceRe Europe and RenaissanceRe UK's adverse development on stated reserves at time of the closing, including unearned premium reserves, subject to certain terms and conditions. The reserve development agreement provides the Company with indemnification on stated reserves, including unearned premium reserves, for RenaissanceRe Europe and RenaissanceRe UK, on a whole-account basis, and takes into consideration adverse performance across the Company's reportable segments. To the extent the combined performance of acquired reserves for claims and claim expenses or unearned premiums is worse than expected on an aggregate basis across reportable segments, the Company is indemnified under the terms of the reserve development agreement and would expect to collect under the reserve development agreement.

At closing, RenaissanceRe Europe and Tokio entered into a retrocessional agreement pursuant to which RenaissanceRe Europe ceded to Tokio all of its liabilities arising from certain stop loss reinsurance contracts RenaissanceRe Europe entered into with third-party capital partners which were either in force as of the closing date or which incept prior to December 31, 2021.

The Company recorded \$49.7 million of corporate expenses associated with the acquisition of TMR during 2019 (2018 - \$3.4 million). Included in these expenses are compensation, transaction and integration-related costs.

Purchase Price

The Company's total purchase price for TMR was calculated as follows:

<i>Special Dividend</i>		
Special Dividend paid to common shareholders of Tokio and holders of Tokio equity awards	\$	500,000
<i>RenaissanceRe common shares</i>		
Common shares issued by RenaissanceRe to Tokio		1,739,071
Common share price of RenaissanceRe (1)	\$	143.75
Market value of RenaissanceRe common shares issued by RenaissanceRe to Tokio		249,998
<i>Cash consideration</i>		
Cash consideration paid by RenaissanceRe as acquisition consideration		813,595
Total purchase price		1,563,593
Less: Special Dividend paid to Tokio		(500,000)
Net purchase price	\$	<u>1,063,593</u>

(1) RenaissanceRe common share price was based on the 30-day trailing volume weighted average price of \$143.7539 as of market close on March 15, 2019, which approximates fair value.

Fair Value of Net Assets Acquired and Liabilities Assumed

The purchase price was allocated to the acquired assets and liabilities of the Company based on estimated fair values on March 22, 2019, the date the transaction closed, as detailed below. During the quarter ended March 31, 2019, the Company recognized goodwill of \$13.1 million, based on foreign exchange rates on March 22, 2019, attributable to the excess of the purchase price over the fair value of the net assets of TMR. The Company recognized identifiable finite lived intangible assets of \$11.2 million, which will be amortized over a weighted average period of 10.5 years, identifiable indefinite lived intangible assets of \$6.8 million, and certain other adjustments to the fair values of the assets acquired, liabilities assumed and shareholders' equity of TMR at March 22, 2019, based on foreign exchange rates on March 22, 2019, as summarized in the table below:

Shareholders' equity of TMR at March 22, 2019	\$ 1,032,961
Adjustments for fair value, by applicable balance sheet caption:	
Net deferred acquisition costs and value of business acquired	(56,788)
Net reserve for claims and claim expenses	67,782
Goodwill and intangible assets at March 22, 2019 of TMR	(6,569)
Total adjustments for fair value by applicable balance sheet caption before tax impact	4,425
Other assets - net deferred tax liability related to fair value adjustments and value of business acquired	(2,606)
Total adjustments for fair value by applicable balance sheet caption, net of tax	1,819
Adjustments for fair value of the identifiable intangible assets:	
Identifiable indefinite lived intangible assets (insurance licenses)	6,800
Identifiable finite lived intangible assets (top broker relationships and renewal rights)	11,200
Identifiable intangible assets before tax impact	18,000
Other assets - deferred tax liability on identifiable intangible assets	(2,281)
Total adjustments for fair value of the identifiable intangible assets and value of business acquired, net of tax	15,719
Total adjustments for fair value by applicable balance sheet caption, identifiable intangible assets and value of business acquired, net of tax	17,538
Shareholders' equity of TMR at fair value	1,050,499
Total net purchase price paid by RenaissanceRe	1,063,593
Excess purchase price over the fair value of net assets acquired assigned to goodwill	\$ 13,094

An explanation of the significant fair value adjustments and related future amortization is as follows:

- Net deferred acquisition costs and value of business acquired ("VOBA") - to reflect the elimination of TMR's net deferred acquisition costs, partially offset by the establishment of the value of business acquired asset, which represents the present value of the expected underwriting profit within the unearned premiums liability, net of reinsurance, less costs to service the related policies and a risk premium. The adjustment for VOBA will be amortized to acquisition expenses over approximately two years, as the contracts for business in-force as of the acquisition date expire. VOBA at March 22, 2019 was \$287.6 million;
- Reserve for claims and claim expenses - to reflect a decrease related to the present value of the net unpaid claims and claim expenses based on the estimated payout pattern, partially offset by an increase in net claims and claim expenses related to the estimated market based risk margin. The risk margin represents the estimated cost of capital required by a market participant to assume the net claims and claim expenses. This will be amortized using the projected discount and risk margin patterns of the net claims and claims expenses as of the acquisition date;
- Identifiable indefinite lived and finite lived intangible assets - to establish the fair value of identifiable intangible assets related to the acquisition of TMR described in detail below; and

- Other assets - to reflect the net deferred tax liability on identifiable intangible assets.

Identifiable intangible assets and accumulated amortization at December 31, 2019, consisted of the following, based on foreign exchange rates on March 22, 2019, and are included in goodwill and other intangible assets on the Company's consolidated balance sheet:

	Amount	Economic Useful Life
Top broker relationships	\$ 10,000	10.0 years
Renewal rights	1,200	15.0 years
Insurance licenses	6,800	Indefinite
Gross identifiable intangible assets related to the acquisition of TMR, at March 22, 2019	18,000	
Accumulated amortization (from March 22, 2019 through December 31, 2019)	810	
Net identifiable intangible assets related to the acquisition of TMR at December 31, 2019	<u>\$ 17,190</u>	

Amortization from the acquisition date, March 22, 2019, through December 31, 2019 was included in the Company's consolidated statements of operations for the year ended December 31, 2019.

An explanation of the identifiable intangible assets is as follows:

- Top broker relationships - the value of TMR's relationships with their top four brokers (Marsh & McLennan Companies, Inc., Aon plc, Willis Group Holdings Public Limited Company and Jardine Lloyd Thompson Group plc.) after taking into consideration the expectation of the renewal of these relationships and the associated expenses. These will be amortized on a straight-line basis over the economic useful life as of the acquisition date;
- Renewal rights - the value of policy renewal rights after taking into consideration written premiums on assumed retention ratios and the insurance cash flows and the associated equity cash flows from these renewal policies over the expected life of the renewals. These will be amortized on a straight-line basis over the economic useful life as of the acquisition date; and
- Insurance licenses - the value of acquired insurance licenses, which provide the ability to write reinsurance in all 50 states of the U.S. and the District of Columbia.

As part of the allocation of the purchase price, included in the adjustment to other assets in the table above is a deferred tax liability of \$2.3 million related to the estimated fair value of the intangible assets recorded, as well as a net deferred tax liability of \$2.6 million related to certain other adjustments to the fair values of the assets acquired, VOBA, liabilities assumed and shareholders' equity. Other net deferred tax liabilities recorded primarily relate to differences between financial reporting and tax bases of the acquired assets and liabilities as of the acquisition date, March 22, 2019. The Company estimates that none of the goodwill that was recorded will be deductible for income tax purposes.

Financial Results

The following table summarizes the net contribution from the acquisition of TMR since March 22, 2019 that has been included in the Company's consolidated statements of operations and comprehensive income for the year ended December 31, 2019. Operating activities of TMR from the acquisition date, March 22, 2019, through December 31, 2019 are included in the Company's consolidated statements of operations for the year ended December 31, 2019.

The unaudited net contribution of the acquisition and integration of TMR is provided for informational purposes only and is not necessarily, and should not be assumed to be, an indication of the results that may be achieved in the future. These results are not used as a part of management analysis of the financial performance of the Company's business. These results primarily reflect items recorded directly by TMR, including: 1) net earned premium and net underwriting income on the in-force portfolio acquired with the acquisition of TMR and currently retained on TMR entities' balance sheets; 2) net earned premium and net underwriting income for those contracts which have renewed post-acquisition on one of the acquired TMR

entities' balance sheets; 3) net investment income and net realized and unrealized gains recorded directly by TMR; and 4) certain direct costs incurred directly by TMR. In addition, these results, where possible, are adjusted for transaction and integration related costs incurred by the Company. However, these results do not reflect on-going operating costs incurred by the Company in supporting TMR unless such costs are incurred directly by TMR. These results also do not give consideration to the impact of possible revenue enhancements, expense efficiencies, synergies or asset dispositions that may be achieved in the future. These results involve significant estimates and are not indicative of the future results of the acquired TMR entities which will be further impacted by potential changes in targeted business mix, investment management strategies, and synergies recognized from changes in the combined entity's operating structure, as well as the impact of changes in other business and capital management strategies.

Since the acquisition date, a growing number of underlying policies have been underwritten onto different legal entities, staffing has been allocated to new activities, and reinsurance has been purchased to cover combined risks, only some of which would have been reflected in the underlying legacy TMR results. In future quarters, the summary results of TMR will become increasingly impracticable to produce, and even less indicative of the results of the acquired TMR entities, given the significant estimates involved and the nature and pace of our integration activities, which are intended to integrate TMR as quickly as possible.

	Year ended December 31, 2019 (1)
Total revenues	\$ 922,727
Net income available to RenaissanceRe common shareholders (2)	\$ 99,169

(1) Includes the net contribution from the acquisition of TMR since March 22, 2019 that has been included in the Company's consolidated statements of operations and comprehensive income through December 31, 2019.

(2) Includes \$49.7 million of corporate expenses associated with the acquisition and integration of TMR for the year ended December 31, 2019.

Taxation

At the date of acquisition and in conjunction with the acquisition of TMR, the Company established a net deferred tax liability of \$5.7 million and recorded a valuation allowance against TMR's deferred tax assets of \$35.7 million in its consolidated financial statements. A predominant amount of the valuation allowance related to the U.S. operations of TMR was recorded by TMR prior to the acquisition.

Supplemental Pro Forma Information

The following table presents unaudited pro forma consolidated financial information for the years ended December 31, 2019 and 2018, respectively, and assumes the acquisition of TMR occurred on January 1, 2018. The unaudited pro forma consolidated financial information is provided for informational purposes only and is not necessarily, and should not be assumed to be, an indication of the results that would have been achieved had the transaction been completed as of January 1, 2018 or that may be achieved in the future. The unaudited pro forma consolidated financial information does not give consideration to the impact of possible revenue enhancements, expense efficiencies, synergies or asset dispositions that may result from the acquisition of TMR. In addition, unaudited pro forma consolidated financial information does not include the effects of costs associated with any restructuring or integration activities resulting from the acquisition of TMR, as they are nonrecurring.

<u>Year ended December 31,</u>	2019	2018
Total revenues	\$ 4,542,979	\$ 3,338,903
Net income available to RenaissanceRe common shareholders	\$ 768,719	\$ 281,974

Among other adjustments, and in addition to the fair value adjustments and recognition of goodwill, VOBA and identifiable intangible assets noted above, other material nonrecurring pro forma adjustments directly attributable to the acquisition of TMR principally included certain adjustments to recognize transaction related costs, align accounting policies, and amortize fair value adjustments, VOBA, and identifiable definite lived intangible assets, net of related tax impacts.

Defined Benefit Pension Plan

TMR has a contributory defined benefit pension plan for certain employees, which was not material to RenaissanceRe's results of operations, financial condition or cash flows for the year ended December 31, 2019.

The plan offers mandatory benefits as prescribed by the applicable law, as well as voluntary benefits. These mandatory benefits include guarantees regarding the level of interest paid annually on accrued pension savings. TMR and the members of the plan contribute a defined percentage of salary to the pension arrangement and the rates on these accrued savings are converted into a pension payment at the time of retirement, and credit accumulation is earned on these contributions. At retirement, the accumulated contributions and interest credits are converted into a pension.

At December 31, 2019, the net balance sheet liability was \$6.5 million, comprising \$20.4 million of projected benefit obligation and \$13.9 million of plan assets at fair value.

NOTE 4. GOODWILL AND OTHER INTANGIBLE ASSETS

The following table shows an analysis of goodwill and other intangible assets included in goodwill and other intangible assets on the Company's consolidated balance sheets:

	Goodwill and other intangible assets		
	Goodwill	Other intangible assets	Total
Balance as of December 31, 2017			
Gross amount	\$ 199,889	\$ 96,599	\$ 296,488
Accumulated impairment losses and amortization	(2,299)	(51,044)	(53,343)
	197,590	45,555	243,145
Amortization	—	(5,727)	(5,727)
Balance as of December 31, 2018			
Gross amount	199,889	96,599	296,488
Accumulated impairment losses and amortization	(2,299)	(56,771)	(59,070)
	197,590	39,828	237,418
Acquired during the year	13,094	18,000	31,094
Amortization	—	(6,286)	(6,286)
Balance as of December 31, 2019			
Gross amount	212,983	114,599	327,582
Accumulated impairment losses and amortization	(2,299)	(63,057)	(65,356)
	<u>\$ 210,684</u>	<u>\$ 51,542</u>	<u>\$ 262,226</u>

During the quarter ended March 31, 2019, the Company recognized goodwill of \$13.1 million, based on foreign exchange rates on March 22, 2019, attributable to the excess of the purchase price over the fair value of the net assets acquired in the TMR Stock Purchase. In addition, the Company recognized identifiable finite lived intangible assets of \$11.2 million and identifiable indefinite lived intangible assets of \$6.8 million associated with TMR. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to goodwill and other intangible assets associated with the acquisition of TMR.

The following table shows an analysis of goodwill and other intangible assets included in investments in other ventures, under equity method on the Company's consolidated balance sheets:

	Goodwill and other intangible assets included in investments in other ventures, under equity method		
	Goodwill	Other intangible assets	Total
Balance as of December 31, 2017			
Gross amount	\$ 12,318	\$ 51,796	\$ 64,114
Accumulated impairment losses and amortization	(4,500)	(42,880)	(47,380)
	7,818	8,916	16,734
Acquired during the year	2,780	11,108	13,888
Amortization	—	(2,886)	(2,886)
Balance as of December 31, 2018			
Gross amount	15,098	62,904	78,002
Accumulated impairment losses and amortization	(4,500)	(45,766)	(50,266)
	10,598	17,138	27,736
Acquired during the year	—	4	4
Amortization	—	(2,816)	(2,816)
Balance as of December 31, 2019			
Gross amount	15,098	62,908	78,006
Accumulated impairment losses and amortization	(4,500)	(48,582)	(53,082)
	<u>\$ 10,598</u>	<u>\$ 14,326</u>	<u>\$ 24,924</u>

On March 23, 2018, the Company made an equity investment in TWFG Holding Company LLC ("TWFG") and the transaction was accounted under the equity method of accounting. Total consideration paid was allocated to the Company's proportionate share of the net assets of TWFG, other identifiable intangible assets and goodwill. In connection with the acquisition of TWFG, the Company recognized identifiable finite lived intangible assets of \$2.0 million and identifiable indefinite lived intangible assets of \$9.1 million. In addition, the Company recognized goodwill of \$2.8 million.

In accordance with the Company's established accounting policy, the beginning of the fourth quarter was used as the date for performing the annual impairment test. The Company first assessed qualitative factors to determine whether it was necessary to perform a quantitative impairment test. Based on its qualitative assessment, the Company determined it was not more likely than not that the fair value of the goodwill and other intangible assets in question were less than their respective carrying amounts. The qualitative assessment included the following factors which the Company determined had not significantly deteriorated given specific facts and circumstances: macroeconomic conditions; industry and market conditions; costs factors; and overall financial performance. The Company also performed a quantitative analysis using a discounted cash flow model and concluded that the full amount of the goodwill and other intangible assets were not impaired. Other than the goodwill and other intangible assets acquired during the year as noted above and normal course amortization of intangible assets, in accordance with the Company's established accounting policy, there were no adjustments to carried goodwill and other intangible assets during the year ended December 31, 2019.

The gross carrying value and accumulated amortization by major category of other intangible assets included in goodwill and other intangible assets and investments in other ventures, under equity method on the Company's consolidated balance sheets is shown below:

	Other intangible assets		
	Gross carrying value	Accumulated amortization and impairment losses	Total
At December 31, 2019			
Customer relationships and customer lists	\$ 108,651	\$ (69,298)	\$ 39,353
Value of business acquired	20,200	(20,200)	—
Software	12,230	(12,230)	—
Licenses	26,186	—	26,186
Patents and intellectual property	4,500	(4,500)	—
Covenants not-to-compete	4,030	(4,030)	—
Trademarks and trade names	1,710	(1,381)	329
	<u>\$ 177,507</u>	<u>\$ (111,639)</u>	<u>\$ 65,868</u>

	Other intangible assets		
	Gross carrying value	Accumulated amortization and impairment losses	Total
At December 31, 2018			
Customer relationships and customer lists	\$ 97,419	\$ (60,221)	\$ 37,198
Value of business acquired	20,200	(20,200)	—
Software	12,230	(12,230)	—
Licenses	19,414	—	19,414
Patents and intellectual property	4,500	(4,500)	—
Covenants not-to-compete	4,030	(4,030)	—
Trademarks and trade names	1,710	(1,356)	354
	<u>\$ 159,503</u>	<u>\$ (102,537)</u>	<u>\$ 56,966</u>

The remaining useful life of intangible assets with finite lives ranges from 0.5 to 14.2 years, with a weighted-average amortization period of 7.0 years. Expected amortization of the other intangible assets, including other intangible assets recorded in investments in other ventures, under equity method, is shown below:

	Other intangibles	Other intangible assets included in investments in other ventures, under equity method	Total
2020	\$ 6,317	\$ 1,955	\$ 8,272
2021	5,990	1,095	7,085
2022	5,602	1,095	6,697
2023	5,173	631	5,804
2024	4,716	194	4,910
2024 and thereafter	6,705	209	6,914
Total remaining amortization expense	34,503	5,179	39,682
Indefinite lived	17,039	9,147	26,186
Total	\$ 51,542	\$ 14,326	\$ 65,868

NOTE 5. INVESTMENTS

Fixed Maturity Investments Trading

The following table summarizes the fair value of fixed maturity investments trading:

	December 31, 2019	December 31, 2018
U.S. treasuries	\$ 4,467,345	\$ 3,331,411
Agencies	343,031	174,883
Municipal	—	6,854
Non-U.S. government	497,392	279,818
Non-U.S. government-backed corporate	321,356	160,063
Corporate	3,075,660	2,450,244
Agency mortgage-backed	1,148,499	817,880
Non-agency mortgage-backed	294,604	278,680
Commercial mortgage-backed	468,698	282,294
Asset-backed	555,070	306,743
Total fixed maturity investments trading	\$ 11,171,655	\$ 8,088,870

Contractual maturities of fixed maturity investments trading are described in the following table. Expected maturities will differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

<u>At December 31, 2019</u>	<u>Amortized Cost</u>	<u>Fair Value</u>
Due in less than one year	\$ 543,687	\$ 544,636
Due after one through five years	5,467,501	5,522,769
Due after five through ten years	2,386,467	2,420,602
Due after ten years	211,424	216,777
Mortgage-backed	1,902,365	1,911,801
Asset-backed	555,970	555,070
Total	<u>\$ 11,067,414</u>	<u>\$ 11,171,655</u>

Equity Investments Trading

The following table summarizes the fair value of equity investments trading:

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Financials	\$ 248,189	\$ 200,357
Communications and technology	79,206	42,333
Industrial, utilities and energy	38,583	24,520
Consumer	35,987	20,639
Healthcare	29,510	18,925
Basic materials	5,456	3,478
Total	<u>\$ 436,931</u>	<u>\$ 310,252</u>

Pledged Investments

At December 31, 2019, \$7.0 billion of cash and investments at fair value were on deposit with, or in trust accounts for the benefit of, various counterparties, including with respect to the Company's letter of credit facilities (2018 - \$5.7 billion). Of this amount, \$2.0 billion is on deposit with, or in trust accounts for the benefit of, U.S. state regulatory authorities (2018 - \$2.0 billion).

Reverse Repurchase Agreements

At December 31, 2019, the Company held \$57.6 million (2018 - \$3.7 million) of reverse repurchase agreements. These loans are fully collateralized, are generally outstanding for a short period of time and are presented on a gross basis as part of short term investments on the Company's consolidated balance sheets. The required collateral for these loans typically includes high-quality, readily marketable instruments at a minimum amount of 102% of the loan principal. Upon maturity, the Company receives principal and interest income.

Net Investment Income

The components of net investment income are as follows:

Year ended December 31,	2019	2018	2017
Fixed maturity investments	\$ 318,503	\$ 211,973	\$ 179,624
Short term investments	56,264	33,571	11,082
Equity investments	4,808	4,474	3,628
Other investments			
Private equity investments	14,981	477	33,999
Other	39,246	22,475	8,067
Cash and cash equivalents	7,676	3,810	1,196
	441,478	276,780	237,596
Investment expenses	(17,645)	(14,914)	(15,387)
Net investment income	\$ 423,833	\$ 261,866	\$ 222,209

Net Realized and Unrealized Gains (Losses) on Investments

Net realized and unrealized gains (losses) on investments are as follows:

Year ended December 31,	2019	2018	2017
Gross realized gains	\$ 133,409	\$ 21,284	\$ 49,121
Gross realized losses	(43,149)	(91,098)	(38,832)
Net realized gains (losses) on fixed maturity investments	90,260	(69,814)	10,289
Net unrealized gains (losses) on fixed maturity investments trading	170,183	(57,310)	8,479
Net realized and unrealized gains (losses) on investments-related derivatives	58,891	(8,784)	(2,490)
Net realized gains on equity investments trading sold during the period	31,062	27,739	80,027
Net unrealized gains (losses) on equity investments trading still held at reporting date	64,087	(66,900)	39,517
Net realized and unrealized gains (losses) on equity investments trading	95,149	(39,161)	119,544
Net realized and unrealized gains (losses) on investments	\$ 414,483	\$ (175,069)	\$ 135,822

Other Investments

The table below shows the fair value of the Company's portfolio of other investments:

At December 31,	2019	2018
Catastrophe bonds	\$ 781,641	\$ 516,571
Private equity investments	271,047	242,647
Senior secured bank loan funds	22,598	14,482
Hedge funds	12,091	11,233
Total other investments	\$ 1,087,377	\$ 784,933

Interest income, income distributions and net realized and unrealized gains on other investments are included in net investment income and totaled \$54.2 million (2018 – \$23.0 million, 2017 – \$42.1 million) of which \$12.2 million related to net unrealized gains (2018 – losses of \$8.3 million, 2017 – gains of \$24.7 million). Included in net investment income for 2019 is a loss of \$5.5 million (2018 - income of \$0.3 million, 2017 - income of \$1.9 million) representing the change in estimate during the period related to the

difference between the Company's estimated fair value due to the lag in reporting, as discussed in "Note 2. Significant Accounting Policies," and the actual amount as reported in the final net asset values provided by the Company's fund managers.

The Company has committed capital to private equity investments, other investments and investments in other ventures of \$1.1 billion, of which \$708.4 million has been contributed at December 31, 2019. The Company's remaining commitments to these investments at December 31, 2019 totaled \$411.3 million. In the future, the Company may enter into additional commitments in respect of private equity investments or individual portfolio company investment opportunities.

Investments in Other Ventures, under Equity Method

The table below shows the Company's portfolio of investments in other ventures, under equity method:

At December 31,	2019		2018	
	Ownership %	Carrying Value	Ownership %	Carrying Value
Tower Hill Companies	24.9%	36,779	24.9%	38,241
Top Layer Re	50.0%	35,363	50.0%	46,562
Other	26.6%	34,407	30.6%	30,369
Total investments in other ventures, under equity method		<u>\$ 106,549</u>		<u>\$ 115,172</u>

The table below shows the Company's equity in earnings of other ventures, under equity method:

Year ended December 31,	2019	2018	2017
Tower Hill Companies	\$ 10,337	\$ 9,605	\$ (1,647)
Top Layer Re	8,801	8,852	9,851
Other	4,086	17	(174)
Total equity in earnings of other ventures	<u>\$ 23,224</u>	<u>\$ 18,474</u>	<u>\$ 8,030</u>

During 2019, the Company received \$36.5 million of distributions from its investments in other ventures, under equity method (2018 – \$26.1 million, 2017 – \$29.7 million). Losses from the Company's investments in other ventures, under equity method, net of distributions received, were \$0.8 million at December 31, 2019 (2018 - earnings of \$3.8 million, 2017 - losses of \$6.3 million). Except for Top Layer Re, the equity in earnings of the Company's investments in other ventures are reported one quarter in arrears.

NOTE 6. FAIR VALUE MEASUREMENTS

The use of fair value to measure certain assets and liabilities with resulting unrealized gains or losses is pervasive within the Company's consolidated financial statements. Fair value is defined under accounting guidance currently applicable to the Company to be the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between open market participants at the measurement date. The Company recognizes the change in unrealized gains and losses arising from changes in fair value in its consolidated statements of operations.

FASB ASC Topic *Fair Value Measurements and Disclosures* prescribes a fair value hierarchy that prioritizes the inputs to the respective valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to valuation techniques that use at least one significant input that is unobservable (Level 3). The three levels of the fair value hierarchy are described below:

- Fair values determined by Level 1 inputs utilize unadjusted quoted prices obtained from active markets for identical assets or liabilities for which the Company has access. The fair value is determined by multiplying the quoted price by the quantity held by the Company;
- Fair values determined by Level 2 inputs utilize inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets and liabilities in active markets, and inputs other than quoted prices that are observable for the asset or liability, such as interest rates and yield curves that are observable at commonly quoted intervals, broker quotes and certain pricing indices; and
- Level 3 inputs are based all or in part on significant unobservable inputs for the asset or liability, and include situations where there is little, if any, market activity for the asset or liability. In these cases, significant management assumptions can be used to establish management's best estimate of the assumptions used by other market participants in determining the fair value of the asset or liability.

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy within which the fair value measurement in its entirety falls has been determined based on the lowest level input that is significant to the fair value measurement of the asset or liability. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment, and the Company considers factors specific to the asset or liability.

In order to determine if a market is active or inactive for a security, the Company considers a number of factors, including, but not limited to, the spread between what a seller is asking for a security and what a buyer is bidding for the same security, the volume of trading activity for the security in question, the price of the security compared to its par value (for fixed maturity investments), and other factors that may be indicative of market activity.

There have been no material changes in the Company's valuation techniques, nor have there been any transfers between Level 1 and Level 2, or Level 2 and Level 3 during the period represented by these consolidated financial statements.

Below is a summary of the assets and liabilities that are measured at fair value on a recurring basis and also represents the carrying amount on the Company's consolidated balance sheets:

<u>At December 31, 2019</u>	<u>Total</u>	<u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u>	<u>Significant Other Observable Inputs (Level 2)</u>	<u>Significant Unobservable Inputs (Level 3)</u>
Fixed maturity investments				
U.S. treasuries	\$ 4,467,345	\$ 4,467,345	\$ —	\$ —
Agencies	343,031	—	343,031	—
Non-U.S. government	497,392	—	497,392	—
Non-U.S. government-backed corporate	321,356	—	321,356	—
Corporate	3,075,660	—	3,075,660	—
Agency mortgage-backed	1,148,499	—	1,148,499	—
Non-agency mortgage-backed	294,604	—	294,604	—
Commercial mortgage-backed	468,698	—	468,698	—
Asset-backed	555,070	—	555,070	—
Total fixed maturity investments	11,171,655	4,467,345	6,704,310	—
Short term investments	4,566,277	—	4,566,277	—
Equity investments trading	436,931	436,931	—	—
Other investments				
Catastrophe bonds	781,641	—	781,641	—
Private equity investments (1)	271,047	—	—	74,634
Senior secured bank loan funds (1)	22,598	—	—	—
Hedge funds (1)	12,091	—	—	—
Total other investments	1,087,377	—	781,641	74,634
Other assets and (liabilities)				
Assumed and ceded (re)insurance contracts (2)	4,731	—	—	4,731
Derivatives (3)	16,937	(1,020)	17,957	—
Total other assets and (liabilities)	21,668	(1,020)	17,957	4,731
	<u>\$ 17,283,908</u>	<u>\$ 4,903,256</u>	<u>\$ 12,070,185</u>	<u>\$ 79,365</u>

(1) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheet.

(2) Included in assumed and ceded (re)insurance contracts at December 31, 2019 was \$32.9 million of other assets and \$28.2 million of other liabilities.

(3) Refer to "Note 19. Derivative Instruments" for additional information related to the fair value, by type of contract, of derivatives entered into by the Company.

At December 31, 2018	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fixed maturity investments				
U.S. treasuries	\$ 3,331,411	\$ 3,331,411	\$ —	\$ —
Agencies	174,883	—	174,883	—
Municipal	6,854	—	6,854	—
Non-U.S. government	279,818	—	279,818	—
Non-U.S. government-backed corporate	160,063	—	160,063	—
Corporate	2,450,244	—	2,450,244	—
Agency mortgage-backed	817,880	—	817,880	—
Non-agency mortgage-backed	278,680	—	278,680	—
Commercial mortgage-backed	282,294	—	282,294	—
Asset-backed	306,743	—	306,743	—
Total fixed maturity investments	8,088,870	3,331,411	4,757,459	—
Short term investments	2,586,520	—	2,586,520	—
Equity investments trading	310,252	310,252	—	—
Other investments				
Catastrophe bonds	516,571	—	516,571	—
Private equity investments (1)	242,647	—	—	54,545
Senior secured bank loan funds (1)	14,482	—	—	—
Hedge funds (1)	11,233	—	—	—
Total other investments	784,933	—	516,571	54,545
Other assets and (liabilities)				
Assumed and ceded (re)insurance contracts (2)	(8,359)	—	—	(8,359)
Derivatives (3)	12,399	484	11,915	—
Total other assets and (liabilities)	4,040	484	11,915	(8,359)
	<u>\$ 11,774,615</u>	<u>\$ 3,642,147</u>	<u>\$ 7,872,465</u>	<u>\$ 46,186</u>

(1) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheet.

(2) Included in assumed and ceded (re)insurance contracts at December 31, 2018 was \$5.0 million of other assets and \$13.3 million of other liabilities.

(3) Refer to "Note 19. Derivative Instruments" for additional information related to the fair value, by type of contract, of derivatives entered into by the Company.

Level 1 and Level 2 Assets and Liabilities Measured at Fair Value

Fixed Maturity Investments

Fixed maturity investments included in Level 1 consist of the Company's investments in U.S. treasuries. Fixed maturity investments included in Level 2 are agencies, municipal, non-U.S. government, non-U.S. government-backed corporate, corporate, agency mortgage-backed, non-agency mortgage-backed, commercial mortgage-backed and asset-backed.

The Company's fixed maturity investments are primarily priced using pricing services, such as index providers and pricing vendors, as well as broker quotations. In general, the pricing vendors provide pricing for a high volume of liquid securities that are actively traded. For securities that do not trade on an

exchange, the pricing services generally utilize market data and other observable inputs in matrix pricing models to determine month end prices. Observable inputs include benchmark yields, reported trades, broker-dealer quotes, issuer spreads, bids, offers, reference data and industry and economic events. Index pricing generally relies on market traders as the primary source for pricing; however, models are also utilized to provide prices for all index eligible securities. The models use a variety of observable inputs such as benchmark yields, transactional data, dealer runs, broker-dealer quotes and corporate actions. Prices are generally verified using third-party data. Securities which are priced by an index provider are generally included in the index.

In general, broker-dealers value securities through their trading desks based on observable inputs. The methodologies include mapping securities based on trade data, bids or offers, observed spreads, and performance on newly issued securities. Broker-dealers also determine valuations by observing secondary trading of similar securities. Prices obtained from broker quotations are considered non-binding, however they are based on observable inputs and by observing secondary trading of similar securities obtained from active, non-distressed markets.

The Company considers these broker quotations to be Level 2 inputs as they are corroborated with other market observable inputs. The techniques generally used to determine the fair value of the Company's fixed maturity investments are detailed below by asset class.

U.S. treasuries

Level 1 - At December 31, 2019, the Company's U.S. treasuries fixed maturity investments were primarily priced by pricing services and had a weighted average yield to maturity of 1.7% and a weighted average credit quality of AA (2018 - 2.5% and AA, respectively). When pricing these securities, the pricing services utilize daily data from many real time market sources, including active broker-dealers. Certain data sources are regularly reviewed for accuracy to attempt to ensure the most reliable price source is used for each issue and maturity date.

Agencies

Level 2 - At December 31, 2019, the Company's agency fixed maturity investments had a weighted average yield to maturity of 2.1% and a weighted average credit quality of AA (2018 - 3.0% and AA, respectively). The issuers of the Company's agency fixed maturity investments primarily consist of the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and other agencies. Fixed maturity investments included in agencies are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources and integrate other observations from markets and sector news. Evaluations are updated by obtaining broker-dealer quotes and other market information including actual trade volumes, when available. The fair value of each security is individually computed using analytical models which incorporate option adjusted spreads and other daily interest rate data.

Municipal

Level 2 - At December 31, 2019, the Company did not hold any material positions in municipal fixed maturity investments. At December 31, 2018, the Company's municipal fixed maturity investments had a weighted average yield to maturity of 4.8% and a weighted average credit quality of A. The Company's municipal fixed maturity investments were primarily priced by pricing services. When evaluating these securities, the pricing services gathered information regarding the security from third-party sources such as trustees, paying agents or issuers. Evaluations were updated by obtaining broker-dealer quotes and other market information including actual trade volumes, when available. The pricing services also considered the specific terms and conditions of the securities, including any specific features which may have influenced risk. In certain instances, securities were individually evaluated using a spread over widely accepted market benchmarks.

Non-U.S. government

Level 2 - At December 31, 2019, the Company's non-U.S. government fixed maturity investments had a weighted average yield to maturity of 1.6% and a weighted average credit quality of AA (2018 - 2.7% and AAA, respectively). The issuers of securities in this sector are non-U.S. governments and their respective agencies as well as supranational organizations. Securities held in these sectors are primarily priced by

pricing services that employ proprietary discounted cash flow models to value the securities. Key quantitative inputs for these models are daily observed benchmark curves for treasury, swap and high issuance credits. The pricing services then apply a credit spread for each security which is developed by in-depth and real time market analysis. For securities in which trade volume is low, the pricing services utilize data from more frequently traded securities with similar attributes. These models may also be supplemented by daily market and credit research for international markets.

Non-U.S. government-backed corporate

Level 2 - At December 31, 2019, the Company's non-U.S. government-backed corporate fixed maturity investments had a weighted average yield to maturity of 2.0% and a weighted average credit quality of AA (2018 - 2.8% and AA, respectively). Non-U.S. government-backed corporate fixed maturity investments are primarily priced by pricing services that employ proprietary discounted cash flow models to value the securities. Key quantitative inputs for these models are daily observed benchmark curves for treasury, swap and high issuance credits. The pricing services then apply a credit spread to the respective curve for each security which is developed by in-depth and real time market analysis. For securities in which trade volume is low, the pricing services utilize data from more frequently traded securities with similar attributes. These models may also be supplemented by daily market and credit research for international markets.

Corporate

Level 2 - At December 31, 2019, the Company's corporate fixed maturity investments principally consisted of U.S. and international corporations and had a weighted average yield to maturity of 3.0% and a weighted average credit quality of BBB (2018 - 4.9% and BBB, respectively). The Company's corporate fixed maturity investments are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources regarding the issuer of the security and obtain credit data, as well as other observations, from markets and sector news. Evaluations are updated by obtaining broker-dealer quotes and other market information including actual trade volumes, when available. The pricing services also consider the specific terms and conditions of the securities, including any specific features which may influence risk. In certain instances, securities are individually evaluated using a spread which is added to the U.S. treasury curve or a security specific swap curve as appropriate.

Agency mortgage-backed

Level 2 - At December 31, 2019, the Company's agency mortgage-backed fixed maturity investments included agency residential mortgage-backed securities with a weighted average yield to maturity of 2.5%, a weighted average credit quality of AA and a weighted average life of 4.9 years (2018 - 3.5%, AA and 7.1 years, respectively). The Company's agency mortgage-backed fixed maturity investments are primarily priced by pricing services using a mortgage pool specific model which utilizes daily inputs from the active to-be-announced market which is very liquid, as well as the U.S. treasury market. The model also utilizes additional information, such as the weighted average maturity, weighted average coupon and other available pool level data which is provided by the sponsoring agency. Valuations are also corroborated with daily active market quotes.

Non-agency mortgage-backed

Level 2 - The Company's non-agency mortgage-backed fixed maturity investments include non-agency prime, non-agency Alt-A and other non-agency residential mortgage-backed securities. At December 31, 2019, the Company's non-agency prime residential mortgage-backed fixed maturity investments had a weighted average yield to maturity of 3.3%, a weighted average credit quality of BBB, and a weighted average life of 4.8 years (2018 - 4.4%, non-investment grade and 4.7 years, respectively). The Company's non-agency Alt-A fixed maturity investments held at December 31, 2019 had a weighted average yield to maturity of 3.8%, a weighted average credit quality of non-investment grade and a weighted average life of 6.3 years (2018 - 4.7%, non-investment grade and 6.3 years, respectively). Securities held in these sectors are primarily priced by pricing services using an option adjusted spread model or other relevant models, which principally utilize inputs including benchmark yields, available trade information or broker quotes, and issuer spreads. The pricing services also review collateral prepayment speeds, loss severity and delinquencies among other collateral performance indicators for the securities valuation, when applicable.

Commercial mortgage-backed

Level 2 - At December 31, 2019, the Company's commercial mortgage-backed fixed maturity investments had a weighted average yield to maturity of 2.6%, a weighted average credit quality of AAA, and a weighted average life of 5.7 years (2018 - 3.6%, AAA and 5.0 years, respectively). Securities held in these sectors are primarily priced by pricing services. The pricing services apply dealer quotes and other available trade information such as bids and offers, prepayment speeds which may be adjusted for the underlying collateral or current price data, the U.S. treasury curve and swap curve as well as cash settlement. The pricing services discount the expected cash flows for each security held in this sector using a spread adjusted benchmark yield based on the characteristics of the security.

Asset-backed

Level 2 - At December 31, 2019, the Company's asset-backed fixed maturity investments had a weighted average yield to maturity of 3.3%, a weighted average credit quality of AAA and a weighted average life of 3.2 years (2018 - 4.3%, AAA and 3.2 years, respectively). The underlying collateral for the Company's asset-backed fixed maturity investments primarily consists of bank loans, student loans, credit card receivables, auto loans and other receivables. Securities held in these sectors are primarily priced by pricing services. The pricing services apply dealer quotes and other available trade information such as bids and offers, prepayment speeds which may be adjusted for the underlying collateral or current price data, the U.S. treasury curve and swap curve as well as cash settlement. The pricing services determine the expected cash flows for each security held in this sector using historical prepayment and default projections for the underlying collateral and current market data. In addition, a spread is applied to the relevant benchmark and used to discount the cash flows noted above to determine the fair value of the securities held in this sector.

Short Term Investments

Level 2 - At December 31, 2019, the Company's short term investments had a weighted average yield to maturity of 1.6% and a weighted average credit quality of AAA (2018 - 2.1% and AAA, respectively). The fair value of the Company's portfolio of short term investments is generally determined using amortized cost which approximates fair value and, in certain cases, in a manner similar to the Company's fixed maturity investments noted above.

Equity Investments, Classified as Trading

Level 1 - The fair value of the Company's portfolio of equity investments, classified as trading is primarily priced by pricing services, reflecting the closing price quoted for the final trading day of the period. When pricing these securities, the pricing services utilize daily data from many real time market sources, including applicable securities exchanges. All data sources are regularly reviewed for accuracy to attempt to ensure the most reliable price source was used for each security.

Other investments

Catastrophe bonds

Level 2 - The Company's other investments include investments in catastrophe bonds which are recorded at fair value based on broker or underwriter bid indications.

Other assets and liabilities

Derivatives

Level 1 and Level 2 - Other assets and liabilities include certain derivatives entered into by the Company. The fair value of these transactions includes certain exchange traded futures contracts which are considered Level 1, and foreign currency contracts and certain credit derivatives, determined using standard industry valuation models and considered Level 2, as the inputs to the valuation model are based on observable market inputs. For credit derivatives, these inputs include credit spreads, credit ratings of the underlying referenced security, the risk free rate and the contract term. For foreign currency contracts, these inputs include spot rates and interest rate curves.

Level 3 Assets and Liabilities Measured at Fair Value

Below is a summary of quantitative information regarding the significant unobservable inputs (Level 3) used in determining the fair value of assets and liabilities measured at fair value on a recurring basis:

<u>At December 31, 2019</u>	<u>Fair Value (Level 3)</u>	<u>Valuation Technique</u>	<u>Unobservable Inputs</u>	<u>Low</u>	<u>High</u>	<u>Weighted Average or Actual</u>
Other investments						
Private equity investment	\$ 10,327	External valuation model	Manager pricing	\$ 103.20	\$ 103.77	\$ 103.20
Private equity investments	64,307	Internal valuation model	Discount rate	8.0%	10.0%	9.0%
			Liquidity discount	n/a	n/a	15.0%
Total other investments	74,634					
Other assets and (liabilities)						
Assumed and ceded (re)insurance contracts	501	Internal valuation model	Bond price	\$ 100.29	\$ 106.26	\$ 103.58
			Liquidity discount	n/a	n/a	1.3%
Assumed and ceded (re)insurance contracts	(8,767)	Internal valuation model	Net undiscounted cash flows	n/a	n/a	\$ (11,179)
			Expected loss ratio	n/a	n/a	33.1%
			Discount rate	n/a	n/a	1.7%
Assumed and ceded (re)insurance contracts	12,997	Internal valuation model	Expected loss ratio	n/a	n/a	0.0%
Total other assets and (liabilities)	4,731					
Total other assets and (liabilities) measured at fair value on a recurring basis using Level 3 inputs	<u>\$ 79,365</u>					

Below is a reconciliation of the beginning and ending balances, for the periods shown, of assets and liabilities measured at fair value on a recurring basis using Level 3 inputs. Interest and dividend income are included in net investment income and are excluded from the reconciliation.

	<u>Other investments</u>	<u>Other assets and (liabilities)</u>	<u>Total</u>
Balance - January 1, 2019	\$ 54,545	\$ (8,359)	\$ 46,186
Total realized and unrealized gains (losses)			
Included in other income	2,126	(2,347)	(221)
Total foreign exchange gains	5	—	5
Purchases	17,958	(4,553)	13,405
Settlements	—	20	20
Amounts acquired (1)	—	19,970	19,970
Balance - December 31, 2019	<u>\$ 74,634</u>	<u>\$ 4,731</u>	<u>\$ 79,365</u>

(1) Represents the fair value of the other assets acquired from TMR, measured at fair value on a recurring basis using Level 3 inputs at March 22, 2019. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR.

	Other investments	Other assets and (liabilities)	Total
Balance - January 1, 2018	\$ —	\$ (2,952)	\$ (2,952)
Total realized and unrealized gains			
Included in other income	—	2,901	2,901
Purchases	54,545	(9,291)	45,254
Settlements	—	983	983
Balance - December 31, 2018	\$ 54,545	\$ (8,359)	\$ 46,186

Other investments

Private equity investment

Level 3 - At December 31, 2019, the Company's other investments included a \$10.3 million private equity investment which is recorded at fair value, with the fair value obtained through the receipt of an indicative pricing obtained from the insurance manager of the security. The Company considers the price obtained to be unobservable, as there is little, if any, market activity for this security. This unobservable input in isolation can cause significant increases or decreases in fair value. Generally, an increase in the indicative pricing would result in an increase in the fair value of this private equity investment.

Level 3 - At December 31, 2019, the Company's other investments included \$64.3 million of private equity investments which are recorded at fair value, with the fair value obtained through the use of internal valuation models. The Company measured the fair value of these investments using multiples of net tangible book value of the underlying entity. The significant unobservable inputs used in the fair value measurement of these investments are liquidity discount rates applied to each of the net tangible book value multiples used in the internal valuation models, and discount rates applied to the expected cash flows of the underlying entity in various scenarios. These unobservable inputs in isolation can cause significant increases or decreases in fair value. Generally, an increase in the liquidity discount rate or discount rates would result in a decrease in the fair value of these private equity investments.

Other assets and liabilities

Assumed and ceded (re)insurance contracts

Level 3 - At December 31, 2019, the Company had a \$0.5 million net asset related to an assumed reinsurance contract accounted for at fair value, with the fair value obtained through the use of an internal valuation model. The inputs to the internal valuation model are principally based on indicative pricing obtained from independent brokers and pricing vendors for similarly structured marketable securities. The most significant unobservable inputs include prices for similar marketable securities and a liquidity premium. The Company considers the prices for similar securities to be unobservable, as there is little, if any market activity for these similar assets. In addition, the Company has estimated a liquidity premium that would be required if the Company attempted to effectively exit its position by executing a short sale of these securities. Generally, an increase in the prices for similar marketable securities or a decrease in the liquidity premium would result in an increase in the expected profit and ultimate fair value of this assumed reinsurance contract.

Level 3 - At December 31, 2019, the Company had a \$8.8 million net liability related to assumed and ceded (re)insurance contracts accounted for at fair value, with the fair value obtained through the use of an internal valuation model. The inputs to the internal valuation model are principally based on proprietary data as observable market inputs are generally not available. The most significant unobservable inputs include the assumed and ceded expected net cash flows related to the contracts, including the expected premium, acquisition expenses and losses; the expected loss ratio and the relevant discount rate used to present value the net cash flows. The contract period and acquisition expense ratio are considered an observable input as each is defined in the contract. Generally, an increase in the net expected cash flows and expected term of the contract and a decrease in the discount rate, expected loss ratio or acquisition expense ratio,

would result in an increase in the expected profit and ultimate fair value of these assumed and ceded (re)insurance contracts.

Level 3 - At December 31, 2019, the Company had a \$13.0 million net asset related to assumed and ceded (re)insurance contracts accounted for at fair value, with the fair value obtained through the use of internal valuation models. The inputs to the models are primarily based on the unexpired period of risk and an evaluation of the probability of loss. The fair value of the contracts are sensitive to loss-triggering events. In the event of a loss, the Company would adjust the fair value of the contract to account for a recovery or liability in accordance with the contract terms and the estimate of exposure under the contract. The inputs for the contracts are based on management's evaluation and are unobservable.

Financial Instruments Disclosed, But Not Carried, at Fair Value

The Company uses various financial instruments in the normal course of its business. The Company's insurance contracts are excluded from the fair value of financial instruments accounting guidance, unless the Company elects the fair value option, and therefore, are not included in the amounts discussed herein. The carrying values of cash and cash equivalents, accrued investment income, receivables for investments sold, certain other assets, payables for investments purchased, certain other liabilities, and other financial instruments not included herein approximated their fair values.

Debt

Included on the Company's consolidated balance sheet at December 31, 2019 were debt obligations of \$1.4 billion (2018 - \$991.1 million). At December 31, 2019, the fair value of the Company's debt obligations was \$1.5 billion (2018 – \$974.7 million).

The fair value of the Company's debt obligations is determined using indicative market pricing obtained from third-party service providers, which the Company considers Level 2 in the fair value hierarchy. There have been no changes during the period in the Company's valuation technique used to determine the fair value of the Company's debt obligations. Refer to "Note 9. Debt and Credit Facilities" for additional information related to the Company's debt obligations.

The Fair Value Option for Financial Assets and Financial Liabilities

The Company has elected to account for certain financial assets and financial liabilities at fair value using the guidance under FASB ASC Topic *Financial Instruments* as the Company believes it represents the most meaningful measurement basis for these assets and liabilities. Below is a summary of the balances the Company has elected to account for at fair value:

	2019	2018
Other investments	\$ 1,087,377	\$ 784,933
Other assets	\$ 32,944	\$ 4,968
Other liabilities	\$ 28,213	\$ 13,327

Included in net investment income for 2019 was net unrealized gains of \$12.2 million related to the changes in fair value of other investments (2018 – losses of \$8.3 million, 2017 – gains of \$24.7 million). Included in other income for 2019 were net unrealized gains of \$Nil related to the changes in the fair value of other assets and liabilities (2018 – \$Nil, 2017 – \$Nil).

Measuring the Fair Value of Other Investments Using Net Asset Valuations

The table below shows the Company's portfolio of other investments measured using net asset valuations as a practical expedient:

<u>At December 31, 2019</u>	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency</u>	<u>Redemption Notice Period (Minimum Days)</u>	<u>Redemption Notice Period (Maximum Days)</u>
Private equity investments	\$ 196,413	\$ 351,028	See below	See below	See below
Senior secured bank loan funds	22,598	8,702	See below	See below	See below
Hedge funds	12,091	—	See below	See below	See below
Total other investments measured using net asset valuations	<u>\$ 231,102</u>	<u>\$ 359,730</u>			

Private equity investments – A significant portion of the Company's investments in private equity investments include alternative asset limited partnerships (or similar corporate structures) that invest in certain private equity asset classes including U.S. and global leveraged buyouts, mezzanine investments, distressed securities, real estate, and oil, gas and power. The Company generally has no right to redeem its interest in any of these private equity investments in advance of dissolution of the applicable private equity investment. Instead, the nature of these investments is that distributions are received by the Company in connection with the liquidation of the underlying assets of the respective private equity investment. It is estimated that the majority of the underlying assets of the limited partnerships would liquidate over 7 to 10 years from inception of the respective limited partnership.

Senior secured bank loan funds – At December 31, 2019 the Company had \$22.6 million invested in closed end funds which invest primarily in loans. The Company has no right to redeem its investment in these funds. It is estimated that the majority of the underlying assets in these closed end funds would begin to liquidate over 4 to 5 years from inception of the applicable fund.

Hedge funds – At December 31, 2019, the Company had \$12.1 million of investments in hedge funds that are primarily focused on global credit opportunities which are generally redeemable at the option of the shareholder.

NOTE 7. REINSURANCE

The Company purchases reinsurance and other protection to manage its risk portfolio and to reduce its exposure to large losses. The Company currently has in place contracts that provide for recovery of a portion of certain claims and claim expenses, generally in excess of various retentions or on a proportional basis. In addition to loss recoveries, certain of the Company's ceded reinsurance contracts provide for payments of additional premiums, for reinstatement premiums and for lost no-claims bonuses, which are incurred when losses are ceded to the respective reinsurance contracts. The Company remains liable to the extent that any reinsurer fails to meet its obligations.

The following table sets forth the effect of reinsurance and retrocessional activity on premiums written and earned and on net claims and claim expenses incurred:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
<u>Premiums written</u>			
Direct	\$ 461,409	\$ 337,587	\$ 290,730
Assumed	4,346,341	2,972,840	2,506,810
Ceded	(1,426,257)	(1,178,525)	(926,215)
Net premiums written	<u>\$ 3,381,493</u>	<u>\$ 2,131,902</u>	<u>\$ 1,871,325</u>
<u>Premiums earned</u>			
Direct	\$ 404,525	\$ 292,219	\$ 244,285
Assumed	4,348,261	2,779,796	2,307,219
Ceded	(1,414,383)	(1,095,886)	(833,929)
Net premiums earned	<u>\$ 3,338,403</u>	<u>\$ 1,976,129</u>	<u>\$ 1,717,575</u>
<u>Claims and claim expenses</u>			
Gross claims and claim expenses incurred	\$ 3,221,778	\$ 2,578,536	\$ 3,420,388
Claims and claim expenses recovered	(1,124,757)	(1,458,518)	(1,558,960)
Net claims and claim expenses incurred	<u>\$ 2,097,021</u>	<u>\$ 1,120,018</u>	<u>\$ 1,861,428</u>

At December 31, 2019, the Company's reinsurance recoverable balance was \$2.8 billion (2018 - \$2.4 billion). Of the Company's reinsurance recoverable balance at December 31, 2019, 57.5% is fully collateralized by our reinsurers, 41.0% is recoverable from reinsurers rated A- or higher by major rating agencies and 1.5% is recoverable from reinsurers rated lower than A- by major rating agencies (2018 - 60.8%, 38.0% and 1.2%, respectively). The reinsurers with the three largest balances accounted for 12.7%, 7.2% and 7.0%, respectively, of the Company's reinsurance recoverable balance at December 31, 2019 (2018 - 15.5%, 6.7% and 6.5%, respectively). The valuation allowance recorded against reinsurance recoverable was \$7.3 million at December 31, 2019 (2018 - \$9.0 million). The three largest company-specific components of the valuation allowance represented 18.1%, 7.9% and 7.2%, respectively, of the Company's total valuation allowance at December 31, 2019 (2018 - 16.2%, 14.8% and 12.3%, respectively).

NOTE 8. RESERVE FOR CLAIMS AND CLAIM EXPENSES

The Company believes the most significant accounting judgment made by management is its estimate of claims and claim expense reserves. Claims and claim expense reserves represent estimates, including actuarial and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts the Company sells. The Company establishes its claims and claim expense reserves by taking claims reported to the Company by insureds and ceding companies, but which have not yet been paid ("case reserves"), adding estimates for the anticipated cost of claims incurred but not yet reported to the Company, or incurred but not enough reported to the Company (collectively referred to as "IBNR") and, if deemed necessary, adding costs for additional case reserves which represent the Company's estimates for claims related to specific contracts previously reported to the Company which it believes may not be adequately estimated by the client as of that date, or adequately covered in the application of IBNR. The Company's reserving committee, which includes members of the Company's senior management, reviews, discusses, and assesses the reasonableness and adequacy of the reserving estimates included in our audited financial statements.

The following table summarizes the Company's claims and claim expense reserves by segment, allocated between case reserves, additional case reserves and IBNR:

<u>At December 31, 2019</u>	<u>Case Reserves</u>	<u>Additional Case Reserves</u>	<u>IBNR</u>	<u>Total</u>
Property	\$ 1,253,406	\$ 1,631,223	\$ 1,189,221	\$ 4,073,850
Casualty and Specialty	1,596,426	129,720	3,583,913	5,310,059
Other	440	—	—	440
Total	<u>\$ 2,850,272</u>	<u>\$ 1,760,943</u>	<u>\$ 4,773,134</u>	<u>\$ 9,384,349</u>
<u>At December 31, 2018</u>				
Property	\$ 690,718	\$ 1,308,307	\$ 1,087,229	\$ 3,086,254
Casualty and Specialty	771,537	116,877	2,096,979	2,985,393
Other	1,458	—	3,166	4,624
Total	<u>\$ 1,463,713</u>	<u>\$ 1,425,184</u>	<u>\$ 3,187,374</u>	<u>\$ 6,076,271</u>

Activity in the liability for unpaid claims and claim expenses is summarized as follows:

Year ended December 31,	2019	2018	2017
Net reserves as of beginning of period	\$ 3,704,050	\$ 3,493,778	\$ 2,568,730
Net incurred related to:			
Current year	2,123,876	1,390,767	1,902,424
Prior years	(26,855)	(270,749)	(40,996)
Total net incurred	2,097,021	1,120,018	1,861,428
Net paid related to:			
Current year	265,649	391,061	450,527
Prior years	832,405	503,708	524,298
Total net paid	1,098,054	894,769	974,825
Amounts acquired (1)	1,858,775	—	—
Foreign exchange (2)	31,260	(14,977)	38,445
Net reserves as of end of period	6,593,052	3,704,050	3,493,778
Reinsurance recoverable as of end of period	2,791,297	2,372,221	1,586,630
Gross reserves as of end of period	\$ 9,384,349	\$ 6,076,271	\$ 5,080,408

(1) Represents the fair value of TMR's reserves for claims and claim expenses, net of reinsurance recoverables, acquired at March 22, 2019. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR.

(2) Reflects the impact of the foreign exchange revaluation of net reserves denominated in non-U.S. dollars as at the balance sheet date.

The Company's reserving methodology for each line of business uses a loss reserving process that calculates a point estimate for its ultimate settlement and administration costs for claims and claim expenses. The Company does not calculate a range of estimates and does not discount any of its reserves for claims and claim expenses. The Company uses this point estimate, along with paid claims and case reserves, to record its best estimate of additional case reserves and IBNR in its consolidated financial statements. Under GAAP, the Company is not permitted to establish estimates for catastrophe claims and claim expense reserves until an event occurs that gives rise to a loss.

Reserving for reinsurance claims involves other uncertainties, such as the dependence on information from ceding companies, the time lag inherent in reporting information from the primary insurer to the Company or to the Company's ceding companies, and differing reserving practices among ceding companies. The information received from ceding companies is typically in the form of bordereaux, broker notifications of loss and/or discussions with ceding companies or their brokers. This information may be received on a monthly, quarterly or transactional basis and normally includes paid claims and estimates of case reserves. The Company sometimes also receives an estimate or provision for IBNR. This information is often updated and adjusted from time to time during the loss settlement period as new data or facts in respect of initial claims, client accounts, industry or event trends may be reported or emerge in addition to changes in applicable statutory and case laws.

The Company's estimates of losses from large events are based on factors including currently available information derived from claims information from certain customers and brokers, industry assessments of losses from the events, proprietary models, and the terms and conditions of the Company's contracts. The uncertainty of the Company's estimates for large events is also impacted by the preliminary nature of the information available, the magnitude and relative infrequency of the events, the expected duration of the respective claims development period, inadequacies in the data provided to the relevant date by industry participants and the potential for further reporting lags or insufficiencies; and in certain large events, significant uncertainty as to the form of the claims and legal issues, under the relevant terms of insurance and reinsurance contracts. In addition, a significant portion of the net claims and claim expenses associated with certain large events can be concentrated with a few large clients and therefore the loss estimates for these events may vary significantly based on the claims experience of those clients. The contingent nature of business interruption and other exposures will also impact losses in a meaningful way, which may give rise to significant complexity in respect of claims handling, claims adjustment and other coverage issues,

over time. Given the magnitude of certain events, there can be meaningful uncertainty regarding total covered losses for the insurance industry and, accordingly, several of the key assumptions underlying the Company's loss estimates. Loss reserve estimation in respect of the Company's retrocessional contracts poses further challenges compared to directly assumed reinsurance. In addition, the Company's actual net losses from these events may increase if the Company's reinsurers or other obligors fail to meet their obligations.

Because of the inherent uncertainties discussed above, the Company has developed a reserving philosophy that attempts to incorporate prudent assumptions and estimates, and the Company has generally experienced favorable net development on prior accident years net claims and claim expenses in the last several years. However, there is no assurance that this favorable development on prior accident years net claims and claim expenses will occur in future periods.

The Company establishes a provision for unallocated loss adjustment expenses ("ULAE") when the related reserve for claims and claim expenses is established. ULAE are expenses that cannot be associated with a specific claim but are related to claims paid or in the process of settlement, such as internal costs of the claims function, and are included in the reserve for claims and claim expenses. The determination of the ULAE provision is subject to judgment.

The Company reevaluates its actuarial reserving techniques on a periodic basis. Typically, the quarterly review procedures include reviewing paid and reported claims in the most recent reporting period, reviewing the development of paid and reported claims from prior periods, and reviewing the Company's overall experience by underwriting year and in the aggregate. The Company monitors its expected ultimate claims and claim expense ratios and expected claims reporting assumptions on a quarterly basis and compares them to its actual experience. These actuarial assumptions are generally reviewed annually, based on input from the Company's actuaries, underwriters, claims personnel and finance professionals, although adjustments may be made more frequently if needed. Assumption changes are made to adjust for changes in the pricing and terms of coverage the Company provides, changes in industry results for similar business, as well as its actual experience to the extent the Company has enough data to rely on its own experience. If the Company determines that adjustments to an earlier estimate are appropriate, such adjustments are recorded in the period in which they are identified.

Incurred and Paid Claims Development and Reserving Methodology

The information provided herein about incurred and paid accident year claims development for the years ended prior to December 31, 2019 on a consolidated basis and by segment is presented as supplementary information. The Company has applied a retrospective approach with respect to its acquisitions, presenting all relevant historical information for all periods presented. In addition, included in the incurred claims and claim expenses and cumulated paid claims and claim expenses tables below is a reconciling item that represents the unamortized balance of fair value adjustments recorded in connection with the acquisitions of Platinum and TMR, respectively, to reflect an increase in net claims and claim expenses due to the addition of a market based risk margin that represented the cost of capital required by a market participant to assume the net claims and claim expenses of Platinum and TMR, partially offset by a decrease from discounting in connection with the acquisitions of Platinum and TMR, to reflect the time value of money.

For incurred and paid accident year claims denominated in foreign currency, the Company used the current year-end balance sheet foreign exchange rate for all periods provided, thereby eliminating the effects of changes in foreign currency translation rates from the incurred and paid accident year claims development information included in the tables below.

The following table details the Company's consolidated incurred claims and claim expenses and cumulative paid claims and claim expenses as of December 31, 2019, net of reinsurance, as well as IBNR plus ACR included within the net incurred claims amounts.

Accident Year	Incurred claims and claim expenses, net of reinsurance										At December 31, 2019
	For the year ended December 31,										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	IBNR and ACR
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 1,131,892	\$ 1,105,041	\$ 1,048,747	\$ 1,033,341	\$ 1,045,727	\$ 1,037,725	\$ 1,045,490	\$ 1,043,565	\$ 1,015,540	\$ 1,052,931	\$ 60,342
2011	—	1,989,024	1,926,506	1,827,258	1,768,793	1,738,452	1,698,378	1,683,614	1,678,015	1,664,869	55,191
2012	—	—	1,138,018	1,021,668	958,139	927,438	891,981	894,168	901,049	907,212	48,297
2013	—	—	—	912,545	861,093	810,934	761,033	737,158	718,563	699,767	43,792
2014	—	—	—	—	1,024,813	997,906	990,050	966,802	948,264	953,904	114,985
2015	—	—	—	—	—	1,171,023	1,156,856	1,175,927	1,145,983	1,133,632	131,005
2016	—	—	—	—	—	—	1,401,451	1,458,767	1,432,001	1,426,575	251,952
2017	—	—	—	—	—	—	—	2,940,713	2,724,795	2,632,396	731,975
2018	—	—	—	—	—	—	—	—	2,198,980	2,338,291	940,346
2019	—	—	—	—	—	—	—	—	—	2,280,044	1,764,899
Total										\$ 15,089,621	\$ 4,142,784
Cumulative paid claims and claim expenses, net of reinsurance											
For the year ended December 31,											
Accident Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 146,890	\$ 334,347	\$ 518,162	\$ 603,060	\$ 670,935	\$ 746,454	\$ 859,745	\$ 892,480	\$ 912,776	\$ 928,552	
2011	—	311,906	728,464	1,143,829	1,330,492	1,449,060	1,493,174	1,530,030	1,550,195	1,565,359	
2012	—	—	267,764	416,808	522,264	596,634	647,618	721,942	752,614	783,106	
2013	—	—	—	131,829	340,652	434,508	496,380	554,686	587,978	615,463	
2014	—	—	—	—	230,826	432,761	554,398	630,417	691,774	741,844	
2015	—	—	—	—	—	262,085	495,119	662,001	781,622	879,950	
2016	—	—	—	—	—	—	286,317	623,440	826,502	971,424	
2017	—	—	—	—	—	—	—	745,098	1,067,481	1,371,477	
2018	—	—	—	—	—	—	—	—	587,619	804,566	
2019	—	—	—	—	—	—	—	—	—	284,842	
Total										\$ 8,946,583	
Outstanding liabilities from accident year 2009 and prior, net of reinsurance										270,317	
Claims and claim expenses, net of reinsurance, from the Company's former Bermuda-based insurance operations										229	
Adjustment for unallocated claim expenses										51,876	
Unamortized fair value adjustments recorded in connection with acquisitions										(69,219)	
Liability for claims and claim expense, net of reinsurance, associated with RenaissanceRe UK										196,811	
Liability for claims and claim expenses, net of reinsurance										\$ 6,593,052	

Property Segment

Within the Property segment, the Company principally writes property catastrophe excess of loss reinsurance contracts to insure insurance and reinsurance companies against natural and man-made catastrophes. Under these contracts, the Company indemnifies an insurer or reinsurer when its aggregate paid claims and claim expenses from a single occurrence of a covered peril exceeds the attachment point specified in the contract, up to an amount per loss specified in the contract. The Company's most significant exposure is to losses from hurricanes, earthquakes and other windstorms, although the Company is also exposed to claims arising from other catastrophes, such as tsunamis, winter storms, freezes, floods, fires, tornadoes, explosions and acts of terrorism. The Company's predominant exposure under such coverage is to property damage. However, other risks, including business interruption and other non-property losses,

may also be covered under the Company's catastrophe contracts when arising from a covered peril. The Company's coverages are offered on either a worldwide basis or are limited to selected geographic areas.

Coverage can also vary from "all property" perils to limited coverage on selected perils, such as "earthquake only" coverage. The Company also enters into retrocessional contracts that provide property catastrophe coverage to other reinsurers or retrocedants. This coverage is generally in the form of excess of loss retrocessional contracts and may cover all perils and exposures on a worldwide basis or be limited in scope to selected geographic areas, perils and/or exposures. The exposures the Company assumes from retrocessional business can change within a contract term as the underwriters of a retrocedant may alter their book of business after the retrocessional coverage has been bound. The Company also offers dual trigger reinsurance contracts which require the Company to pay claims based on claims incurred by insurers and reinsurers in addition to the estimate of insured industry losses as reported by referenced statistical reporting agencies.

Also included in the Property segment is property per risk, property (re)insurance, binding facilities and regional U.S. multi-line reinsurance. The Company's predominant exposure under such coverage is to property damage. However, other risks, including business interruption and other non-property losses, may also be covered when arising from a covered peril. The Company's coverages are offered on either a worldwide basis or are limited to selected geographic areas. The exposures assumed from retrocessional business can change within a contract term as the underwriters of a retrocedant may alter their book of business after the retrocessional coverage has been bound. The Company offers these products principally through proportional coverage. In a proportional reinsurance arrangement (also referred to as quota share reinsurance or pro rata reinsurance), the reinsurer shares a proportional part of the original premiums and losses of the reinsured.

Claims and claim expenses in the Company's Property segment are generally characterized by loss events of low frequency and high severity. Initial reporting of paid and incurred claims in general, tends to be relatively prompt. The Company considers this business "short-tail" as compared to the reporting of claims for "long-tail" products, which tends to be slower. However, the timing of claims payment and reporting also varies depending on various factors, including: whether the claims arise under reinsurance of primary insurance companies or reinsurance of other reinsurance companies; the nature of the events (e.g., hurricanes, earthquakes or terrorism); the geographic area involved; post-event inflation which may cause the cost to repair damaged property to increase significantly from current estimates, or for property claims to remain open for a longer period of time, due to limitations on the supply of building materials, labor and other resources; complex policy coverage and other legal issues; and the quality of each client's claims management and reserving practices. Management's judgments regarding these factors are reflected in the Company's reserve for claims and claim expenses.

Reserving for most of the Company's Property segment generally does not involve the use of traditional actuarial techniques. Rather, claims and claim expense reserves are estimated by management after a catastrophe occurs by completing an in-depth analysis of the individual contracts which may potentially be impacted by the catastrophic event. The in-depth analysis generally involves: 1) estimating the size of insured industry losses from the catastrophic event; 2) reviewing reinsurance contract portfolios to identify contracts which are exposed to the catastrophic event; 3) reviewing information reported by customers and brokers; 4) discussing the event with customers and brokers; and 5) estimating the ultimate expected cost to settle all claims and administrative costs arising from the catastrophic event on a contract-by-contract basis and in aggregate for the event. Once an event has occurred, during the then current reporting period, the Company records its best estimate of the ultimate expected cost to settle all claims arising from the event. The Company's estimate of claims and claim expense reserves is then determined by deducting cumulative paid losses from its estimate of the ultimate expected loss for an event. The Company's estimate of IBNR is determined by deducting cumulative paid losses, case reserves and additional case reserves from its estimate of the ultimate expected loss for an event. Once the Company receives a valid notice of loss or payment request under a catastrophe reinsurance contract, it is generally able to process and pay such claims promptly.

Because the events from which claims arise under policies written within the Property segment are typically prominent, public occurrences such as hurricanes and earthquakes, the Company is often able to use independent reports as part of its loss reserve estimation process. The Company also reviews catastrophe

bulletins published by various statistical reporting agencies to assist in determining the size of the industry loss, although these reports may not be available for some time after an event.

For smaller events including localized severe weather events such as windstorms, hail, ice, snow, flooding, freezing and tornadoes, which are not necessarily prominent, public occurrences, the Company initially places greater reliance on catastrophe bulletins published by statistical reporting agencies to assist in determining what events occurred during the reporting period than the Company does for large events. This includes reviewing catastrophe bulletins published by Property Claim Services ("PCS") for U.S. catastrophes. The Company sets its initial estimates of reserves for claims and claim expenses for these smaller events based on a combination of its historical market share for these types of losses and the estimate of the total insured industry property losses as reported by statistical reporting agencies, although management may make significant adjustments based on the Company's current exposure to the geographic region involved as well as the size of the loss and the peril involved. This approach supplements the Company's approach for estimating losses for larger catastrophes, which as discussed above, includes discussions with brokers and ceding companies and reviewing individual contracts impacted by the event. Approximately one year from the date of loss for these small events, the Company typically estimates IBNR for these events by using the paid Bornhuetter-Ferguson actuarial method. The loss development factors for the paid Bornhuetter-Ferguson actuarial method are selected based on a review of the Company's historical experience. There were no significant changes to the Company's paid loss development factors over the last three years.

In general, reserves for the Company's more recent reinsured catastrophic events are subject to greater uncertainty and, therefore, greater potential variability, and are likely to experience material changes from one period to the next. This is due to the uncertainty as to the size of the industry losses from the event, uncertainty as to which contracts have been exposed to the catastrophic event, uncertainty due to complex legal and coverage issues that can arise out of large or complex catastrophic events, and uncertainty as to the magnitude of claims incurred by the Company's customers. As the Company's claims age, more information becomes available and the Company believes its estimates become more certain.

The following table details the Company's Property segment incurred claims and claim expenses and cumulative paid claims and claim expenses as of December 31, 2019, net of reinsurance, as well as IBNR plus ACR included within the net incurred claims amounts.

Accident Year	Incurred claims and claim expenses, net of reinsurance										At December 31, 2019
	For the year ended December 31,										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	IBNR and ACR
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 720,159	\$ 681,287	\$ 636,962	\$ 657,719	\$ 691,473	\$ 696,844	\$ 706,258	\$ 708,343	\$ 681,435	\$ 731,179	\$ 50,422
2011	—	1,559,069	1,491,770	1,422,659	1,393,110	1,369,567	1,338,187	1,333,982	1,321,137	1,302,141	24,335
2012	—	—	559,946	429,425	395,203	375,098	356,310	344,535	336,719	331,865	12,351
2013	—	—	—	317,258	287,694	265,570	240,945	228,622	224,748	222,939	1,092
2014	—	—	—	—	306,731	283,608	270,618	265,820	264,754	265,229	4,554
2015	—	—	—	—	—	368,766	334,572	317,865	307,088	301,733	11,672
2016	—	—	—	—	—	—	445,532	458,525	443,135	432,269	53,990
2017	—	—	—	—	—	—	—	1,640,129	1,446,566	1,348,260	295,210
2018	—	—	—	—	—	—	—	—	945,829	1,054,884	273,477
2019	—	—	—	—	—	—	—	—	—	1,000,190	719,847
Total										\$ 6,990,689	\$ 1,446,950
Cumulative paid claims and claim expenses, net of reinsurance											
Accident Year	For the year ended December 31,										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 104,859	\$ 230,552	\$ 345,574	\$ 401,977	\$ 450,624	\$ 481,489	\$ 581,160	\$ 595,131	\$ 612,013	\$ 623,231	
2011	—	262,987	590,346	965,668	1,121,374	1,207,136	1,230,503	1,252,204	1,257,516	1,264,414	
2012	—	—	165,850	205,567	253,699	280,195	291,027	305,627	308,822	313,976	
2013	—	—	—	80,083	155,459	191,181	206,376	213,351	216,176	219,231	
2014	—	—	—	—	106,618	184,140	222,509	234,144	241,139	247,663	
2015	—	—	—	—	—	126,831	215,134	249,182	268,545	279,165	
2016	—	—	—	—	—	—	119,908	258,355	324,296	350,646	
2017	—	—	—	—	—	—	—	534,097	660,491	824,443	
2018	—	—	—	—	—	—	—	—	432,201	450,125	
2019	—	—	—	—	—	—	—	—	—	159,585	
Total										\$ 4,732,479	
Outstanding liabilities from accident year 2009 and prior, net of reinsurance										4,283	
Adjustment for unallocated claim expenses										19,339	
Unamortized fair value adjustments recorded in connection with acquisitions										(10,606)	
Liability for claims and claim expense, net of reinsurance, associated with RenaissanceRe UK										17,536	
Liability for claims and claim expenses, net of reinsurance										\$ 2,288,762	

Casualty and Specialty Segment

The Company offers its casualty and specialty reinsurance products principally on a proportional basis, and it also provides excess of loss coverage. The Company offers casualty and specialty reinsurance products to insurance and reinsurance companies and provides coverage for specific geographic regions or on a worldwide basis. Principally all of the business is reinsurance, although the Company also writes insurance business.

As with the Company's Property segment, its Casualty and Specialty segment reinsurance contracts can include coverage for relatively large limits or exposures. As a result, the Company's casualty and specialty reinsurance business can be subject to significant claims volatility. In periods of low claims frequency or

severity, the Company's results will generally be favorably impacted while in periods of high claims frequency or severity the Company's results will generally be negatively impacted.

The Company has accepted a wide range of proportional risks, facilitating the Company's efforts to expand its product offerings. While the Company remains focused on underwriting discipline, and seeks to remain focused on opportunities amenable to stochastic representation and supported by strong data and analytics, the Company's expanded casualty and specialty product suite, may pose new, unmodelled or unforeseen risks for which the Company may not be adequately compensated and may also result in a higher level of attritional claims and claim expenses and the potential for reserve development, either adverse or favorable.

The Company's processes and methodologies in respect of loss estimation for the coverages offered through its Casualty and Specialty segment differ from those used for its Property segment. For example, the Company's casualty and specialty coverages are more likely to be impacted by factors such as long-term inflation and changes in the social and legal environment, which the Company believes gives rise to greater uncertainty in its reserves for claims and claim expenses. Moreover, in many lines of business the Company does not have the benefit of a significant amount of its own historical experience and may have little or no related corporate reserving history in many of its newer or growing lines of business. The Company believes this makes its Casualty and Specialty segment reserving subject to greater uncertainty than its Property segment.

The Company calculates multiple point estimates for claims and claim expense reserves using a variety of actuarial reserving techniques for many, but not all, of its classes of business for each underwriting year within the Casualty and Specialty segment. The Company does not believe that these multiple point estimates are, or should be considered, a range. Rather, the Company considers each class of business and determines the most appropriate point estimate for each underwriting year based on the characteristics of the particular class including: (1) loss development patterns derived from historical data; (2) the credibility of the selected loss development pattern; (3) the stability of the loss development patterns; (4) how developed the underwriting year is; and (5) the observed loss development of other underwriting years for the same class. The Company also considers other relevant factors, including: (1) historical ultimate loss ratios; (2) the presence of individual large losses; and (3) known occurrences that have not yet resulted in reported losses. The Company makes determinations of the most appropriate point estimate of loss for each class based on an evaluation of relevant information and do not ascribe any particular portion of the estimate to a particular factor or consideration. In addition, the Company believes that a review of individual contract information improves the loss estimates for some classes of business.

When developing claims and claims expense reserves for the Company's Casualty and Specialty segment, it considers several actuarial techniques such as the expected loss ratio method, the Bornhuetter-Ferguson actuarial method and the paid and reported chain ladder actuarial method.

For classes of business and underwriting years where the Company has limited historical claims experience, estimates of ultimate losses that are not related to a specific event are generally initially determined based on the loss ratio method applied to each underwriting year and to each class of business. Unless the Company has credible claims experience or unfavorable development, it generally selects an ultimate loss based on its initial view of the loss. The selected ultimate losses are determined by multiplying the initial expected loss ratio by the earned premium. The initial expected loss ratios are key inputs that involve management judgment and are based on a variety of factors, including: (1) contract by contract expected loss ratios developed during the Company's pricing process; (2) historical loss ratios and combined ratios adjusted for rate change and trend; and (3) industry benchmarks for similar business. These judgments take into account management's view of past, current and future factors that may influence ultimate losses, including: (1) market conditions; (2) changes in the business underwritten; (3) changes in timing of the emergence of claims; and (4) other factors that may influence ultimate loss ratios and losses.

The determination of when reported losses are sufficient and credible to warrant selection of an ultimate loss ratio different from the initial expected loss ratios also requires judgment. The Company generally makes adjustments for reported loss experience indicating unfavorable variances from initial expected loss ratios sooner than reported loss experience indicating favorable variances. This is because the reporting of losses in excess of expectations tends to have greater credibility than an absence or lower than expected level of reported losses. Over time, as a greater number of claims are reported and the credibility of

reported losses improves, actuarial estimates of IBNR are typically based on the Bornhuetter-Ferguson actuarial method or the reported chain ladder actuarial method.

The Bornhuetter-Ferguson method allows for greater weight to be applied to expected results in periods where little or no actual experience is available, and, hence, is less susceptible to the potential pitfall of being excessively swayed by one year or one quarter of actual paid and/or reported loss data, compared to the chain ladder actuarial method. The Bornhuetter-Ferguson method uses the initial expected loss ratio to estimate IBNR, and it assumes that past experience is not fully representative of the future. As the Company's reserves for claims and claim expenses age, and actual claims experience becomes available, this method places less weight on expected experience and places more weight on actual experience. This experience, which represents the difference between expected reported claims and actual reported claims, is reflected in the respective reporting period as a change in estimate. The utilization of the Bornhuetter-Ferguson method requires the Company to estimate an expected ultimate claims and claim expense ratio and select an expected loss reporting pattern. The Company selects its estimates of the expected ultimate claims and claim expense ratios as described above and selects its expected loss reporting patterns by utilizing actuarial analysis, including management's judgment, and historical patterns of paid losses and reporting of case reserves to the Company, as well as industry loss development patterns. The estimated expected claims and claim expense ratio may be modified to the extent that reported losses at a given point in time differ from what would be expected based on the selected loss reporting pattern.

The reported chain ladder actuarial method utilizes actual reported losses and a loss development pattern to determine an estimate of ultimate losses that is independent of the initial expected ultimate loss ratio and earned premium. The Company believes this technique is most appropriate when there are a large number of reported losses with significant statistical credibility and a relatively stable loss development pattern. Information that may cause future loss development patterns to differ from historical loss development patterns is considered and reflected in the Company's selected loss development patterns as appropriate. For certain reinsurance contracts, historical loss development patterns may be developed from ceding company data or other sources.

In addition, certain specialty coverages may be impacted by natural and man-made catastrophes. The Company estimates reserves for claim and claim expenses for these losses after the event giving rise to these losses occurs, following a process that is similar to its Property segment described above.

The following table details the Company's Casualty and Specialty segment incurred claims and claim expenses and cumulative paid claims and claim expenses as of December 31, 2019, net of reinsurance, as well as IBNR plus ACR included within the net incurred claims amounts.

Accident Year	Incurred claims and claim expenses, net of reinsurance										At December 31, 2019 IBNR and ACR
	For the year ended December 31,										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 411,733	\$ 423,754	\$ 411,785	\$ 375,622	\$ 354,254	\$ 340,881	\$ 339,232	\$ 335,222	\$ 334,105	\$ 321,752	\$ 9,920
2011	—	429,955	434,736	404,599	375,683	368,885	360,191	349,632	356,878	362,728	30,856
2012	—	—	578,072	592,243	562,936	552,340	535,671	549,633	564,330	575,347	35,946
2013	—	—	—	595,287	573,399	545,364	520,088	508,536	493,815	476,828	42,700
2014	—	—	—	—	718,082	714,298	719,432	700,982	683,510	688,675	110,431
2015	—	—	—	—	—	802,257	822,284	858,062	838,895	831,899	119,333
2016	—	—	—	—	—	—	955,919	1,000,242	988,866	994,306	197,962
2017	—	—	—	—	—	—	—	1,300,584	1,278,229	1,284,136	436,765
2018	—	—	—	—	—	—	—	—	1,253,151	1,283,407	666,869
2019	—	—	—	—	—	—	—	—	—	1,279,854	1,045,052
Total										\$ 8,098,932	\$ 2,695,834
Cumulative paid claims and claim expenses, net of reinsurance											
	For the year ended December 31,										
Accident Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	
2010	\$ 42,031	\$ 103,795	\$ 172,588	\$ 201,083	\$ 220,311	\$ 264,965	\$ 278,585	\$ 297,349	\$ 300,763	\$ 305,321	
2011	—	48,919	138,118	178,161	209,118	241,924	262,671	277,826	292,679	300,945	
2012	—	—	101,914	211,241	268,565	316,439	356,591	416,315	443,792	469,130	
2013	—	—	—	51,746	185,193	243,327	290,004	341,335	371,802	396,232	
2014	—	—	—	—	124,208	248,621	331,889	396,273	450,635	494,181	
2015	—	—	—	—	—	135,254	279,985	412,819	513,077	600,785	
2016	—	—	—	—	—	—	166,409	365,085	502,206	620,778	
2017	—	—	—	—	—	—	—	211,001	406,990	547,034	
2018	—	—	—	—	—	—	—	—	155,418	354,441	
2019	—	—	—	—	—	—	—	—	—	125,257	
Total										\$ 4,214,104	
Outstanding liabilities from accident year 2009 and prior, net of reinsurance										266,034	
Adjustment for unallocated claim expenses										32,537	
Unamortized fair value adjustments recorded in connection with acquisitions										(58,613)	
Liability for claims and claim expense, net of reinsurance, associated with RenaissanceRe UK										179,275	
Liability for claims and claim expenses, net of reinsurance										\$ 4,304,061	

Prior Year Development of the Reserve for Net Claims and Claim Expenses

The Company's estimates of claims and claim expense reserves are not precise in that, among other things, they are based on predictions of future developments and estimates of future trends and other variable factors. Some, but not all, of the Company's reserves are further subject to the uncertainty inherent in actuarial methodologies and estimates. Because a reserve estimate is simply an insurer's estimate at a point in time of its ultimate liability, and because there are numerous factors that affect reserves and claims payments that cannot be determined with certainty in advance, the Company's ultimate payments will vary, perhaps materially, from its estimates of reserves. If the Company determines in a subsequent period that adjustments to its previously established reserves are appropriate, such adjustments are recorded in the

period in which they are identified. On a net basis, the Company's cumulative favorable or unfavorable development is generally reduced by offsetting changes in its reinsurance recoverables, as well as changes to loss related premiums such as reinstatement premiums and redeemable noncontrolling interest for changes in claims and claim expenses that impact DaVinciRe, all of which generally move in the opposite direction to changes in the Company's ultimate claims and claim expenses.

The following table details the Company's prior year development by segment of its liability for unpaid claims and claim expenses:

<u>Year ended December 31,</u>	2019	2018	2017
	(Favorable) adverse development	(Favorable) adverse development	(Favorable) adverse development
Property	\$ (2,933)	\$ (221,290)	\$ (45,596)
Casualty and Specialty	(23,882)	(49,262)	6,183
Other	(40)	(197)	(1,583)
Total net favorable development of prior accident years net claims and claim expenses	<u>\$ (26,855)</u>	<u>\$ (270,749)</u>	<u>\$ (40,996)</u>

Changes to prior year estimated claims reserves increased net income by \$26.9 million during 2019 (2018 - increased net income by \$270.7 million, 2017 - decreased net loss by \$41.0 million), excluding the consideration of changes in reinstatement, adjustment or other premium changes, profit commissions, redeemable noncontrolling interest - DaVinciRe and income tax.

Property Segment

The following tables detail the development of the Company's liability for unpaid claims and claim expenses for its Property segment, allocated between large and small catastrophe net claims and claim expenses and attritional net claims and claim expenses, included in the other line item:

<u>Year ended December 31,</u>	2019
	(Favorable) adverse development
Catastrophe net claims and claim expenses	
<i>Large catastrophe events</i>	
2017 Large Loss Events	\$ (101,572)
New Zealand Earthquake (2011)	(7,497)
Tohoku Earthquake and Tsunami (2011)	(5,198)
New Zealand Earthquake (2010)	47,071
2018 Large Loss Events	81,555
Other	(31,916)
<i>Total large catastrophe events</i>	<u>(17,557)</u>
<i>Small catastrophe events and attritional loss movements</i>	
Other small catastrophe events and attritional loss movements	5,379
<i>Total small catastrophe events and attritional loss movements</i>	<u>5,379</u>
Total catastrophe and attritional net claims and claim expenses	(12,178)
Actuarial assumption changes	9,245
Total net favorable development of prior accident years net claims and claim expenses	<u>\$ (2,933)</u>

The net favorable development of prior accident years net claims and claim expenses within the Company's Property segment in 2019 of \$2.9 million was comprised of net favorable development of \$17.6 million related to large catastrophe events, net adverse development of \$5.4 million related to small catastrophe events and attritional loss movements and net adverse development of \$9.2 million related to actuarial

assumption changes principally related to the Company's other property class of business. Included in net favorable development of prior accident years net claims and claim expenses from large catastrophe events was \$101.6 million of net decreases in the estimated ultimate losses associated with Hurricanes Harvey, Irma and Maria, the Mexico City Earthquake, the wildfires in California during the fourth quarter of 2017 and certain losses associated with aggregate loss contracts (collectively, the "2017 Large Loss Events"), partially offset by \$81.6 million of net increases in the estimated ultimate losses associated with Typhoons Jebi, Mangkhut and Trami, Hurricane Florence, the wildfires in California during the third and fourth quarters of 2018, Hurricane Michael and certain losses associated with aggregate loss contracts (collectively, the "2018 Large Loss Events") and \$47.1 million of net increases in the estimated ultimate losses associated with the 2010 New Zealand Earthquake.

<u>Year ended December 31,</u>	<u>2018</u>
	(Favorable) adverse development
Catastrophe net claims and claim expenses	
<i>Large catastrophe events</i>	
2017 Large Loss Events	\$ (172,512)
Other	(9,517)
<i>Total large catastrophe events</i>	<u>(182,029)</u>
<i>Small catastrophe events and attritional loss movements</i>	
Other small catastrophe events and attritional loss movements	(33,579)
<i>Total small catastrophe events and attritional loss movements</i>	<u>(33,579)</u>
Total catastrophe and attritional net claims and claim expenses	(215,608)
Actuarial assumption changes	(5,682)
Total net favorable development of prior accident years net claims and claim expenses	<u>\$ (221,290)</u>

The net favorable development of prior accident years net claims and claim expenses within the Company's Property segment in 2018 of \$221.3 million was comprised of net favorable development of \$182.0 million related to large catastrophe events, net favorable development of \$33.6 million related to small catastrophe events and attritional loss movements and \$5.7 million of net favorable development associated with actuarial assumption changes. Included in net favorable development of prior accident years net claims and claim expenses from large events was \$172.5 million of net decreases in the estimated ultimate losses associated with the 2017 Large Loss Events. The Company's Property segment also experienced net favorable development of \$33.6 million associated with a number of other small catastrophe events as well as attritional loss movements related to lines of business where the Company principally estimates net claims and claim expenses using traditional actuarial methods.

<u>Year ended December 31,</u>	<u>2017</u> (Favorable) adverse development
Catastrophe net claims and claim expenses	
<i>Large catastrophe events</i>	
Storm Sandy (2012)	\$ (4,395)
April and May U.S. Tornadoes (2011)	(4,177)
New Zealand Earthquake (2010)	4,061
New Zealand Earthquake (2011)	5,807
Other	(8,936)
<i>Total large catastrophe events</i>	<u>(7,640)</u>
<i>Small catastrophe events and attritional loss movements</i>	
Tianjin Explosion (2015)	(8,002)
Fort McMurray Wildfire (2016)	(6,364)
Other small catastrophe events and attritional loss movements	(24,432)
<i>Total small catastrophe events and attritional loss movements</i>	<u>(38,798)</u>
Total catastrophe and attritional net claims and claim expenses	(46,438)
Actuarial assumption changes	842
Total net favorable development of prior accident years net claims and claim expenses	<u>\$ (45,596)</u>

The net favorable development of prior accident years net claims and claim expenses within the Company's Property segment in 2017 of \$45.6 million was comprised of net favorable development of \$7.6 million related to large catastrophe events, net favorable development of \$38.8 million related to small catastrophe events and attritional loss movements and \$0.8 million of adverse development associated with actuarial assumption changes. Included in net favorable development of prior accident years net claims and claim expenses from large events was a number of relatively small net decreases in the estimated ultimate losses associated with a number of events from prior accident years. Included in net favorable development of prior accident years net claims and claims expenses from small events and attritional loss movements was a reduction in the estimated ultimate losses associated with a number of small catastrophes and attritional loss movements of \$24.4 million, the 2015 Tianjin Explosion of \$8.0 million and the 2016 Fort McMurray Wildfire of \$6.4 million.

Casualty and Specialty Segment

The following table details the development of the Company's liability for unpaid claims and claim expenses for its Casualty and Specialty segment:

<u>Year ended December 31,</u>	<u>2019</u> (Favorable) adverse development	<u>2018</u> (Favorable) adverse development	<u>2017</u> (Favorable) adverse development
Actuarial methods - actual reported claims less than expected claims	\$ (52,796)	\$ (41,476)	\$ (24,836)
Ogden Rate change	—	—	33,481
Actuarial assumption changes	28,914	(7,786)	(2,462)
Total net (favorable) adverse development of prior accident years net claims and claim expenses	<u>\$ (23,882)</u>	<u>\$ (49,262)</u>	<u>\$ 6,183</u>

The net favorable development of prior accident years net claims and claim expenses within the Company's Casualty and Specialty segment in 2019 of \$23.9 million was driven by reported losses generally coming in lower than expected on attritional net claims and claim expenses, partially offset by adverse development associated with certain assumption changes across a number of lines of business.

The net favorable development of prior accident years net claims and claim expenses within the Company's Casualty and Specialty segment in 2018 of \$49.3 million was driven by reported losses generally coming in lower than expected on attritional net claims and claim expenses and certain assumption changes across a number of lines of business.

The net adverse development of prior accident years net claims and claim expenses within the Company's Casualty and Specialty segment in 2017 of \$6.2 million was driven by \$33.5 million of adverse development associated with the change in the discount rate used to calculate lump sum awards in U.K. bodily injury cases (the "Ogden Rate"), from 2.5%, to minus 0.75%. Notwithstanding the impact of the Ogden Rate change was \$24.8 million of net favorable development in 2017 related to actual reported losses coming in lower than expected on attritional net claims and claim expenses across a number of lines of business and \$2.5 million of net favorable development associated with actuarial assumption changes.

Reconciliation of the Disclosure of Incurred and Paid Claims Development to the Reserve for Claims and Claim Expenses

The reconciliation of the net incurred and paid claims development tables to the reserve for claims and claim expenses in the consolidated balance sheet is as follows:

At December 31, 2019	
<u>Net reserve for claims and claim expenses</u>	
Property	\$ 2,288,762
Casualty and Specialty	4,304,061
Other	229
Total net reserve for claims and claim expenses	6,593,052
<u>Reinsurance recoverable</u>	
Property	\$ 1,785,088
Casualty and Specialty	1,005,998
Other	211
Total reinsurance recoverable	2,791,297
Total gross reserve for claims and claim expenses	\$ 9,384,349

Historical Claims Duration

The following is unaudited supplementary information about average historical claims duration by segment:

At December 31, 2019	Average annual percentage payout of incurred claims by age, net of reinsurance (number of years)									
	1	2	3	4	5	6	7	8	9	10
Property	29.9%	17.0%	17.8%	8.7%	5.4%	2.7%	4.9%	1.0%	1.2%	1.5%
Casualty and Specialty	14.3%	18.4%	13.0%	10.3%	8.8%	8.2%	4.6%	4.7%	1.7%	1.4%

Claims Frequency

Each of the Company's reportable segments are broadly considered to be assumed reinsurance, where multiple claims are often aggregated, perhaps multiple times through retrocessional reinsurance, before ultimately being ceded to the Company. In addition, the nature, size, terms and conditions of contracts entered into by the Company changes from one accident year to the next and the quantum of contractual or policy limits, and accordingly the potential amount of claims and claim expenses associated with a reported claim, can range from nominal, to significant. These factors can impact the amount and timing of the claims and claim expenses to be recorded and accordingly, developing claim frequency information is highly subjective and is not prepared or utilized for internal purposes. In addition, the Company does not have direct access to claim frequency information underlying certain of its proportional contracts given the nature

of that business. As a result, the Company does not believe providing claim frequency information is practicable as it relates to its proportional contracts.

Notwithstanding the factors noted above, the Company has developed claims frequency information associated with its excess of loss reinsurance contracts. As each accident year develops, the Company would expect the cumulative number of reported claims to increase in certain of its excess of loss reinsurance contracts, most notably in its Casualty and Specialty segment. In determining claims frequency for its excess of loss reinsurance contracts, the Company has made the following assumptions:

- Claims below the insured layer of a contract are excluded;
- If an insured loss event results in claims associated with a number of layers of a contract, the Company would consider this to be a single claim; and
- If an insured loss event results in claims associated with a number of the Company's operating subsidiaries, the Company considers each operating subsidiary to have a reported claim.

The following table details the Company's cumulative number of reported claims for its excess of loss reinsurance contracts allocated by segment:

Accident Year	At December 31, 2019	
	Cumulative number of reported claims	
	Property	Casualty and Specialty
2010	835	1,215
2011	1,388	1,964
2012	922	2,263
2013	799	2,712
2014	744	3,421
2015	758	3,783
2016	1,089	4,135
2017	2,215	3,294
2018	2,050	2,148
2019	861	816

Assumed Reinsurance Contracts Classified As Deposit Contracts

Net claims and claim expenses incurred were reduced by \$Nil during 2019 (2018 – \$0.2 million, 2017 – \$0.2 million) related to income earned on assumed reinsurance contracts that were classified as deposit contracts with underwriting risk only. Other income was increased by \$1.3 million during 2019 (2018 – \$11.2 million, 2017 – \$3.7 million) related to premiums and losses incurred on assumed reinsurance contracts that were classified as deposit contracts with timing risk only. Aggregate deposit liabilities of \$9.0 million are included in reinsurance balances payable at December 31, 2019 (2018 – \$10.3 million) and aggregate deposit assets of \$Nil are included in other assets at December 31, 2019 (2018 – \$Nil) associated with these contracts.

NOTE 9. DEBT AND CREDIT FACILITIES

Debt Obligations

A summary of the Company's debt obligations on its consolidated balance sheets is set forth below:

	December 31, 2019		December 31, 2018	
	Fair Value	Carrying Value	Fair Value	Carrying Value
3.600% Senior Notes due 2029	\$ 424,920	\$ 391,475	\$ —	\$ —
3.450% Senior Notes due 2027	314,070	296,292	283,680	295,797
3.700% Senior Notes due 2025	318,567	298,057	292,557	297,688
5.750% Senior Notes due 2020	251,030	249,931	255,938	249,602
4.750% Senior Notes due 2025 (DaVinciRe) (1)	160,031	148,350	142,539	148,040
	<u>\$ 1,468,618</u>	<u>\$ 1,384,105</u>	<u>\$ 974,714</u>	<u>\$ 991,127</u>

(1) RenaissanceRe owns a noncontrolling economic interest in its joint venture DaVinciRe. Because RenaissanceRe controls a majority of DaVinciRe's outstanding voting rights, the consolidated financial statements of DaVinciRe are included in the consolidated financial statements of RenaissanceRe. However, RenaissanceRe does not guarantee or provide credit support for DaVinciRe and RenaissanceRe's financial exposure to DaVinciRe is limited to its investment in DaVinciRe's shares and counterparty credit risk arising from reinsurance transactions.

3.600% Senior Notes Due 2029

On April 2, 2019, RenaissanceRe issued \$400.0 million principal amount of its 3.600% Senior Notes due April 15, 2029, with interest on the notes payable on April 15 and October 15 of each year, commencing on October 15, 2019. The notes are redeemable at the applicable redemption price, subject to the terms described in the indenture for the notes. However, the notes may not be redeemed prior to April 15, 2022 without approval from the Bermuda Monetary Authority (the "BMA") and may not be redeemed at any time prior to their maturity if enhanced capital requirements, as established by the BMA, would be breached immediately before or after giving effect to the redemption of such notes, unless, in each case, RenaissanceRe replaces the capital represented by the notes to be redeemed with capital having equal or better capital treatment as the notes under applicable BMA rules. The notes contain various covenants including limitations on mergers and consolidations, and restrictions as to the disposition of, and the placing of liens on, the stock of designated subsidiaries. The net proceeds from this offering were used to repay, in full, the \$200.0 million outstanding under the Company's revolving credit facility at March 31, 2019, which the Company used to partially fund the purchase price for the TMR Stock Purchase, and the remainder of the net proceeds was used for general corporate purposes. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR.

3.450% Senior Notes due 2027 of RenaissanceRe Finance Inc.

On June 29, 2017, RenaissanceRe Finance Inc. ("RenaissanceRe Finance") issued \$300.0 million principal amount of its 3.450% Senior Notes due July 1, 2027, with interest on the notes payable on July 1 and January 1 of each year. The notes are fully and unconditionally guaranteed by RenaissanceRe and may be redeemed by RenaissanceRe Finance prior to maturity, subject to the payment of a "make-whole" premium if the notes are redeemed prior to April 1, 2027. The notes contain various covenants, including limitations on mergers and consolidations, and restrictions as to the disposition of, and the placing of liens on, stock of designated subsidiaries.

3.700% Senior Notes due 2025 of RenaissanceRe Finance

On March 24, 2015, RenaissanceRe Finance issued \$300.0 million principal amount of its 3.700% Senior Notes due April 1, 2025, with interest on the notes payable on April 1 and October 1 of each year. The notes are fully and unconditionally guaranteed by RenaissanceRe and may be redeemed by RenaissanceRe Finance prior to maturity, subject to the payment of a "make-whole" premium if the notes are redeemed prior to January 1, 2025. The notes contain various covenants, including limitations on mergers and consolidations, and restrictions as to the disposition of, and the placing of liens on, stock of designated subsidiaries.

The net proceeds from the offering of the notes (together with cash on hand) were applied by RenaissanceRe to repay in full a \$300.0 million bridge loan that Barclays Bank PLC provided to RenaissanceRe on February 25, 2015 in order to finance a portion of the cash consideration paid by RenaissanceRe in connection with the acquisition of Platinum.

5.75% Senior Notes due 2020 of RenRe North America Holdings Inc. and RenaissanceRe Finance

On March 17, 2010, RenRe North America Holdings Inc. ("RRNAH") issued \$250.0 million principal amount of its 5.75% Senior Notes due March 15, 2020 (the "RRNAH Notes"), with interest on the notes payable on March 15 and September 15 of each year. RenaissanceRe Finance became a co-obligor of the notes as of July 3, 2015. The notes, which are senior obligations, are fully and unconditionally guaranteed by RenaissanceRe and may be redeemed prior to maturity, subject to the payment of a "make-whole" premium. The notes contain various covenants, including limitations on mergers and consolidations, and restrictions as to the disposition of, and the placing of liens on, stock of designated subsidiaries.

Series B 7.50% Notes due 2017 of Platinum Underwriters Finance, Inc.

On November 2, 2005, Platinum Underwriters Finance, Inc. ("Platinum Finance") issued \$250.0 million principal amount of its Series B 7.50% Notes due June 1, 2017 (the "Platinum Finance Notes"). On June 1, 2017, the Platinum Finance Notes matured and the Company repaid the aggregate principal amount of \$250.0 million plus applicable accrued interest in full. Platinum Finance was subsequently dissolved on November 30, 2017. Interest on the Platinum Finance Notes was payable on June 1 and December 1 of each year. The Platinum Finance Notes, which were senior obligations, were fully and unconditionally guaranteed by RenaissanceRe.

DaVinciRe Senior Notes

On May 4, 2015, DaVinciRe issued \$150.0 million principal amount of its 4.750% Senior Notes due May 1, 2025, with interest on the notes payable on May 1 and November 1, commencing with November 1, 2015 (the "DaVinciRe Senior Notes"). The DaVinciRe Senior Notes, which are senior obligations, may be redeemed prior to maturity, subject to the payment of a "make-whole" premium if the notes are redeemed before February 1, 2025. The DaVinciRe Senior Notes contain various covenants including restrictions as to the disposition of, and the placing of liens on, the stock of designated subsidiaries, limitations on mergers, amalgamations and consolidations, limitations on third-party investor redemptions, a leverage covenant and a covenant to maintain certain ratings. The net proceeds from this offering were used to repay, in full, \$100.0 million outstanding under the loan agreement, dated as of March 30, 2011, between DaVinciRe and RenaissanceRe, and the remainder of the net proceeds were used for general corporate purposes.

Scheduled Debt Maturity

The following table sets forth the scheduled maturity of the Company's aggregate amount of its debt obligation reflected on its consolidated balance sheet at December 31, 2019:

2020	\$	250,000
2021		—
2022		—
2023		—
2024		—
After 2024		1,150,000
Unamortized discount and debt issuance expenses		(15,895)
	\$	<u>1,384,105</u>

Credit Facilities

The outstanding amounts issued or drawn under each of the Company's significant credit facilities is set forth below:

<u>At December 31, 2019</u>	<u>Issued or Drawn</u>
Revolving Credit Facility (1)	\$ —
Bilateral Letter of Credit Facilities	
Secured	298,063
Unsecured	381,770
Funds at Lloyd's Letter of Credit Facility	290,000
TMR Letters of Credit (2)	140,923
	<u>\$ 1,110,756</u>

(1) At December 31, 2019, no amounts were issued or drawn under this facility.

(2) These letters of credit were transferred to us in connection with the acquisition of TMR. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR.

Revolving Credit Facility

RenaissanceRe, Renaissance Reinsurance, RenaissanceRe Specialty U.S., Renaissance Reinsurance U.S. and RenaissanceRe Europe are parties to a second amended and restated credit agreement dated November 9, 2018 (as amended, the "Revolving Credit Agreement") with various banks, financial institutions and Wells Fargo Bank, National Association ("Wells Fargo") as administrative agent, which amended and restated a previous credit agreement. The Revolving Credit Agreement provides for a revolving commitment to RenaissanceRe of \$500.0 million, with a right, subject to satisfying certain conditions, to increase the size of the facility to \$750.0 million. Amounts borrowed under the Revolving Credit Agreement bear interest at a rate selected by RenaissanceRe equal to the Base Rate or LIBOR (each as defined in the Revolving Credit Agreement) plus a margin. In addition to revolving loans, the Revolving Credit Agreement provides that the entire facility will also be available for the issuance of standby letters of credit, subject to the terms and conditions set forth therein, and swingline loans, which are capped at \$50.0 million for each of the swingline lenders. At December 31, 2019, RenaissanceRe had \$Nil outstanding under the Revolving Credit Agreement.

The Revolving Credit Agreement contains representations, warranties and covenants customary for bank loan facilities of this type, including limits on the ability of RenaissanceRe and its subsidiaries to merge, consolidate, sell a substantial amount of assets, incur liens and declare or pay dividends under certain circumstances. The Revolving Credit Agreement also contains certain financial covenants which generally provide that the ratio of consolidated debt to capital shall not exceed 0.35:1 and that the consolidated net worth of RenaissanceRe shall equal or exceed approximately \$2.9 billion. The net worth requirement is recalculated effective as of the end of each fiscal year.

If certain events of default occur, in some circumstances the lenders' obligations to make loans may be terminated and the outstanding obligations of RenaissanceRe under the Revolving Credit Agreement may be accelerated. The scheduled commitment maturity date of the Revolving Credit Agreement is November 9, 2023.

RRNAH and RenaissanceRe Finance guarantee RenaissanceRe's obligations under the Revolving Credit Agreement. Subject to certain exceptions, additional subsidiaries of RenaissanceRe are required to become guarantors if such subsidiaries issue or incur certain types of indebtedness.

Bilateral Letter of Credit Facilities

Uncommitted, Secured Standby Letter of Credit Facility with Wells Fargo

RenaissanceRe and certain of its subsidiaries and affiliates, including Renaissance Reinsurance, DaVinci, Renaissance Reinsurance U.S. and RenaissanceRe Europe are parties to an Amended and Restated Standby Letter of Credit Agreement dated June 21, 2019 with Wells Fargo, which provides for a secured, uncommitted facility under which letters of credit may be issued from time to time for the respective accounts of the subsidiaries. Pursuant to the agreement, the applicants may request secured letter of credit issuances, and also have an option to request the issuance of up to \$25.0 million of unsecured letters of credit (outstanding on such request date). RenaissanceRe has unconditionally guaranteed the payment obligations of the applicants other than DaVinci.

The agreement contains representations, warranties and covenants that are customary for facilities of this type. Under the agreement, each applicant is required to pledge eligible collateral having a value sufficient to cover all of its obligations under the agreement with respect to secured letters of credit issued for its account. In the case of an event of default under the agreement, Wells Fargo may exercise certain remedies, including conversion of collateral of a defaulting applicant into cash.

At December 31, 2019, there were \$31.5 million of secured letters of credit outstanding and \$Nil of unsecured letters of credit outstanding under this agreement.

Secured Letter of Credit Facility with Citibank Europe

Certain subsidiaries and affiliates of RenaissanceRe, including Renaissance Reinsurance, DaVinci, Renaissance Reinsurance of Europe, RenaissanceRe Specialty U.S., Renaissance Reinsurance U.S. and RenaissanceRe Europe, are parties to a facility letter, dated September 17, 2010, as amended, with Citibank Europe plc ("Citibank Europe"), pursuant to which Citibank Europe has established a letter of credit facility under which Citibank Europe provides a commitment to issue letters of credit for the accounts of the participants in multiple currencies. The aggregate commitment amount is \$300.0 million, subject to a sublimit of \$25.0 million for letters of credit issued for the account of Renaissance Reinsurance U.S.

The letter of credit facility is scheduled to expire on December 31, 2021. At all times during which it is a party to the facility, each participant is obligated to pledge to Citibank Europe securities with a value that equals or exceeds the aggregate face amount of its then-outstanding letters of credit. In the case of an event of default under the facility with respect to a participant, Citibank Europe may exercise certain remedies, including terminating its commitment to such participant and taking certain actions with respect to the collateral pledged by such participant (including the sale thereof). In the facility letter, each participant makes representations and warranties that are customary for facilities of this type and agrees that it will comply with certain informational and other undertakings.

At December 31, 2019, \$266.5 million aggregate face amount of letters of credit was outstanding and, subject to the sublimits described above, \$33.5 million remained unused and available to the participants under this facility.

Uncommitted, Unsecured Letter of Credit Facility with Citibank Europe

Renaissance Reinsurance, RenaissanceRe Specialty U.S., Renaissance Reinsurance U.S., RenaissanceRe Europe and RenaissanceRe UK are parties to a Master Agreement for Issuance of Payment Instruments and a Facility Letter for Issuance of Payment Instruments with Citibank Europe dated March 22, 2019, as amended, which established an uncommitted, unsecured letter of credit facility pursuant to which Citibank Europe or one of its correspondents may issue standby letters of credit or similar

instruments in multiple currencies for the account of one or more of the applicants. The obligations of the applicants under this facility are guaranteed by RenaissanceRe.

Pursuant to the master agreement, each applicant makes representations and warranties that are customary for facilities of this type and agrees that it will comply with certain informational and other customary undertakings. The master agreement contains events of default customary for facilities of this type. In the case of an event of default under the facility, Citibank Europe may exercise certain remedies, including requiring that the relevant applicant pledge cash collateral in an amount equal to the maximum actual and contingent liability of the issuing bank under the letters of credit and similar instruments issued for such applicant under the facility, and taking certain actions with respect to the collateral pledged by such applicant (including the sale thereof). In addition, Citibank Europe may require that the relevant applicant pledge cash collateral if certain minimum ratings are not satisfied.

At December 31, 2019, the aggregate face amount of the payment instruments issued and outstanding under this facility was \$270.7 million.

Unsecured Letter of Credit Facility with Credit Suisse

RenaissanceRe Europe and RenaissanceRe are parties to an amended and restated letter of credit facility agreement with Credit Suisse (Switzerland) Ltd. ("Credit Suisse") dated March 22, 2019 which provides for a \$125.0 million committed, unsecured letter of credit facility pursuant to which Credit Suisse (or any other fronting bank acting on behalf of Credit Suisse) may issue letters of credit or similar instruments in multiple currencies for the account of RenaissanceRe Europe. The obligations of RenaissanceRe Europe under the agreement are guaranteed by RenaissanceRe. The facility is scheduled to expire on December 21, 2022.

In the agreement, RenaissanceRe Europe and RenaissanceRe make representations, warranties and covenants that are customary for facilities of this type, and agree to comply with certain informational and other customary undertakings. The agreement also contains certain financial covenants applicable to the RenaissanceRe, including the requirement to maintain the ratio of consolidated debt to capital of not more than 0.35:1, to maintain a minimum consolidated net worth initially of approximately \$3.0 billion, subject to an annual adjustment, and to maintain RenaissanceRe's credit rating with S&P and A.M. Best of at least A-.

The agreement contains events of default customary for facilities of this type. At any time on or after the occurrence of an event of default, Credit Suisse may exercise remedies, including canceling the commitment, requiring that RenaissanceRe Europe pledge cash collateral in an amount equal to the maximum liability of the issuing bank under the letters of credit and similar instruments issued under the agreement, and demanding that RenaissanceRe Europe procure the release by the beneficiaries of the letters of credit and similar instruments issued under the agreement.

At December 31, 2019, letters of credit issued by Credit Suisse under the agreement were outstanding in the face amount of \$111.1 million.

Funds at Lloyd's Letter of Credit Facility

Renaissance Reinsurance is party to a letter of credit facility with Bank of Montreal, Citibank Europe and ING Bank N.V. evidenced by an Amended and Restated Letter of Credit Reimbursement Agreement dated November 7, 2019, which provides for the issuance of letters of credit to support business written by Renaissance Reinsurance's Lloyd's syndicate, Syndicate 1458. Effective November 7, 2019, the stated amount of the outstanding Funds at Lloyd's letter of credit increased from \$255.0 million to \$290.0 million. Renaissance Reinsurance may request that the outstanding letter of credit be amended to increase the stated amount or that a new letter of credit denominated in U.S. dollars be issued, in an aggregate amount for all such increases or issuances not to exceed \$140.0 million. The facility terminates four years from the date of notice from the lenders to the beneficiary of the letter of credit, unless extended.

Generally, Renaissance Reinsurance is not required to post any collateral for letters of credit issued pursuant to this facility. However, following the occurrence of a partial collateralization event or a full collateralization event, as provided in the agreement, Renaissance Reinsurance is required to pledge eligible securities with a collateral value of at least 60% or 100%, respectively, of the aggregate amount of its then-outstanding letters of credit. The latest date upon which Renaissance Reinsurance will become obligated to collateralize the facility at 100% is December 31, 2020.

In the agreement, Renaissance Reinsurance makes representations and warranties that are customary for facilities of this type and agrees that it will comply with certain informational undertakings and other covenants, including maintaining a minimum net worth. In the case of an event of default under the FAL facility, the lenders may exercise certain remedies, including declaring all outstanding obligations of Renaissance Reinsurance under the agreement and related credit documents due and payable and taking certain actions with respect to the collateral pledged by Renaissance Reinsurance (including the sale thereof).

At December 31, 2019, the face amount of the outstanding letter of credit issued under the FAL facility was \$290.0 million.

TMR Letters of Credit

In connection with the acquisition of TMR, certain letters of credit were transferred to the Company, as follows: (a) Mizuho Bank, Ltd. issued certain letters of credit for the account of RenaissanceRe Europe pursuant to a Letter of Credit and Reimbursement Agreement, dated as of May 14, 2012, as previously amended, (b) The Bank of Tokyo-Mitsubishi UFJ Ltd., Düsseldorf Branch, issued certain letters of credit for the account of RenaissanceRe Europe pursuant to a Committed Revolving Standby Letter of Credit Agreement, dated as of September 29, 2017, and (c) The Bank of Tokyo-Mitsubishi UFJ, Ltd. issued certain letters of credit for the account of RenaissanceRe UK pursuant to a Facility Letter, dated as of December 21, 2006. The parties have agreed that no new letters of credit will be issued under these facilities.

Top Layer Re

Renaissance Reinsurance is party to a collateralized letter of credit and reimbursement agreement in the amount of \$37.5 million that supports the Company's Top Layer Re joint venture. Renaissance Reinsurance is obligated to make a mandatory capital contribution of up to \$50.0 million in the event that a loss reduces Top Layer Re's capital below a specified level.

NOTE 10. NONCONTROLLING INTERESTS

A summary of the Company's redeemable noncontrolling interests on its consolidated balance sheets is set forth below:

	December 31, 2019	December 31, 2018
Redeemable noncontrolling interest - DaVinciRe	\$ 1,435,581	\$ 1,034,946
Redeemable noncontrolling interest - Medici	632,112	416,765
Redeemable noncontrolling interest - Vermeer	1,003,615	599,989
Redeemable noncontrolling interests	<u>\$ 3,071,308</u>	<u>\$ 2,051,700</u>

A summary of the Company's redeemable noncontrolling interests on its consolidated statements of operations is set forth below:

<u>Year ended December 31,</u>	2019	2018	2017
Redeemable noncontrolling interest - DaVinciRe	\$ 127,084	\$ 27,638	\$ (134,860)
Redeemable noncontrolling interest - Medici	25,759	13,926	2,578
Redeemable noncontrolling interest - Vermeer	48,626	(11)	—
Net income (loss) attributable to redeemable noncontrolling interests	<u>\$ 201,469</u>	<u>\$ 41,553</u>	<u>\$ (132,282)</u>

Redeemable Noncontrolling Interest – DaVinciRe

RenaissanceRe owns a noncontrolling economic interest in DaVinciRe; however, because RenaissanceRe controls a majority of DaVinciRe's outstanding voting rights, the consolidated financial statements of DaVinciRe are included in the consolidated financial statements of the Company. The portion of DaVinciRe's earnings owned by third parties is recorded in the consolidated statements of operations as net

income attributable to redeemable noncontrolling interests. The Company's noncontrolling economic ownership in DaVinciRe was 21.9% at December 31, 2019 (2018 - 22.1%).

DaVinciRe shareholders are party to a shareholders agreement which provides DaVinciRe shareholders, excluding RenaissanceRe, with certain redemption rights that enable each shareholder to notify DaVinciRe of such shareholder's desire for DaVinciRe to repurchase up to half of such shareholder's initial aggregate number of shares held, subject to certain limitations, such as limiting the aggregate of all share repurchase requests to 25% of DaVinciRe's capital in any given year and satisfying all applicable regulatory requirements. If total shareholder requests exceed 25% of DaVinciRe's capital, the number of shares repurchased will be reduced among the requesting shareholders pro-rata, based on the amounts desired to be repurchased. Shareholders desiring to have DaVinci repurchase their shares must notify DaVinciRe before March 1 of each year. The repurchase price will be based on GAAP book value as of the end of the year in which the shareholder notice is given, and the repurchase will be effective as of January 1 of the following year. The repurchase price is generally subject to a true-up for potential development on outstanding loss reserves after settlement of all claims relating to the applicable years.

2019

Effective June 1, 2019, DaVinciRe completed an equity capital raise of \$349.2 million, comprised of \$263.1 million from third-party investors and \$86.1 million from RenaissanceRe. In addition, RenaissanceRe sold an aggregate of \$11.6 million of its shares in DaVinciRe to a third-party investor. The Company's noncontrolling economic ownership in DaVinciRe subsequent to these transactions was 21.9%, effective June 1, 2019.

The Company expects its noncontrolling economic ownership in DaVinciRe to fluctuate over time.

The activity in redeemable noncontrolling interest – DaVinciRe is detailed in the table below:

Year ended December 31,	2019	2018
Beginning balance	\$ 1,034,946	\$ 1,011,659
Redemption of shares from redeemable noncontrolling interests, net of adjustments	(1,148)	(4,351)
Sale of shares to redeemable noncontrolling interests	274,699	—
Net income attributable to redeemable noncontrolling interests	127,084	27,638
Ending balance	<u>\$ 1,435,581</u>	<u>\$ 1,034,946</u>

Redeemable Noncontrolling Interest - Medici

Medici is an exempted company incorporated under the laws of Bermuda and its objective is to seek to invest substantially all of its assets in various insurance-based investment instruments that have returns primarily tied to property catastrophe risk. RenaissanceRe owns a noncontrolling economic interest in Medici; however, because RenaissanceRe controls all of Medici's outstanding voting rights, the financial statements of Medici are included in the consolidated financial statements of the Company. The portion of Medici's earnings owned by third parties is recorded in the consolidated statements of operations as net income attributable to redeemable noncontrolling interests. Any shareholder may redeem all or any portion of its shares as of the last day of any calendar month, upon at least 30 calendar days' prior irrevocable written notice to Medici.

2019

During 2019, third-party investors subscribed for \$237.0 million and redeemed \$47.4 million of the participating, non-voting common shares of Medici. As a result of these net subscriptions, the Company's noncontrolling economic ownership in Medici was 12.1% at December 31, 2019.

2018

During 2018, third-party investors subscribed for \$208.5 million and redeemed \$90.5 million of the participating, non-voting common shares of Medici. As a result of these net subscriptions, the Company's noncontrolling economic ownership in Medici was 16.6%, at December 31, 2018.

The Company expects its noncontrolling economic ownership in Medici to fluctuate over time.

The activity in redeemable noncontrolling interest – Medici is detailed in the table below:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>
Beginning balance	\$ 416,765	\$ 284,847
Redemption of shares from redeemable noncontrolling interests, net of adjustments	(47,401)	(90,490)
Sale of shares to redeemable noncontrolling interests	236,989	208,482
Net income attributable to redeemable noncontrolling interests	25,759	13,926
Ending balance	<u>\$ 632,112</u>	<u>\$ 416,765</u>

Redeemable Noncontrolling Interest – Vermeer

Vermeer is an exempted Bermuda reinsurer that provides capacity focused on risk remote layers in the U.S. property catastrophe market. Vermeer is managed by RUM in return for a management fee. The Company maintains majority voting control of Vermeer, while the sole third-party investor, PGGM, retains all of the economic benefits. The Company concluded that Vermeer is a VIE as it has voting rights that are not proportional to its participating rights, and the Company is the primary beneficiary. As a result, the Company consolidates Vermeer and all significant inter-company transactions have been eliminated. The portion of Vermeer's earnings owned by PGGM is recorded in the consolidated statements of operations as net income attributable to redeemable noncontrolling interests. The Company has not provided any financial or other support to Vermeer that it was not contractually required to provide.

2019

During 2019, PGGM subscribed for \$355.0 million of the participating, non-voting common shares of Vermeer.

2018

During 2018, PGGM subscribed for \$600.0 million of the participating, non-voting common shares of Vermeer and the Company subscribed for \$1 thousand of all the voting, non-participating shares of Vermeer.

The Company does not expect its noncontrolling economic ownership in Vermeer to fluctuate over time.

The activity in redeemable noncontrolling interest – Vermeer is detailed in the table below:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>
Beginning balance	\$ 599,989	\$ —
Sale of shares to redeemable noncontrolling interest	355,000	600,000
Net income (loss) attributable to redeemable noncontrolling interest	48,626	(11)
Ending balance	<u>\$ 1,003,615</u>	<u>\$ 599,989</u>

NOTE 11. VARIABLE INTEREST ENTITIES

Upsilon RFO

Upsilon RFO is a managed joint venture and a Bermuda domiciled SPI that was formed by the Company principally to provide additional capacity to the worldwide aggregate and per-occurrence retrocessional property catastrophe excess of loss market.

The shareholders (other than the Class A shareholder) participate in substantially all of the profits or losses of Upsilon RFO while their shares remain outstanding. The shareholders (other than the Class A shareholder) indemnify Upsilon RFO against losses relating to insurance risk and therefore these shares

have been accounted for as prospective reinsurance under FASB ASC Topic *Financial Services - Insurance*.

Upsilon RFO is considered a VIE as it has insufficient equity capital to finance its activities without additional financial support. The Company is the primary beneficiary of Upsilon RFO as it has the power over the activities that most significantly impact the economic performance of Upsilon RFO and has the obligation to absorb expected losses and the right to receive expected benefits that could be significant to Upsilon RFO, in accordance with the accounting guidance. As a result, the Company consolidates Upsilon RFO and all significant inter-company transactions have been eliminated. Other than its equity investment in Upsilon RFO, the Company has not provided financial or other support to Upsilon RFO that it was not contractually required to provide.

2019

During 2019, Upsilon RFO returned \$279.2 million of capital to its investors, including \$31.0 million to the Company. In addition, during 2019, \$618.7 million of Upsilon RFO non-voting preference shares were issued to new and existing investors, including \$100.0 million to the Company. At December 31, 2019, the Company's participation in the risks assumed by Upsilon RFO was 16.5%.

Payments for certain of the shares issued during 2019 that were received by the Company prior to January 1, 2019 were included in other liabilities on the Company's consolidated balance sheet at December 31, 2018, and in other operating cash flows on the Company's consolidated statements of cash flows for 2018. During 2019, in connection with the issuance of the non-voting preference shares of Upsilon RFO, other liabilities were reduced by this amount, and reinsurance balances payable were increased by an offsetting amount, with corresponding impacts to other operating cash flows and the change in reinsurance balances payable on the Company consolidated statements of cash flows for the year ended December 31, 2019.

At December 31, 2019, the Company's consolidated balance sheet included total assets and total liabilities of Upsilon RFO of \$3.1 billion and \$3.1 billion, respectively (December 31, 2018 - \$2.2 billion and \$2.2 billion, respectively).

2018

During 2018, \$856.7 million of Upsilon RFO non-voting preference shares were issued to existing investors, including \$109.8 million to the Company. At December 31, 2018, the Company's participation in the risks assumed by Upsilon RFO was 14.0%.

Payments for certain of the shares issued during 2018 that were received by the Company prior to January 1, 2018 were included in other liabilities on the Company's consolidated balance sheet at December 31, 2017, and in other operating cash flows on the Company's consolidated statements of cash flows for 2017. During 2018, in connection with the issuance of the non-voting preference shares of Upsilon RFO, other liabilities were reduced by this amount, and reinsurance balances payable were increased by an offsetting amount, with corresponding impacts to other operating cash flows and the change in reinsurance balances payable on the Company consolidated statements of cash flows for the year ended December 31, 2018.

Refer to "Note 23. Subsequent Events" for additional information related to Upsilon RFO's non-voting preference shares subsequent to December 31, 2019.

Vermeer

Vermeer is an exempted Bermuda reinsurer that provides capacity focused on risk remote layers in the U.S. property catastrophe market. Vermeer is considered a VIE as it has voting rights that are not proportional to its participating rights. The Company is the primary beneficiary of Vermeer as it has power over the activities that most significantly impact the economic performance of Vermeer and has the obligation to absorb expected losses and the right to receive expected benefits that could be significant to Vermeer, in accordance with the accounting guidance. The portion of Vermeer's earnings owned by PGM is recorded in the consolidated statements of operations as net income attributable to redeemable noncontrolling interests. Refer to "Note 10. Noncontrolling Interests" for additional information regarding Vermeer. Other than the Company's minimal equity investment, it has not provided any financial or other support to Vermeer that it was not contractually required to provide.

At December 31, 2019, the Company's consolidated balance sheet included total assets and total liabilities of Vermeer of \$1.0 billion and \$23.2 million, respectively (2018 - \$600.4 million and \$0.4 million, respectively). In addition, the Company's consolidated balance sheet included redeemable noncontrolling interests associated with Vermeer of \$1.0 billion at December 31, 2019 (2018 - \$600.0 million).

Mona Lisa Re Ltd.

Mona Lisa Re Ltd. ("Mona Lisa Re") is licensed as a Bermuda domiciled SPI to provide reinsurance capacity to subsidiaries of RenaissanceRe, namely Renaissance Reinsurance and DaVinci, through reinsurance agreements which will be collateralized and funded by Mona Lisa Re through the issuance of one or more series of principal-at-risk variable rate notes to third-party investors.

Upon issuance of a series of notes by Mona Lisa Re, all of the proceeds from the issuance are deposited into collateral accounts, separated by series, to fund any potential obligation under the reinsurance agreements entered into with Renaissance Reinsurance and/or DaVinci underlying such series of notes. The outstanding principal amount of each series of notes generally will be returned to holders of such notes upon the expiration of the risk period underlying such notes, unless an event occurs which causes a loss under the applicable series of notes, in which case the amount returned will be reduced by such noteholder's pro rata share of such loss, as specified in the applicable governing documents of such notes. In addition, holders of such notes are generally entitled to interest payments, payable quarterly, as determined by the applicable governing documents of each series of notes.

The Company concluded that Mona Lisa Re meets the definition of a VIE as it does not have sufficient equity capital to finance its activities. The Company evaluated its relationship with Mona Lisa Re and concluded it does not have a variable interest in Mona Lisa Re. As a result, the financial position and results of operations of Mona Lisa Re are not consolidated by the Company. The Company has not provided financial or other support to Mona Lisa Re that it was not contractually required to provide.

On July 6, 2018, all previously outstanding series of notes issued by Mona Lisa Re were redeemed and the proceeds were returned to the holders of such notes. At December 31, 2019, the total assets and total liabilities of Mona Lisa Re were \$6 thousand and \$6 thousand, respectively (2018 - \$41 thousand and \$41 thousand, respectively).

The only transactions related to Mona Lisa Re that are recorded in the Company's consolidated financial statements are the ceded reinsurance agreements entered into by Renaissance Reinsurance and DaVinci which are accounted for as prospective reinsurance under FASB ASC Topic *Financial Services - Insurance*. Renaissance Reinsurance and DaVinci have together entered into ceded reinsurance contracts with Mona Lisa Re with gross premiums ceded of \$Nil and \$Nil, respectively, during 2019 (2018 - \$0.2 million and \$0.2 million, respectively, 2017 - \$0.4 million and \$0.4 million, respectively). In addition, Renaissance Reinsurance and DaVinci recognized ceded premiums earned related to the ceded reinsurance contracts with Mona Lisa Re of \$Nil and \$Nil, respectively, during 2019 (2018 - \$0.2 million and \$0.2 million, respectively, 2017 - \$4.1 million and \$2.9 million, respectively).

Refer to "Note 23. Subsequent Events" for additional information related to the issuance of principal-at-risk variable rate notes by Mona Lisa Re subsequent to December 31, 2019.

Fibonacci Re

Fibonacci Re, a Bermuda-domiciled SPI, was formed to provide collateralized capacity to Renaissance Reinsurance and its affiliates.

Upon issuance of a series of notes by Fibonacci Re, all of the proceeds from the issuance are deposited into collateral accounts, separated by series, to fund any potential obligation under the reinsurance agreements entered into with Renaissance Reinsurance underlying such series of notes. The outstanding principal amount of each series of notes generally is expected to be returned to holders of such notes upon the expiration of the risk period underlying such notes, unless an event occurs which causes a loss under the applicable series of notes, in which case the amount returned is expected to be reduced by such noteholder's pro rata share of such loss, as specified in the applicable governing documents of such notes. In addition, holders of such notes are generally entitled to interest payments, payable quarterly, as determined by the applicable governing documents of each series of notes. RUM receives an origination and structuring fee in connection with the formation and operation of Fibonacci Re.

The Company concluded that Fibonacci Re meets the definition of a VIE as it does not have sufficient equity capital to finance its activities. The Company evaluated its relationship with Fibonacci Re and concluded it is not the primary beneficiary of Fibonacci Re as it does not have power over the activities that most significantly impact the economic performance of Fibonacci Re. As a result, the Company does not consolidate the financial position or results of operations of Fibonacci Re.

The only transactions related to Fibonacci Re that will be recorded in the Company's consolidated financial statements will be the ceded reinsurance agreements entered into by Renaissance Reinsurance that are accounted for as prospective reinsurance under FASB ASC Topic *Financial Services - Insurance*, and the fair value of the participating notes owned by the Company. Other than its investment in the participating notes of Fibonacci Re, the Company has not provided financial or other support to Fibonacci Re that it was not contractually required to provide.

The fair value of the Company's investment in the participating notes of Fibonacci Re is included in other investments. Net of third-party investors, the fair value of the Company's investment in Fibonacci Re was \$0.4 million at December 31, 2019 (2018 - \$6.0 million).

Renaissance Reinsurance entered into ceded reinsurance contracts with Fibonacci Re with ceded premiums of \$0.1 million and ceded premiums earned of \$0.1 million during 2019 (2018 - \$9.1 million and \$10.0 million, respectively). During 2019, Renaissance Reinsurance ceded \$7.5 million of net claims and claim expenses to Fibonacci Re (2018 - \$Nil) and as of December 31, 2019 had a net reinsurance recoverable of \$7.5 million from Fibonacci Re (December 31, 2018 - \$Nil).

Langhorne

The Company and Reinsurance Group of America, Incorporated formed Langhorne, an initiative to source third-party capital to support reinsurers targeting large in-force life and annuity blocks. In connection with Langhorne, as of December 31, 2019 the Company has invested \$1.7 million in Langhorne Holdings (2018 - \$1.3 million), a company that owns and manages certain reinsurance entities within Langhorne. In addition, as of December 31, 2019 the Company has invested \$0.1 million in Langhorne Partners (2018 - \$0.1 million), the general partner for Langhorne and the entity which manages the third-party investors investing into Langhorne Holdings.

The Company concluded that Langhorne Holdings meets the definition of a VIE as the voting rights are not proportional with the obligations to absorb losses and rights to receive residual returns. The Company evaluated its relationship with Langhorne Holdings and concluded it is not the primary beneficiary of Langhorne Holdings, as it does not have power over the activities that most significantly impact the economic performance of Langhorne Holdings. As a result, the Company does not consolidate the financial position or results of operations of Langhorne Holdings. The Company separately evaluated Langhorne Partners and concluded that it was not a VIE. The Company accounts for its investments in Langhorne Holdings and Langhorne Partners under the equity method of accounting, one quarter in arrears.

The Company anticipates that its absolute investment in Langhorne will increase, perhaps materially, as in-force life and annuity blocks of businesses are written. The Company expects its absolute and relative ownership in Langhorne Partners to remain stable. Other than its current and committed future equity investment in Langhorne, the Company has not provided financial or other support to Langhorne that it was not contractually required to provide.

Shima Re

Shima Re was acquired on March 22, 2019 in connection with the acquisition of TMR. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR. Shima Re is a Bermuda domiciled Class 3 insurer. Shima Re is registered as a segregated accounts company and provides third-party investors with access to reinsurance risk formerly managed by TMR. Following the closing of the acquisition, the retrocessionaires providing reinsurance to TMR on certain of the TMR managed third-party capital vehicles' legacy portfolios of in-force and expired contracts were replaced. The maximum remaining exposure of each segregated account is fully collateralized and is funded by cash and term deposits or investments as prescribed by the participant thereto. Shima Re no longer writes new business and the last in-force contract written by Shima Re expired on December 31, 2019.

Shima Re is considered a VIE as it has voting rights that are not proportional to its participating rights. The Company evaluated its relationship with Shima Re and concluded it is not the primary beneficiary of any segregated account, as it does not have power over the activities that most significantly impact the economic performance of any segregated account. As a result, the Company does not consolidate the financial position or results of operations of Shima Re or its segregated accounts. The Company has not provided any financial or other support to any segregated account of Shima Re that it was not contractually required to provide.

Norwood Re

A subsidiary of RenaissanceRe Europe that the Company acquired in the acquisition of TMR manages Norwood Re. Refer to “Note 3. Acquisition of Tokio Millennium Re” for additional information related to the acquisition of TMR. Norwood Re is a Bermuda domiciled SPI registered as a segregated accounts company formed to provide solutions for reinsurance-linked asset investors. Norwood Re is wholly owned by the Norwood Re Purpose Trust. Risks assumed by the segregated accounts of Norwood Re are fronted by or ceded from only one cedant - RenaissanceRe Europe and/or its insurance affiliates. The obligations of each segregated account are funded through the issuance of non-voting preference shares to third-party investors. The maximum exposure of each segregated account is fully collateralized and is funded by cash and term deposits or investments as prescribed by the participant thereto. Norwood Re no longer writes new business, and the last in-force contract written by Norwood will expire no later than May 31, 2020.

Norwood Re is considered a VIE as it has voting rights that are not proportional to its participating rights. The Company evaluated its relationship with Norwood Re and concluded it is not the primary beneficiary of Norwood Re and its segregated accounts, as it does not have power over the activities that most significantly impact the economic performance of Norwood Re and its segregated accounts. As a result, the Company does not consolidate the financial position or results of operations of Norwood Re and its segregated accounts. The Company has not provided any financial or other support to Norwood Re that it was not contractually required to provide.

NOTE 12. SHAREHOLDERS' EQUITY

Authorized Capital

The aggregate authorized capital of RenaissanceRe is 325 million shares consisting of 225 million common shares and 100 million preference shares. The following table is a summary of changes in common shares issued and outstanding:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(thousands of shares)			
Issued and outstanding shares – January 1	42,207	40,024	41,187
Issuance of shares	1,739	1,947	—
Repurchase of shares	—	—	(1,322)
Exercise of options and issuance of restricted stock awards	202	236	159
Issued and outstanding shares – December 31	<u>44,148</u>	<u>42,207</u>	<u>40,024</u>

Dividends

The Board of Directors of RenaissanceRe declared dividends of \$0.34 per common share, payable to common shareholders of record on March 15, 2019, June 14, 2019 and September 13, 2019 and December 13, 2019, and the Company paid the dividends on March 29, 2019, June 28, 2019 and September 30, 2019 and December 31, 2019, respectively. The declaration and payment of dividends on the Company's common shares are subject to the discretion of the Company's Board of Directors and depend on the Company's financial condition, general business conditions, legal, contractual and regulatory restrictions regarding the payment of dividends by the Company and its subsidiaries and other factors which the Board of Directors may consider to be relevant.

The Board of Directors approved the payment of quarterly dividends on the Series C 6.08% Preference Shares, Series E 5.375% Preference Shares and 5.750% Series F Preference Shares to preference shareholders of record in the amounts and on the quarterly record dates and dividend payment dates set forth in the prospectus supplement and Certificate of Designation for the applicable series of preference shares, unless and until further action is taken by the Board of Directors. The dividend payment dates for the preference shares will be the first day of March, June, September and December of each year (or if this date is not a business day, on the business day immediately following this date). The record dates for the preference share dividends are one day prior to the dividend payment dates. The amount of the dividend on the Series C 6.08% Preference Shares is an amount per share equal to 6.08% of the liquidation preference per annum (the equivalent to \$1.52 per share per annum, or \$0.38 per share per quarter). The amount of the dividend on the Series E 5.375% Preference Shares is an amount per share equal to 5.375% of the liquidation preference per annum (the equivalent to \$1.34375 per share per annum, or \$0.3359375 per share per quarter). The amount of the dividend on the 5.750% Series F Preference Shares is an amount per share equal to 5.750% of the liquidation preference per annum (the equivalent to \$1,437.50 per 5.750% Series F Preference Share per annum, or \$359.375 per 5.750% Series F Preference Share per quarter, or \$1.4375 per Depositary Share per annum, or \$0.359375 per Depositary Share per quarter).

During 2019, the Company paid \$36.8 million in preference share dividends (2018 - \$30.1 million, 2017 - \$22.4 million) and \$59.4 million in common share dividends (2018 - \$52.8 million, 2017 - \$51.4 million).

Common Shares

On March 22, 2019, in connection with the closing of the TMR Stock Purchase, the Company issued 1,739,071 of its common shares to Tokio as part of the aggregate consideration payable to Tokio under the TMR Stock Purchase Agreement. Refer to "Note 3. Acquisition of Tokio Millennium Re" for additional information related to the acquisition of TMR. On January 9, 2020, Tokio completed a secondary public offering of these common shares, which represented all of Tokio's remaining ownership in the Company. The Company did not receive any proceeds from Tokio's sale of its common shares.

On December 20, 2018, the Company issued 1,947,496 of its common shares to State Farm Mutual Automobile Insurance Company ("State Farm") in exchange for \$250.0 million in a private placement pursuant to an Investment Agreement between the Company and State Farm entered into on October 30, 2018.

Preference Shares

In March 2004, RenaissanceRe raised \$250.0 million through the issuance of 10 million Series C Preference Shares at \$25 per share and in May 2013, RenaissanceRe raised \$275.0 million through the issuance of 11 million Series E Preference Shares at \$25 per share. On June 27, 2013, RenaissanceRe redeemed 5 million Series C Preference Shares for \$125.0 million plus accrued and unpaid dividends thereon. Following the redemption, 5 million Series C Preference Shares remain outstanding. In June 2018, RenaissanceRe raised \$250.0 million through the issuance of 10,000 Series F Preference Shares at \$25,000 share (equivalent to 10,000,000 Depositary Shares, each of which represents a 1/1,000th interest in a Series F Preference Share).

The Series E Preference Shares and the remaining Series C Preference Shares may be redeemed at any time at \$25 per share plus declared and unpaid dividends at RenaissanceRe's option. The Series F Preference Shares may be redeemed at \$25,000 per share (equivalent to \$25 per Depositary Share), plus declared and unpaid dividends, at RenaissanceRe's option on or after June 30, 2023, provided that no redemption may occur prior to June 30, 2028 unless certain redemption requirements are met.

Dividends on the Series C Preference Shares are cumulative from the date of original issuance and are payable quarterly in arrears at 6.08% per annum, when, if, and as declared by the Board of Directors. Dividends on the Series E Preference Shares are payable from the date of original issuance on a non-cumulative basis, only when, as and if declared by the Board of Directors, quarterly in arrears at 5.375% per annum. Dividends on the Series F Preference Shares are payable on a non-cumulative basis, only when, as and if declared by the Board of Directors, quarterly in arrears at 5.750% per annum. Unless certain dividend payments are made on the preference shares, RenaissanceRe will be restricted from paying any dividends on its common shares. As stated above, the Board of Directors approved the payment of quarterly dividends on the Series C Preference Shares, Series E Preference Shares and Series F

Preference Shares in the amounts and on the quarterly record dates and dividend payment dates set forth in the prospectus supplement and Certificate of Designation for the applicable series of preference shares, unless and until further action is taken by the Board of Directors.

The preference shares have no stated maturity and are not convertible into any other securities of RenaissanceRe. Generally, the preference shares have no voting rights. Whenever dividends payable on the preference shares are in arrears (whether or not such dividends have been earned or declared) in an amount equivalent to dividends for six full dividend periods (whether or not consecutive), the holders of the preference shares, voting as a single class regardless of class or series, will have the right to elect two directors to the Board of Directors of RenaissanceRe.

Share Repurchases

The Company's share repurchase program may be effected from time to time, depending on market conditions and other factors, through open market purchases and privately negotiated transactions. On November 10, 2017, RenaissanceRe's Board of Directors approved a renewal of its authorized share repurchase program for an aggregate amount of up to \$500.0 million. Unless terminated earlier by RenaissanceRe's Board of Directors, the program will expire when the Company has repurchased the full value of the common shares authorized. The Company's decision to repurchase common shares will depend on, among other matters, the market price of the common shares and the capital requirements of the Company. During 2019, the Company did not repurchase any of its common shares under the share repurchase program. At December 31, 2019, \$500.0 million remained available for repurchase under the share repurchase program.

NOTE 13. EARNINGS PER SHARE

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

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
(common shares in thousands)			
Numerator:			
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 712,042	\$ 197,276	\$ (244,770)
Amount allocated to participating common shareholders (1)	(8,545)	(2,121)	(457)
Net income (loss) allocated to RenaissanceRe common shareholders	<u>\$ 703,497</u>	<u>\$ 195,155</u>	<u>\$ (245,227)</u>
Denominator:			
Denominator for basic income (loss) per RenaissanceRe common share - weighted average common shares	43,119	39,732	39,854
Per common share equivalents of employee stock options and performance shares	56	23	—
Denominator for diluted income (loss) per RenaissanceRe common share - adjusted weighted average common shares and assumed conversions	<u>43,175</u>	<u>39,755</u>	<u>39,854</u>
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – basic	\$ 16.32	\$ 4.91	\$ (6.15)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	\$ 16.29	\$ 4.91	\$ (6.15)

(1) Represents earnings attributable to holders of unvested shares issued pursuant to the Company's stock compensation plans and to the Company's non-employee directors.

NOTE 14. RELATED PARTY TRANSACTIONS AND MAJOR CUSTOMERS

Tower Hill

The Company has equity interests in the Tower Hill Companies as described in "Note 5. Investments." The Company has entered into reinsurance arrangements with certain subsidiaries and affiliates of Tower Hill and has also entered into reinsurance arrangements with respect to business produced by the Tower Hill

Companies. As part of the acquisition of TMR, the Company acquired certain assumed and ceded reinsurance arrangements with certain subsidiaries and affiliates of Tower Hill and other assumed and ceded reinsurance arrangements with respect to business produced by the Tower Hill Companies. The impact of these reinsurance arrangements is included in the Company's results of operation since the date of acquisition of TMR, March 22, 2019, through December 31, 2019, and on the Company's consolidated balance sheet at December 31, 2019.

During 2019, the Company recorded \$39.8 million (2018 - \$45.5 million, 2017 - \$39.1 million) of gross premiums written assumed from the Tower Hill Companies and its subsidiaries and affiliates. Gross premiums earned totaled \$40.7 million (2018 - \$43.8 million, 2017 - \$35.7 million) and expenses incurred were \$6.1 million (2018 - \$7.1 million, 2017 - \$5.1 million) for 2019. The Company had a net related outstanding receivable balance of \$14.8 million as of December 31, 2019 (2018 - receivable of \$19.3 million). During 2019, the Company assumed net claims and claim expenses of \$37.7 million (2018 - assumed net claims and claim expenses of \$111.2 million, 2017 - assumed net claims and claim expenses of \$94.4 million) and, as of December 31, 2019, had a net reserve for claims and claim expenses of \$71.8 million (2018 - \$98.8 million).

During 2019, the Company recorded \$0.5 million of ceded premium written to the Tower Hill Companies and its subsidiaries and affiliates. Ceded premiums earned totaled \$0.4 million and expenses ceded were \$Nil for 2019. The Company had a net related outstanding payable balance of \$Nil as of December 31, 2019. During 2019, the Company recovered net claims and claim expenses of \$41.8 million and, as of December 31, 2019, had a reinsurance recoverable balance of \$21.8 million.

In addition, the Company received distributions of \$13.4 million from the Tower Hill Companies during 2019 (2018 - \$12.1 million, 2017 - \$8.3 million).

Top Layer Re

During 2019, the Company received distributions from Top Layer Re of \$20.0 million (2018 - \$12.5 million, 2017 - \$20.0 million), and recorded a management fee of \$2.3 million (2018 - \$2.7 million, 2017 - \$2.7 million). The management fee reimburses the Company for services it provides to Top Layer Re.

Broker Concentration

During 2019, the Company received 79.6% of its gross premiums written (2018 - 75.2%, 2017 - 76.4%) from three brokers. Subsidiaries and affiliates of AON, Marsh, and Willis Towers Watson accounted for 41.7%, 27.1% and 10.8%, respectively, of gross premiums written in 2019 (2018 - 40.7%, 24.6% and 9.9%, respectively, 2017 - 42.8%, 23.8% and 9.8%, respectively).

NOTE 15. TAXATION

Under current Bermuda law, RenaissanceRe and its Bermuda subsidiaries are not subject to any income or capital gains taxes. In the event that such taxes are imposed, RenaissanceRe and its Bermuda subsidiaries would be exempted from any such tax until March 2035 pursuant to the Bermuda Exempted Undertakings Tax Protection Act 1966, and Amended Acts of 1987 and 2011, respectively.

RenaissanceRe Finance and its subsidiaries are subject to income taxes imposed by U.S. federal and state authorities and file a consolidated U.S. federal income tax return. Should the U.S. subsidiaries pay a dividend to RenaissanceRe, withholding taxes would apply to the extent of current year or accumulated earnings and profits at an expected tax rate of 5.0%. The Company also has operations in Ireland, the U.K., Singapore, Switzerland and Australia which are subject to income taxes imposed by the respective jurisdictions in which they operate. Withholding taxes would not be expected to apply to dividends paid to RenaissanceRe from its subsidiaries in Ireland, the U.K., Singapore Switzerland and Australia.

The following is a summary of the Company's income (loss) before taxes allocated between domestic and foreign operations:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Domestic			
Bermuda	\$ 861,068	\$ 349,959	\$ (262,827)
Foreign			
U.S.	102,724	(56,261)	(11,897)
Australia	3,390	—	—
Switzerland	14,255	166	—
Ireland	(388)	551	617
Singapore	(6,334)	(3,226)	(12,421)
U.K.	(7,233)	(28,574)	(41,656)
Income (loss) before taxes	<u>\$ 967,482</u>	<u>\$ 262,615</u>	<u>\$ (328,184)</u>

Income tax (expense) benefit is comprised as follows:

<u>Year ended December 31, 2019</u>	<u>Current</u>	<u>Deferred</u>	<u>Total</u>
Total income tax expense	<u>\$ (2,128)</u>	<u>\$ (15,087)</u>	<u>\$ (17,215)</u>
<u>Year ended December 31, 2018</u>			
Total income tax (expense) benefit	<u>\$ (1,668)</u>	<u>\$ 7,970</u>	<u>\$ 6,302</u>
<u>Year ended December 31, 2017</u>			
Total income tax expense	<u>\$ (844)</u>	<u>\$ (25,643)</u>	<u>\$ (26,487)</u>

The Company's expected income tax provision computed on pre-tax income at the weighted average tax rate has been calculated as the sum of the pre-tax income in each jurisdiction multiplied by that jurisdiction's applicable statutory tax rate. Statutory tax rates of 0.0%, 21.0%, 12.5%, 19.0%, 17.0%, 21.2% and 30.0% have been used for Bermuda, the U.S., Ireland, the U.K., Singapore, Switzerland and Australia, respectively.

The Company's effective income tax rate, which it calculates as income tax expense divided by net income before taxes, may fluctuate significantly from period to period depending on the geographic distribution of pre-tax net income (loss) in any given period between different jurisdictions with comparatively higher tax rates and those with comparatively lower tax rates. The geographic distribution of pre-tax net income (loss) can vary significantly between periods due to, but not limited to, the following factors: the business mix of net premiums written and earned; the geographic location, the size and the nature of net claims and claim expenses incurred; the amount and geographic location of operating expenses, net investment income, net realized and unrealized gains (losses) on investments; outstanding debt and related interest expense; and the amount 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 currently written and earned in Bermuda, which does not have a corporate income tax, including the majority of the Company's catastrophe business, which can result in significant volatility to its pre-tax net income (loss) in any given period.

A reconciliation of the difference between the provision for income taxes and the expected tax provision at the weighted average tax rate is as follows:

Year ended December 31,	2019	2018	2017
Expected income tax (expense) benefit	\$ (22,874)	\$ 17,697	\$ 14,216
Nondeductible expenses	(7,059)	(370)	(276)
Change in valuation allowance	(5,481)	(5,255)	(11,718)
Withholding tax	(665)	(1,831)	(216)
Effect of change in tax rate	(262)	(708)	(38,083)
Non-taxable foreign exchange gains (losses)	(4)	586	2,574
Tax exempt income	400	944	3,794
Transfer pricing	2,503	(2,481)	(11)
GAAP to statutory accounting difference	6,553	—	—
Foreign branch adjustments	7,315	—	—
U.S. base erosion and anti-abuse tax	—	(1,271)	—
Other	2,359	(1,009)	3,233
Income tax (expense) benefit	<u>\$ (17,215)</u>	<u>\$ 6,302</u>	<u>\$ (26,487)</u>

As a result of the reduction in the U.S. corporate tax rate from 35% to 21% effective January 1, 2018 pursuant to the Tax Cuts and Jobs Act of 2017, the Company recorded a partial write-down of its U.S. deferred tax asset of \$36.7 million in 2017. This adjustment is included in effect of change in tax rate in the table above.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are presented below:

At December 31,	2019	2018
Deferred tax assets		
Tax loss and credit carryforwards	\$ 111,835	\$ 60,395
Unearned premiums	14,430	10,108
Deferred finance charges	10,160	14,646
Reserve for claims and claim expenses	8,984	17,345
Accrued expenses	7,196	4,292
Deferred underwriting results	4,033	3,514
Premiums receivable	3,412	—
Investments	—	4,427
	<u>160,050</u>	<u>114,727</u>
Deferred tax liabilities		
Deferred acquisition expenses	(16,296)	(11,801)
VOBA	(12,673)	—
Investments	(6,468)	—
Intangible assets	(2,891)	—
Amortization and depreciation	(2,133)	(2,992)
	<u>(40,461)</u>	<u>(14,793)</u>
Net deferred tax asset before valuation allowance	119,589	99,934
Valuation allowance	(75,685)	(35,271)
Net deferred tax asset	<u>\$ 43,904</u>	<u>\$ 64,663</u>

The Company's net deferred tax asset is included in other assets on its consolidated balance sheets.

During 2019, the Company recorded a net increase to the valuation allowance of \$40.4 million (2018 – increase of \$5.3 million, 2017 – increase of \$11.2 million). The Company's net deferred tax asset primarily

relates to net operating loss carryforwards and GAAP versus tax basis accounting differences relating to unearned premiums, deferred finance charges, reserves for claims and claim expenses, accrued expenses, deferred underwriting results, premiums receivable, deferred acquisition expenses, VOBA, investments, intangible assets and amortization and depreciation. The Company's valuation allowance assessment is based on all available information including projections of future GAAP taxable income from each tax-paying component in each tax jurisdiction.

A valuation allowance has been provided against deferred tax assets in the U.S., Ireland, the U.K., Singapore and Switzerland. These deferred tax assets relate primarily to net operating loss carryforwards. The acquired valuation allowance of TMR as of March 22, 2019 was \$35.7 million, the majority of which was established in the U.S.

In the U.S., the Company has net operating loss carryforwards of \$338.6 million. Under applicable law, the U.S. net operating loss carryforwards will begin to expire in 2031. The Company has net operating loss carryforwards of \$115.4 million in the U.K., \$25.4 million in Singapore, \$186.6 million in Switzerland, and \$5.6 million in Ireland. Under applicable law, the U.K., Singapore and Irish net operating losses can be carried forward for an indefinite period, while the net operating losses in Switzerland will begin to expire in 2020.

The Company had a net payment for U.S. federal, Irish, U.K., Singapore, Switzerland and Australia income taxes of \$9.7 million for the year ended 2019 (2018 – net payment of \$0.3 million, 2017 – net payment of \$0.3 million).

The Company has unrecognized tax benefits of \$Nil as of December 31, 2019 (2018 – \$Nil). Interest and penalties related to unrecognized tax benefits would be recognized in income tax expense. At December 31, 2019, interest and penalties accrued on unrecognized tax benefits were \$Nil (2018 – \$Nil). The following filed income tax returns are open for examination with the applicable tax authorities: tax years 2016 through 2018 with the IRS; 2015 through 2018 with Ireland; 2018 with the U.K.; 2015 through 2018 with Singapore; 2018 with Switzerland; and 2015 through 2018 with Australia. The Company does not expect the resolution of these open years to have a significant impact on its results from operations and financial condition.

NOTE 16. SEGMENT REPORTING

The Company's reportable segments are defined as follows: (1) Property, which is comprised of catastrophe and other property reinsurance and insurance written on behalf of the Company's operating subsidiaries and certain joint ventures managed by the Company's ventures unit, and (2) Casualty and Specialty, which is comprised of casualty and specialty reinsurance and insurance written on behalf of the Company's operating subsidiaries and certain joint ventures managed by the Company's ventures unit. In addition to its reportable segments, the Company has an Other category, which primarily includes its strategic investments, investments unit, corporate expenses, capital servicing costs, noncontrolling interests, certain expenses related to acquisitions and the remnants of its former Bermuda-based insurance operations. The results of operations of TMR are reflected in the Company's existing reportable segments for the year ended December 31, 2019 from March 22, 2019.

The Company's Property segment is managed by the Chief Underwriting Officer - Property and the Casualty and Specialty segment is managed by the Chief Underwriting Officer - Casualty and Specialty, each of whom operate under the direction of the Company's Group Chief Underwriting Officer, who in turn reports to the Company's President and Chief Executive Officer.

The Company does not manage its assets by segment; accordingly, net investment income and total assets are not allocated to the segments.

A summary of the significant components of the Company's revenues and expenses by segment is as follows:

Year ended December 31, 2019	Property	Casualty and Specialty	Other	Total
Gross premiums written	\$ 2,430,985	\$ 2,376,765	\$ —	\$ 4,807,750
Net premiums written	\$ 1,654,259	\$ 1,727,234	\$ —	\$ 3,381,493
Net premiums earned	\$ 1,627,494	\$ 1,710,909	\$ —	\$ 3,338,403
Net claims and claim expenses incurred	965,424	1,131,637	(40)	2,097,021
Acquisition expenses	313,761	448,678	(207)	762,232
Operational expenses	139,015	84,546	(828)	222,733
Underwriting income (loss)	\$ 209,294	\$ 46,048	\$ 1,075	256,417
Net investment income			423,833	423,833
Net foreign exchange losses			(2,938)	(2,938)
Equity in earnings of other ventures			23,224	23,224
Other income			4,949	4,949
Net realized and unrealized gains on investments			414,483	414,483
Corporate expenses			(94,122)	(94,122)
Interest expense			(58,364)	(58,364)
Income before taxes and redeemable noncontrolling interests				967,482
Income tax expense			(17,215)	(17,215)
Net income attributable to redeemable noncontrolling interests			(201,469)	(201,469)
Dividends on preference shares			(36,756)	(36,756)
Net income available to RenaissanceRe common shareholders				\$ 712,042
Net claims and claim expenses incurred – current accident year	\$ 968,357	\$ 1,155,519	\$ —	\$ 2,123,876
Net claims and claim expenses incurred – prior accident years	(2,933)	(23,882)	(40)	(26,855)
Net claims and claim expenses incurred – total	\$ 965,424	\$ 1,131,637	\$ (40)	\$ 2,097,021
Net claims and claim expense ratio – current accident year	59.5 %	67.5 %		63.6 %
Net claims and claim expense ratio – prior accident years	(0.2)%	(1.4)%		(0.8)%
Net claims and claim expense ratio – calendar year	59.3 %	66.1 %		62.8 %
Underwriting expense ratio	27.8 %	31.2 %		29.5 %
Combined ratio	87.1 %	97.3 %		92.3 %

Year ended December 31, 2018	Property	Casualty and Specialty	Other	Total
Gross premiums written	\$ 1,760,926	\$ 1,549,501	\$ —	\$ 3,310,427
Net premiums written	\$ 1,055,188	\$ 1,076,714	\$ —	\$ 2,131,902
Net premiums earned	\$ 1,050,831	\$ 925,298	\$ —	\$ 1,976,129
Net claims and claim expenses incurred	497,895	622,320	(197)	1,120,018
Acquisition expenses	177,912	255,079	(2)	432,989
Operational expenses	112,954	64,883	430	178,267
Underwriting income (loss)	\$ 262,070	\$ (16,984)	\$ (231)	244,855
Net investment income			261,866	261,866
Net foreign exchange losses			(12,428)	(12,428)
Equity in earnings of other ventures			18,474	18,474
Other income			5,969	5,969
Net realized and unrealized losses on investments			(175,069)	(175,069)
Corporate expenses			(33,983)	(33,983)
Interest expense			(47,069)	(47,069)
Income before taxes and redeemable noncontrolling interests				262,615
Income tax benefit			6,302	6,302
Net income attributable to redeemable noncontrolling interests			(41,553)	(41,553)
Dividends on preference shares			(30,088)	(30,088)
Net income available to RenaissanceRe common shareholders				\$ 197,276
Net claims and claim expenses incurred – current accident year	\$ 719,185	\$ 671,582	\$ —	\$ 1,390,767
Net claims and claim expenses incurred – prior accident years	(221,290)	(49,262)	(197)	(270,749)
Net claims and claim expenses incurred – total	\$ 497,895	\$ 622,320	\$ (197)	\$ 1,120,018
Net claims and claim expense ratio – current accident year	68.4 %	72.6 %		70.4 %
Net claims and claim expense ratio – prior accident years	(21.0)%	(5.3)%		(13.7)%
Net claims and claim expense ratio – calendar year	47.4 %	67.3 %		56.7 %
Underwriting expense ratio	27.7 %	34.5 %		30.9 %
Combined ratio	75.1 %	101.8 %		87.6 %

<u>Year ended December 31, 2017</u>	<u>Property</u>	<u>Casualty and Specialty</u>	<u>Other</u>	<u>Total</u>
Gross premiums written	\$ 1,440,437	\$ 1,357,110	\$ (7)	\$ 2,797,540
Net premiums written	\$ 978,014	\$ 893,307	\$ 4	\$ 1,871,325
Net premiums earned	\$ 931,070	\$ 786,501	\$ 4	\$ 1,717,575
Net claims and claim expenses incurred	1,297,985	565,026	(1,583)	1,861,428
Acquisition expenses	113,816	233,077	(1)	346,892
Operational expenses	94,194	66,548	36	160,778
Underwriting (loss) income	\$ (574,925)	\$ (78,150)	\$ 1,552	(651,523)
Net investment income			222,209	222,209
Net foreign exchange gains			10,628	10,628
Equity in earnings of other ventures			8,030	8,030
Other income			9,415	9,415
Net realized and unrealized gains on investments			135,822	135,822
Corporate expenses			(18,572)	(18,572)
Interest expense			(44,193)	(44,193)
Loss before taxes and redeemable noncontrolling interests				(328,184)
Income tax expense			(26,487)	(26,487)
Net loss attributable to redeemable noncontrolling interests			132,282	132,282
Dividends on preference shares			(22,381)	(22,381)
Net loss attributable to RenaissanceRe common shareholders				\$ (244,770)
Net claims and claim expenses incurred – current accident year	\$ 1,343,581	\$ 558,843	\$ —	\$ 1,902,424
Net claims and claim expenses incurred – prior accident years	(45,596)	6,183	(1,583)	(40,996)
Net claims and claim expenses incurred – total	\$ 1,297,985	\$ 565,026	\$ (1,583)	\$ 1,861,428
Net claims and claim expense ratio – current accident year	144.3 %	71.1%		110.8 %
Net claims and claim expense ratio – prior accident years	(4.9)%	0.7%		(2.4)%
Net claims and claim expense ratio – calendar year	139.4 %	71.8%		108.4 %
Underwriting expense ratio	22.3 %	38.1%		29.5 %
Combined ratio	161.7 %	109.9%		137.9 %

The following is a summary of the Company's gross premiums written allocated to the territory of coverage exposure:

<u>Year ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
<i>Property</i>			
U.S. and Caribbean	\$ 1,368,205	\$ 978,063	\$ 954,269
Worldwide	643,744	464,311	305,915
Europe	182,544	144,857	49,486
Japan	90,328	71,601	49,821
Worldwide (excluding U.S.) (1)	79,393	66,872	48,182
Australia and New Zealand	32,203	19,273	14,151
Other	34,568	15,949	18,613
Total Property	2,430,985	1,760,926	1,440,437
<i>Casualty and Specialty</i>			
Worldwide	935,626	776,976	686,253
U.S. and Caribbean	1,071,170	667,125	622,757
Worldwide (excluding U.S.) (1)	25,291	31,734	10,104
Europe	227,178	15,296	9,752
Australia and New Zealand	34,053	3,667	4,141
Other	83,447	54,703	24,103
Total Casualty and Specialty	2,376,765	1,549,501	1,357,110
Other category	—	—	(7)
Total gross premiums written	\$ 4,807,750	\$ 3,310,427	\$ 2,797,540

(1) The category "Worldwide (excluding U.S.)" consists of contracts that cover more than one geographic region (other than the U.S.).

NOTE 17. STOCK INCENTIVE COMPENSATION AND EMPLOYEE BENEFIT PLANS

Stock Incentive Compensation Plans and Awards

The Company is authorized to issue restricted stock awards, restricted stock units, performance share awards, stock options and other share-based awards to its employees and directors pursuant to various stock incentive compensation plans.

On May 16, 2016, the Company's shareholders approved the Company's 2016 Long-Term Incentive Plan (the "2016 Long-Term Incentive Plan"). Pursuant to the 2016 Long-Term Incentive Plan, the Company is authorized to issue up to 1,625,000 common shares plus the number of shares that were subject to awards outstanding under the Company's 2001 Stock Incentive Plan, as amended (the "2001 Stock Incentive Plan") and the Company's 2010 Performance-Based Equity Incentive Plan, as amended (the "2010 Performance Plan") as of the effective date of the 2016 Long-Term Incentive Plan that are forfeited, canceled, settled in cash, or otherwise terminated without delivery after the effective date. The 2016 Long-Term Incentive Plan permits the grant of restricted stock awards, restricted stock units, performance share awards (including cash-based performance awards), stock options and other share-based awards to employees, officers, non-employee directors and consultants or advisors of the Company and its affiliates.

The 2001 Stock Incentive Plan, which permitted the grant of stock options, restricted stock awards and other share-based awards to employees of RenaissanceRe and its subsidiaries, expired in accordance with its terms on February 6, 2016 and no additional awards may be made under this plan. All outstanding awards made under the 2001 Stock Incentive Plan will vest no later than March 1, 2020. The 2010 Performance Plan, pursuant to which the Company granted performance share awards, was terminated on May 16, 2016 upon approval of the 2016 Long-Term Incentive Plan, and no additional awards will be made under this plan. All outstanding awards made under the 2010 Performance Share Plan vested no later than February 7, 2018. The terms and conditions of outstanding awards granted under the 2001 Share Incentive Plan and the 2010 Performance Plan were not affected by the respective expiration and termination of these plans.

In 2010, the Company instituted a cash settled restricted stock unit ("CSRSU") plan, the 2010 Restricted Stock Unit Plan, which allowed for the issuance of equity awards in the form of CSRSUs. In November 2016, the 2010 Restricted Stock Plan was terminated and replaced with a new cash settled restricted stock unit plan, the 2016 Restricted Stock Unit Plan. The terms and conditions of CSRSU awards outstanding under the 2010 Restricted Stock Unit Plan at the time of termination were not affected, but no additional awards will be made under the 2010 Restricted Stock Unit Plan. All outstanding awards made under the 2010 Restricted Stock Unit Plan will vest no later than March 1, 2020.

Stock Options

The Company has not granted stock options since 2008. Stock options were granted pursuant to the 2001 Stock Incentive Plan and allowed for the purchase of RenaissanceRe common shares at a price that was equal to, or not less than, the fair market value of RenaissanceRe common shares as of the effective grant date. Stock options generally vested over 4 years and expired 10 years from the grant date. The final stock options outstanding were exercised during the year ended December 31, 2018.

Restricted Stock Awards

Restricted stock awards granted periodically under the 2001 Stock Incentive Plan and the 2016 Long-Term Incentive Plan generally vest ratably over a four year period. The Company has also granted restricted stock awards to non-employee directors, which generally vest ratably over a three year period.

Performance Share Awards

Performance share awards have been granted periodically to certain of the Company's executive officers pursuant to the 2010 Performance Plan, 2001 Share Incentive Plan and 2016 Long-Term Incentive Plan. Outstanding performance share awards are subject to vesting conditions based on both continued service and the attainment of pre-established performance goals. If performance goals are achieved, the performance share awards will vest up to a maximum of 250% of target. Performance share awards generally cliff vest at the end of a three-year vesting period based on the attainment of annual performance goals over the vesting period. The performance share awards granted prior to May 2018 have a market condition, which is the Company's total shareholder return relative to its peer group. The performance share awards granted in May 2018 and March 2019 have a performance condition, which is the percentage change in the Company's tangible book value per common share plus accumulated dividends, or, in the event of a change in control, a market condition, which is the Company's total shareholder return relative to its peer group. Total shareholder return is calculated in accordance with the terms of the applicable award agreement and is generally based on the average closing share price over the 20 trading days preceding and including the start and end of the annual performance period. The percentage change in tangible book value per share plus accumulated dividends is calculated in accordance with the terms of the applicable award agreement.

Cash Settled Restricted Stock Units

CSRSUs are liability awards with fair value measurement based on the fair market value of the Company's common shares at the end of each reporting period. CSRSUs granted periodically pursuant to the 2010 Restricted Stock Unit Plan and 2016 Restricted Stock Unit Plan generally vest ratably over 4 years.

Valuation Assumptions

Performance Share Awards Granted Prior to May 2018

The fair value of performance share awards granted prior to May 2018 is measured on the grant date using a Monte Carlo simulation model which requires the following inputs: share price; expected volatility; expected term; expected dividend yield; and risk-free interest rates. The following are the weighted average-assumptions used to estimate the fair value for all performance share awards issued in each respective year.

Year ended December 31,	Performance Share Awards	
	2019	2018
Expected volatility (1)	n/a	15.8%
Expected term (in years)	n/a	n/a
Expected dividend yield	n/a	n/a
Risk-free interest rate (1)	n/a	1.85% - 2.36%

(1) The expected volatility and risk-free interest rate applied are specific to each tranche of performance share awards.

Expected volatility: The expected volatility is estimated by the Company based on RenaissanceRe's historical stock volatility.

Expected term: The expected term is not applicable as the length of the performance periods are fixed and not subject to future employee behavior. Each tranche of the performance share awards has a one year period during which performance is measured.

Expected dividend yield: The expected dividend yield is not applicable to performance share awards as dividends are paid at the end of the vesting period and do not affect the value of the performance shares.

Risk-free interest rate: The risk free rate is estimated based on the yield on a U.S. treasury zero-coupon issued with a remaining term equal to the vesting period of the performance share awards.

For performance share awards granted before May 2018, the total cost of the performance share awards is determined on the grant date based on the fair value calculated by the Monte Carlo simulation model. The Company recognizes cost equal to fair value per performance share award multiplied by the target number of performance share awards on the grant date. The cost is then amortized as an expense over the requisite service period. The Company has elected to recognize forfeitures as they occurred rather than estimating service-based forfeitures over the requisite service period.

Performance Share Awards Granted in May 2018 and March 2019

For performance share awards granted in May 2018 and March 2019, the performance metric relates to the percentage change in tangible book value per share plus accumulated dividends which is classified as a performance condition under FASB ASC Topic *Compensation - Stock Compensation*. As a result, the fair value of the performance share awards is determined based on the fair market value of RenaissanceRe's common shares on the grant date. The estimated fair value of performance share awards is amortized as an expense over the requisite service period.

Restricted Stock Awards

The fair value of restricted stock awards is determined based on the fair market value of RenaissanceRe's common shares on the grant date. The estimated fair value of restricted stock awards is amortized as an expense over the requisite service period. The Company has elected to recognize forfeitures as they occurred rather than estimating service-based forfeitures over the requisite service period.

Cash Settled Restricted Stock Units

CSRSUs are revalued at the end of each quarterly reporting period based on the then fair market value of RenaissanceRe's common shares. The total cost is adjusted each quarter for unvested CSRSUs to reflect the current share price, and this total cost is amortized as an expense over the requisite service period. The

Company has elected to recognize forfeitures as they occurred rather than estimating service-based forfeitures over the requisite service period.

Summary of Stock Compensation Activity

The following is a summary of activity under the Company's stock compensation plans.

Stock Options

	Weighted options outstanding	Weighted average exercise price	Weighted average remaining contractual life	Aggregate intrinsic value	Range of exercise prices
Balance, December 31, 2016	206,795	\$ 53.17	0.9	\$ 17,174	\$50.71 - \$59.66
Options granted	—	—			—
Options forfeited	—	—			
Options expired	—	—			
Options exercised	(174,794)	53.04		\$ 15,945	\$50.71 - \$59.66
Balance, December 31, 2017	32,001	\$ 53.86	0.2	\$ 2,295	\$ 53.86
Options granted	—	—			—
Options forfeited	—	—			
Options expired	—	—			
Options exercised	(32,001)	53.86		\$ 2,320	\$ 53.86
Balance, December 31, 2018	—	\$ —	0.0	\$ —	\$ —

Cash Settled Restricted Stock Units

	Number of shares
Nonvested at December 31, 2016	308,344
Awards granted	98,067
Awards vested	(122,088)
Awards forfeited	(21,993)
Nonvested at December 31, 2017	262,330
Awards granted	—
Awards vested	(108,344)
Awards forfeited	(7,069)
Nonvested at December 31, 2018	146,917
Awards granted	—
Awards vested	(80,012)
Awards forfeited	(3,161)
Nonvested at December 31, 2019	63,744

Performance Share Awards

	Number of shares (1)	Weighted average grant-date fair value
Nonvested at December 31, 2016	211,381	\$ 44.63
Awards granted	64,947	\$ 65.27
Awards vested	(62,499)	\$ 43.51
Awards forfeited	(46,156)	
Nonvested at December 31, 2017	167,673	\$ 53.11
Awards granted	83,475	\$ 60.69
Awards vested	(16,456)	\$ 53.79
Awards forfeited	(82,241)	
Nonvested at December 31, 2018	152,451	\$ 57.21
Awards granted	58,050	\$ 146.10
Awards vested	(21,730)	\$ 49.90
Awards forfeited	(43,924)	
Nonvested at December 31, 2019	144,847	\$ 94.70

(1) For performance share awards, the number of shares is stated at the maximum number that can be attained if the performance conditions are fully met. Forfeitures represent shares forfeited due to vesting below the maximum attainable as a result of the Company not fully meeting the performance conditions.

Restricted Stock Awards

	Employee restricted stock awards		Non-employee director restricted stock awards		Total restricted stock awards	
	Number of shares	Weighted average grant date fair value	Number of shares	Weighted average grant date fair value	Number of shares	Weighted average grant date fair value
Nonvested at December 31, 2016	402,170	\$ 103.34	25,545	\$ 107.95	427,715	\$ 103.61
Awards granted	116,345	148.66	12,193	150.05	128,538	148.79
Awards vested	(185,478)	100.17	(17,612)	110.66	(203,090)	101.08
Awards forfeited	—	—	—	—	—	—
Nonvested at December 31, 2017	333,037	\$ 120.93	20,126	\$ 131.09	353,163	\$ 121.51
Awards granted	255,799	132.70	12,169	127.29	267,968	132.79
Awards vested	(139,454)	112.70	(9,761)	123.59	(149,215)	113.41
Awards forfeited	(1,642)	134.38	—	—	(1,642)	134.38
Nonvested at December 31, 2018	447,740	\$ 130.37	22,534	\$ 132.29	470,274	\$ 130.46
Awards granted	242,832	146.92	11,444	147.43	254,276	146.94
Awards vested	(165,245)	124.71	(12,972)	131.88	(178,217)	125.23
Awards forfeited	(14,467)	136.16	—	—	(14,467)	136.16
Nonvested at December 31, 2019	510,860	\$ 139.91	21,006	\$ 140.79	531,866	\$ 139.94

There were 1.3 million shares available for issuance under the 2016 Long-Term Incentive Plan at December 31, 2019 and no shares available for issuance under the 2001 Stock Incentive Plan or 2010 Performance Share Plan at December 31, 2019.

The aggregate fair value of restricted stock awards, performance share awards and CSRSUs vested during 2019 was \$41.6 million (2018 – \$37.2 million, 2017 – \$56.9 million). Cash in the amount of \$Nil was received from employees as a result of employee stock option exercises during 2019 (2018 – \$Nil, 2017 –

\$Nil). In connection with share vestings and option exercises, there was a \$0.2 million excess windfall tax benefit realized by the Company in 2019 (2018 – \$Nil, 2017 – \$Nil). RenaissanceRe issues new shares upon the exercise of an option.

The total stock compensation expense recognized in the Company's consolidated statements of operations during 2019 was \$41.4 million (2018 – \$35.7 million, 2017 – \$37.2 million). As of December 31, 2019, there was \$52.6 million of total unrecognized compensation cost related to restricted stock awards, \$5.4 million related to CSRSUs and \$7.7 million related to performance share awards, which will be recognized, on a weighted average basis, during the next 1.7, 0.9 and 1.4 years, respectively.

All of the Company's employees are eligible for defined contribution pension plans. Contributions are primarily based upon a percentage of eligible compensation. The Company contributed \$4.9 million to its defined contribution pension plans in 2019 (2018 – \$4.1 million, 2017 – \$4.4 million).

NOTE 18. STATUTORY REQUIREMENTS

The Company's (re)insurance operations are subject to insurance laws and regulations in the jurisdictions in which they operate, the most significant of which currently include Bermuda, Switzerland, the U.K. and the U.S. These regulations include certain restrictions on the amount of dividends or other distributions, such as loans or cash advances, available to shareholders without prior approval of the respective regulatory authorities.

Group Supervision

The Bermuda Monetary Authority ("BMA") is the group supervisor of the Company. Under the Insurance Act 1978, amendments thereto and related regulations of Bermuda (collectively, the "Insurance Act"), the Company shall ensure that it can meet its minimum solvency margin ("MSM"), defined as the prescribed minimum amount by which the value of the assets of the Company must exceed the value of its liabilities, the breach of which represents an unacceptable level of risk and triggers the strongest supervisory actions.

In addition, the Company is required to maintain statutory economic capital and surplus at a level equal to or in excess of its enhanced capital requirement ("ECR") which is established by reference to the Bermuda Solvency Capital Requirement (the "BSCR") model. The BSCR is a mathematical model designed to give the BMA robust methods for determining an insurer's capital adequacy. The ECR is equal to the greater of the MSM or required capital calculated by reference to the BSCR. Effective January 1, 2016, the BMA embedded the Economic Balance Sheet ("EBS") framework in the Bermuda legislative and regulatory regime. The EBS is an input to the BSCR which determines the Company's ECR. The EBS regime prescribes the use of financial statements prepared in accordance with GAAP as the basis on which statutory financial statements are prepared, and those statutory financial statements form the starting basis for the EBS.

The BMA has established a target capital level ("TCL") which is set at 120% of the ECR. While the Company is not required to maintain statutory economic capital and surplus at this level, it serves as an early warning signal for the BMA, and failure to meet the TCL may result in additional reporting requirements or increased regulatory oversight. The Company is currently completing its 2019 group BSCR, which must be filed with the BMA on or before May 31, 2020, and at this time, the Company believes it will exceed the target level of required statutory economic capital and surplus.

The statutory capital and surplus, required minimum statutory capital and surplus and unrestricted net assets of the Company's regulated insurance operations in its most significant regulatory jurisdictions are detailed below:

At December 31,	Bermuda (1)		Switzerland (2)		U.K. (3) (4)		U.S.	
	2019	2018	2019	2018	2019	2018	2019	2018
Statutory capital and surplus	\$ 5,325,749	\$ 4,366,089	\$ 580,235	\$ —	\$ 675,864	\$ 519,689	\$ 677,832	\$ 502,803
Required statutory capital and surplus	1,201,529	957,650	465,900	—	675,864	519,689	397,447	306,628
Unrestricted net assets	1,107,586	931,387	102,943	—	—	—	46,630	31,228

- (1) The Company's Bermuda-domiciled insurance subsidiaries' capital and surplus is based on the relevant insurer's statutory financial statements and required statutory capital and surplus is based on the MSM.
- (2) RenaissanceRe Europe's statutory capital and surplus and required statutory capital and surplus incorporate a full year of statutory net loss and risk capital, respectively.
- (3) With respect to statutory capital and surplus and required statutory capital and surplus, and as described below, underwriting capacity of a member of Lloyd's must be supported by providing a deposit in the form of cash, securities or letters of credit, which are referred to as Funds at Lloyd's ("FAL"). FAL is determined by Lloyd's and is based on Syndicate 1458's solvency and capital requirements as calculated through its internal model.
- (4) Syndicate 1458 is capitalized by its FAL, with the related assets not held on its balance sheet. As such, unrestricted net assets is not applicable to Syndicate 1458; however, the Company can make an application to obtain approval from Lloyd's to have funds released to RenaissanceRe from Syndicate 1458, subject to passing a Lloyd's release test.

Statutory net income (loss) of the Company's regulated insurance operations in its most significant regulatory jurisdictions are detailed below:

	Statutory Net Income (Loss)			
	Bermuda	Switzerland	U.K.	U.S.
Year ended December 31, 2019	\$ 657,182	\$ (14,679)	\$ (666,595)	\$ 37,827
Year ended December 31, 2018	326,386	—	(6,692)	25,851
Year ended December 31, 2017	(334,142)	—	(57,050)	(3,627)

The difference between statutory financial statements and statements prepared in accordance with GAAP varies by jurisdiction; however, the primary difference is that for the Company's regulated entities the statutory financial statements generally do not reflect goodwill and intangible assets. Also, in the U.S., fixed maturity investments are generally recorded at amortized cost and deferred income tax is charged directly to equity. In the U.S. deferred acquisition costs are generally not reflected in the statutory financial statements. In Switzerland, currency translation adjustment losses are directly charged to net income or loss, while translation gains are not admissible and reflected as translation reserve on the statutory balance sheet. In addition, fixed maturity investments are carried at the lower of amortized cost and market value and recognition of equalization reserves is allowed. The prudence principle standard also allows for valuating certain assets below their nominal value. None of the Company's insurance subsidiaries used permitted practices that prevented the trigger of a regulatory event during the years ended December 31, 2019, 2018 and 2017.

Dividend Restrictions of RenaissanceRe

As a Bermuda-domiciled holding company, RenaissanceRe has limited operations of its own and its assets consist primarily of investments in subsidiaries, and to a degree, cash and securities. Accordingly, RenaissanceRe's future cash flows largely depend on the availability of dividends or other statutorily permissible payments from subsidiaries. The ability to pay such dividends is limited by the applicable laws and regulations of the various countries and states in which these subsidiaries operate, including, among others, Bermuda, Switzerland, the U.S., the U.K. and Ireland. RenaissanceRe's ability to pay dividends and distribute capital to shareholders is limited by the Bermuda Companies Act 1981, insofar as both before and after the payment, RenaissanceRe must still be able to pay its liabilities as they come due and the realizable value of its assets must be greater than its liabilities.

Bermuda-Domiciled Insurance Entities

Under the Insurance Act, certain subsidiaries of RenaissanceRe are required to prepare and file statutory financial statements. The BMA prescribed the use of financial statements prepared in accordance with GAAP as the basis on which the statutory financial statements are prepared, subject to the application of certain prudential filters. These statutory financial statements are used to prepare the EBS. In addition, Bermuda insurance subsidiaries of RenaissanceRe are required to maintain certain measures of solvency and liquidity and file a BSCR return.

Class 3B and Class 4 Insurers

Under the Insurance Act, RenaissanceRe Specialty U.S. and Vermeer are defined as Class 3B insurers, and Renaissance Reinsurance and DaVinci are classified as Class 4 insurers, and therefore must maintain statutory economic capital and surplus at a level at least equal to its ECR which is the greater of its MSM and the required capital calculated by reference to the BSCR.

Class 3B and Class 4 insurers are prohibited from declaring or paying any dividends if in breach of the required minimum solvency margin or minimum liquidity ratio (the "Relevant Margins") or if the declaration or payment of such dividend would cause the insurer to fail to meet the Relevant Margins. Where an insurer fails to meet its Relevant Margins on the last day of any financial year, it is prohibited from declaring or paying any dividends during the next financial year without the prior approval of the BMA. Further, Class 3B and Class 4 insurers are prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year's statutory balance sheet) unless it files (at least seven days before payment of such dividends) with the BMA an affidavit stating that it will continue to meet its Relevant Margins. Class 3B and Class 4 insurers must obtain the BMA's prior approval for a reduction by 15% or more of the total statutory capital as set forth in its previous year's financial statements. These restrictions on declaring or paying dividends and distributions under the Insurance Act are in addition to the solvency requirements under the Bermuda Companies Act 1981 which apply to all Bermuda companies. In addition, an insurer engaged in general business is also required to maintain the value of its relevant assets at not less than 75% of the amount of its relevant liabilities.

The Company is currently completing its 2019 Bermuda-domiciled statutory filings for Renaissance Reinsurance, DaVinci, RenaissanceRe Specialty U.S. and Vermeer, which must be filed with the BMA on or before April 30, 2020, and at this time, the Company believes each of Renaissance Reinsurance, DaVinci, RenaissanceRe Specialty U.S. and Vermeer will exceed the target level of required statutory economic capital.

SPIs

Under the Insurance Act, Upsilon RFO is considered an SPI. Refer to "Note 11. Variable Interest Entities" for additional information related to Upsilon RFO. Unlike other (re)insurers, such as the Class 3B and Class 4 insurers discussed above, SPIs are fully funded to meet their (re)insurance obligations and are not exposed to insolvency, therefore the application and supervision processes are streamlined to facilitate the transparent structure. Further, the BMA has the discretion to modify such insurer's reporting requirements under the Insurance Act. Like other (re)insurers, the principal representative of an SPI has a duty to inform the BMA in relation to solvency matters, where applicable. Upsilon RFO applied for and received a direction from the BMA, which, subject to specified conditions, modified its filing requirements in respect of statutory financial statements for the years ended December 31, 2019 and 2018.

Switzerland Domiciled Insurance Entity

RenaissanceRe Europe is regulated by the Swiss Financial Market Supervisory Authority ("FINMA") pursuant to the Insurance Supervision Act. Its accounts are prepared in accordance with the Swiss Code of Obligations, the Insurance Supervision Act and the Insurance Supervision Ordinance. RenaissanceRe Europe is obligated to maintain a minimum level of capital based on the Swiss Code of Obligations and Insurance Supervision Act. In addition, it is required to perform a minimum solvency margin calculation based on the Swiss Solvency Test ("SST") regulations as stipulated by the Insurance Supervision Act and the Insurance Supervision Ordinance. The SST is based on an economic view and required capital is derived from a combination of internal and standard models. While the minimum required capital under both the Swiss Code of Obligations and the Insurance Supervision Act might be met, the actual minimum threshold is the target capital as determined from the SST. The dividend amount that RenaissanceRe

Europe is permitted to distribute is restricted to freely distributable reserves which consist of retained earnings and the current year profit. The solvency and capital requirements must still be met following any distribution. RenaissanceRe Europe is currently completing its 2019 statutory basis financial statements, which we expect to file with FINMA on or before April 30, 2020. At December 31, 2019, the Company believes that RenaissanceRe Europe will exceed the minimum solvency and capital requirements required to be maintained under Swiss law.

RenaissanceRe Europe has branches in Australia, Bermuda, the U.K. and the U.S.

RenaissanceRe Europe AG, Australia Branch is regulated by the Australian Prudential Regulation Authority ("APRA") and is authorized to carry on insurance business under subsection 12(2) of the Insurance Act 1973. RenaissanceRe Europe's Australia branch's regulatory reporting is prepared in accordance with the Australian Accounting Standards and APRA Prudential Standards. APRA Prudential Standards require the maintenance of net assets in Australia in excess of a calculated Prescribed Capital Amount ("PCA"). At December 31, 2019, the Company believes the net assets in Australia of RenaissanceRe Europe's Australia branch were above the PCA estimated under the APRA Prudential Standards.

RenaissanceRe Europe AG, Bermuda Branch is registered as a Class 3B insurer under the Insurance Act. For the year ended December 31, 2019, it was granted exemptions and modifications to the requirements to file an annual statutory financial return, maintain minimum levels of statutory capital and surplus and file a capital and solvency return. These are the same exemptions and modifications granted for the year ended December 31, 2018.

RenaissanceRe Europe AG, UK Branch is authorized by the Prudential Regulation Authority (the "PRA"), and is regulated by both the PRA and Financial Conduct Authority (the "FCA"). It is subject to the Solvency II regime and applied for and was granted a modification of the rules for the year ended December 31, 2019.

RenaissanceRe Europe AG, US Branch ("RenaissanceRe Europe, US Branch") is required to file statutory basis financial statements prepared in accordance with statutory accounting practices prescribed or permitted by the U.S. insurance regulators. RenaissanceRe Europe, US Branch, whose port of entry is New York, is subject to statutory accounting principles as defined by the National Association of Insurance Commissions ("NAIC"). The NAIC uses a risk-based capital ("RBC") model to monitor and regulate the solvency of licensed life, health, and property and casualty insurance and reinsurance companies. The state of New York has adopted the NAIC's model law.

Laws and regulations in the U.S. establish minimum capital adequacy levels and grant regulators the authority to take specific actions based on the level of impairment. The RenaissanceRe Europe, US Branch's minimum required statutory capital and surplus is based on Company Action Level ("CAL") RBC or minimum requirements per state insurance regulation. The Company is currently completing the 2019 statutory basis financial statements for the RenaissanceRe Europe, US Branch, which must be filed with the state of New York, the NAIC and other state insurance regulators on or before March 1, 2020. At this time, the Company believes that the RenaissanceRe Europe, US Branch will exceed the minimum required statutory capital and surplus.

U.K.-Domiciled Syndicate 1458

RenaissanceRe CCL and Syndicate 1458 are subject to oversight by the Council of Lloyd's. RSML is authorized by the U.K.'s Prudential Regulation Authority and regulated by the Financial Conduct Authority under the Financial Services and Markets Act 2000. Underwriting capacity of a member of Lloyd's must be supported by providing a deposit in the form of cash, securities or letters of credit, which are referred to as FAL. This amount is determined by Lloyd's and is based on Syndicate 1458's solvency and capital requirement as calculated through its internal model. In addition, if the FAL are not sufficient to cover all losses, the Lloyd's Central Fund provides an additional discretionary level of security for policyholders.

U.S.-Domiciled Insurance Entities

Renaissance Reinsurance U.S. is subject to statutory accounting principles as defined by the NAIC. As noted above, the NAIC uses a RBC model to monitor and regulate the solvency of licensed life, health, and property and casualty insurance and reinsurance companies. Renaissance Reinsurance U.S. is domiciled in Maryland, which has adopted the NAIC's model law.

Laws and regulations in the U.S. establish minimum capital adequacy levels and grant regulators the authority to take specific actions based on the level of impairment. Based on Maryland's adoption of the RBC model of the NAIC, the first level at which action is required is CAL RBC. If Renaissance Reinsurance U.S.'s total adjusted capital is less than CAL RBC (but greater than Regulatory Action Level ("RAL") RBC), then Renaissance Reinsurance U.S. must file an RBC plan with the Maryland Insurance Commissioner (the "Commissioner"). If Renaissance Reinsurance U.S.'s total adjusted capital is less than RAL RBC, then the Commissioner must take certain regulatory actions.

Under Maryland insurance law, Renaissance Reinsurance U.S. must notify the Commissioner within five business days after the declaration of any dividend or distribution, other than an extraordinary dividend or extraordinary distribution, and notify the Commissioner at least ten days prior to the payment or distribution thereof. The Commissioner has the right to prevent payment of such a dividend or such a distribution if the Commissioner determines, in the Commissioner's discretion, that after the payment thereof, the policyholders' surplus of Renaissance Reinsurance U.S. would be inadequate or could cause Renaissance Reinsurance U.S. to be in a hazardous financial condition. Renaissance Reinsurance U.S. must give at least 30 days prior notice to the Commissioner before paying an extraordinary dividend or making an extraordinary distribution. Extraordinary dividends and extraordinary distributions are dividends or distributions which, together with any other dividends and distributions paid during the immediately preceding twelve-month period, would exceed the lesser of:

- 10% of the insurer's statutory policyholders' surplus (as determined under statutory accounting principles) as of December 31 of the prior year; or
- the insurer's net investment income excluding realized capital gains (as determined under statutory accounting principles) for the twelve-month period ending on December 31 of the prior year and pro rata distributions of any class of the insurer's securities, plus any amounts of net investment income (subject to the foregoing exclusions) in the three calendar years prior to the preceding year which have not been paid out as dividends.

At December 31, 2019, Renaissance Reinsurance U.S. had an ordinary dividend capacity of \$46.6 million which can be paid in 2020.

Renaissance Reinsurance U.S. is required to file statutory basis financial statements with the Maryland Insurance Administration ("MIA"), as its domestic regulator, with the NAIC and with insurance regulators in certain other states where it is licensed, authorized or accredited to do business. The operations of Renaissance Reinsurance U.S. are subject to examination by those state insurance regulators at any time. The Company is currently completing the 2019 statutory basis financial statements for Renaissance Reinsurance U.S., which must be filed with the MIA, the NAIC, and other state insurance regulators on or before March 1, 2020. At this time, the Company believes Renaissance Reinsurance U.S. will exceed the minimum required statutory capital and surplus.

Multi-Beneficiary Reinsurance Trusts

Each of Renaissance Reinsurance and DaVinci was approved as a Trusteed Reinsurer in the state of New York and established a multi-beneficiary reinsurance trust ("MBRT") to collateralize its (re)insurance liabilities associated with U.S. domiciled cedants. The MBRTs are subject to the rules and regulations of the state of New York and the respective deed of trust, including but not limited to certain minimum capital funding requirements, investment guidelines, capital distribution restrictions and regulatory reporting requirements. Assets held under trust at December 31, 2019 with respect to the MBRTs totaled \$1.3 billion and \$336.5 million for Renaissance Reinsurance and DaVinci, respectively (2018 – \$1.2 billion and \$385.8 million, respectively), compared to the minimum amount required under U.S. state regulations of \$927.4 million and \$249.4 million, respectively (2018 – \$1.1 billion and \$356.9 million, respectively).

Multi-Beneficiary Reduced Collateral Reinsurance Trusts

Each of Renaissance Reinsurance, RenaissanceRe Europe and DaVinci has been approved as a "certified reinsurer" eligible for collateral reduction in certain states, and are authorized to provide reduced collateral equal to 20%, 20% and 50%, respectively, of their net outstanding insurance liabilities to insurers domiciled in each of those states. Each of Renaissance Reinsurance and DaVinci has established a multi-beneficiary reduced collateral reinsurance trust ("RCT") to collateralize its (re)insurance liabilities associated with cedants domiciled in those states. Because the RCTs were established in New York, they are subject to the

rules and regulations of the state of New York including but not limited to certain minimum capital funding requirements, investment guidelines, capital distribution restrictions and regulatory reporting requirements. Assets held under trust at December 31, 2019 with respect to the RCTs totaled \$51.7 million and \$43.8 million for Renaissance Reinsurance and DaVinci, respectively (2018 - \$50.3 million and \$63.2 million, respectively), compared to the minimum amount required under U.S. state regulations of \$40.3 million and \$40.9 million, respectively (2018 - \$36.8 million and \$26.9 million, respectively).

NOTE 19. DERIVATIVE INSTRUMENTS

From time to time, the Company may enter into derivative instruments such as futures, options, swaps, forward contracts and other derivative contracts primarily to manage its foreign currency exposure, obtain exposure to a particular financial market, for yield enhancement, or for trading and to assume risk. The Company's derivative instruments can be exchange traded or over-the-counter, with over-the-counter derivatives generally traded under International Swaps and Derivatives Association master agreements, which establish the terms of the transactions entered into with the Company's derivative counterparties. In the event a party becomes insolvent or otherwise defaults on its obligations, a master agreement generally permits the non-defaulting party to accelerate and terminate all outstanding transactions and net the transactions' marked-to-market values so that a single sum in a single currency will be owed by, or owed to, the non-defaulting party. Effectively, this contractual close-out netting reduces credit exposure from gross to net exposure. Where the Company has entered into master netting agreements with counterparties, or the Company has the legal and contractual right to offset positions, the derivative positions are generally netted by counterparty and are reported accordingly in other assets and other liabilities. Commencing in 2019, the Company elected to adopt hedge accounting for certain of its derivative instruments used as hedges of a net investment in a foreign operation.

The tables below show the gross and net amounts of recognized derivative assets and liabilities at fair value, including the location on the consolidated balance sheets of the Company's principal derivative instruments:

	Derivative Assets					
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Balance Sheet	Net Amounts of Assets Presented in the Balance Sheet	Balance Sheet Location	Collateral	Net Amount
At December 31, 2019						
<u>Derivative instruments not designated as hedges</u>						
Interest rate futures	\$ 234	\$ 122	\$ 112	Other assets	\$ —	\$ 112
Foreign currency forward contracts (1)	22,702	2,418	20,284	Other assets	—	20,284
Foreign currency forward contracts (2)	1,082	622	460	Other assets	—	460
Credit default swaps	37	—	37	Other assets	—	37
Total return swaps	3,744	—	3,744	Other assets	3,601	143
Equity futures	291	—	291	Other assets	—	291
Total derivative instruments not designated as hedges	28,090	3,162	24,928		3,601	21,327
<u>Derivative instruments designated as hedges</u>						
Foreign currency forward contracts (3)	64	667	(603)	Other assets	—	(603)
Total derivative instruments designated as hedges	64	667	(603)		—	(603)
Total	\$ 28,154	\$ 3,829	\$ 24,325		\$ 3,601	\$ 20,724

	Derivative Liabilities					
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Balance Sheet	Net Amounts of Liabilities Presented in the Balance Sheet	Balance Sheet Location	Collateral Pledged	Net Amount
At December 31, 2019						
<u>Derivative instruments not designated as hedges</u>						
Interest rate futures	\$ 1,545	\$ 122	\$ 1,423	Other liabilities	\$ 1,423	\$ —
Interest rate swaps	50	—	50	Other liabilities	50	—
Foreign currency forward contracts (1)	3,808	28	3,780	Other liabilities	—	3,780
Foreign currency forward contracts (2)	939	622	317	Other liabilities	—	317
Total derivative instruments not designated as hedges	6,342	772	5,570		1,473	4,097
<u>Derivative instruments designated as hedges</u>						
Foreign currency forward contracts (3)	1,818	—	1,818	Other liabilities	—	1,818
Total	\$ 8,160	\$ 772	\$ 7,388		\$ 1,473	\$ 5,915

(1) Contracts used to manage foreign currency risks in underwriting and non-investment operations.

(2) Contracts used to manage foreign currency risks in investment operations.

(3) Contracts designated as hedges of a net investment in a foreign operation.

	Derivative Assets					
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Balance Sheet	Net Amounts of Assets Presented in the Balance Sheet	Balance Sheet Location	Collateral	Net Amount
At December 31, 2018						
<u>Derivative instruments not designated as hedges</u>						
Interest rate futures	\$ 971	\$ 636	\$ 335	Other assets	\$ —	\$ 335
Interest rate swaps	860	—	860	Other assets	—	860
Foreign currency forward contracts (1)	16,459	2,260	14,199	Other assets	—	14,199
Foreign currency forward contracts (2)	3,194	71	3,123	Other assets	—	3,123
Equity futures	1,390	977	413	Other assets	—	413
Total	<u>\$ 22,874</u>	<u>\$ 3,944</u>	<u>\$ 18,930</u>		<u>\$ —</u>	<u>\$ 18,930</u>

	Derivative Liabilities					
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Balance Sheet	Net Amounts of Liabilities Presented in the Balance Sheet	Balance Sheet Location	Collateral Pledged	Net Amount
At December 31, 2018						
<u>Derivative instruments not designated as hedges</u>						
Interest rate futures	\$ 910	\$ 636	\$ 273	Other liabilities	\$ 273	\$ —
Interest rate swaps	506	—	506	Other liabilities	254	252
Foreign currency forward contracts (1)	4,154	—	4,154	Other liabilities	—	4,154
Foreign currency forward contracts (2)	72	71	1	Other liabilities	—	1
Credit default swaps	1,606	—	1,606	Other liabilities	1,605	1
Equity futures	977	977	—	Other liabilities	—	—
Total	<u>\$ 8,225</u>	<u>\$ 1,684</u>	<u>\$ 6,540</u>		<u>\$ 2,132</u>	<u>\$ 4,408</u>

(1) Contracts used to manage foreign currency risks in underwriting and non-investment operations.

(2) Contracts used to manage foreign currency risks in investment operations.

Refer to “Note 5. Investments” for information on reverse repurchase agreements.

The location and amount of the gain (loss) recognized in the Company's consolidated statements of operations related to its principal derivative instruments are shown in the following table:

	Location of gain (loss) recognized on derivatives	Amount of gain (loss) recognized on derivatives		
Year ended December 31,		2019	2018	2017
<u>Derivative instruments not designated as hedges</u>				
Interest rate futures	Net realized and unrealized gains (losses) on investments	\$ 16,848	\$ 6,109	\$ (3,252)
Interest rate swaps	Net realized and unrealized gains (losses) on investments	1,488	(84)	436
Foreign currency forward contracts (1)	Net foreign exchange losses	12,617	3,840	9,628
Foreign currency forward contracts (2)	Net foreign exchange losses	(1,605)	5,736	(916)
Credit default swaps	Net realized and unrealized gains (losses) on investments	7,043	(3,106)	326
Total return swaps	Net realized and unrealized gains (losses) on investments	12,155	—	—
Equity futures	Net realized and unrealized gains (losses) on investments	21,357	(515)	—
Total derivative instruments not designated as hedges		69,903	11,980	6,222
<u>Derivative instruments designated as hedges</u>				
Foreign currency forward contracts (3)	Accumulated other comprehensive income (loss)	959	—	—
Total		\$ 70,862	\$ 11,980	\$ 6,222

(1) Contracts used to manage foreign currency risks in underwriting and non-investment operations.

(2) Contracts used to manage foreign currency risks in investment operations.

(3) Contracts designated as hedges of a net investment in a foreign operation.

The Company is not aware of the existence of any credit-risk related contingent features that it believes would be triggered in its derivative instruments that are in a net liability position at December 31, 2019.

Derivative Instruments Not Designated as Hedges

Interest Rate Derivatives

The Company uses interest rate futures and swaps within its portfolio of fixed maturity investments to manage its exposure to interest rate risk, which may result in increasing or decreasing its exposure to this risk.

Interest Rate Futures

The fair value of interest rate futures is determined using exchange traded prices. At December 31, 2019, the Company had \$2.5 billion of notional long positions and \$1.0 billion of notional short positions of primarily Eurodollar and U.S. treasury futures contracts (2018 – \$1.9 billion and \$545.8 million, respectively).

Interest Rate Swaps

The fair value of interest rate swaps is determined using the relevant exchange traded price where available or a discounted cash flow model based on the terms of the contract and inputs, including, where applicable, observable yield curves. At December 31, 2019, the Company had \$27.9 million of notional positions paying a fixed rate and \$25.5 million receiving a fixed rate denominated in U.S. dollar swap contracts (2018 - \$78.4 million and \$32.1 million, respectively).

Foreign Currency Derivatives

The Company's functional currency is the U.S. dollar. The Company writes a portion of its business in currencies other than U.S. dollars and may, from time to time, experience foreign exchange gains and losses in the Company's consolidated financial statements. All changes in exchange rates, with the exception of non-monetary assets and liabilities, are recognized in the Company's consolidated statements of operations.

Underwriting and Non-Investments Operations Related Foreign Currency Contracts

The Company's foreign currency policy with regard to its underwriting operations is generally to hold foreign currency assets, including cash, investments and receivables that approximate the foreign currency liabilities, including claims and claim expense reserves and reinsurance balances payable. When necessary, the Company may use foreign currency forward and option contracts to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities associated with its underwriting operations.

The fair value of the Company's underwriting operations related foreign currency contracts is determined using indicative pricing obtained from counterparties or broker quotes. At December 31, 2019, the Company had outstanding underwriting related foreign currency contracts of \$722.6 million in notional long positions and \$1.2 billion in notional short positions, denominated in U.S. dollars (2018 – \$354.1 million and \$601.2 million, respectively).

Investment Portfolio Related Foreign Currency Forward Contracts

The Company's investment operations are exposed to currency fluctuations through its investments in non-U.S. dollar fixed maturity investments, short term investments and other investments. From time to time, the Company may employ foreign currency forward contracts in its investment portfolio to either assume foreign currency risk or to economically hedge its exposure to currency fluctuations from these investments. The fair value of the Company's investment portfolio related foreign currency forward contracts is determined using an interpolated rate based on closing forward market rates. At December 31, 2019, the Company had outstanding investment portfolio related foreign currency contracts of \$195.6 million in notional long positions and \$61.0 million in notional short positions, denominated in U.S. dollars (2018 – \$121.3 million and \$42.9 million, respectively).

Credit Derivatives

The Company's exposure to credit risk is primarily due to its fixed maturity investments, short term investments, premiums receivable and reinsurance recoverable. From time to time, the Company may purchase credit derivatives to hedge its exposures in the insurance industry, and to assist in managing the credit risk associated with ceded reinsurance. The Company also employs credit derivatives in its investment portfolio to either assume credit risk or hedge its credit exposure.

Credit Default Swaps

The fair value of the Company credit default swaps is determined using industry valuation models, broker bid indications or internal pricing valuation techniques. The fair value of these credit default swaps can change based on a variety of factors including changes in credit spreads, default rates and recovery rates, the correlation of credit risk between the referenced credit and the counterparty, and market rate inputs such as interest rates. At December 31, 2019, the Company had outstanding credit default swaps of \$0.5 million in notional positions to hedge credit risk and \$143.4 million in notional positions to assume credit risk, denominated in U.S. dollars (2018 – \$1.0 million and \$126.2 million, respectively).

Total Return Swaps

During 2019, the Company entered into certain total return swap contracts. The Company uses total return swaps as a means to manage spread duration and credit exposure in its investment portfolio. The fair value of the Company's total return swaps is determined using broker-dealer bid quotations, market-based prices from pricing vendors or valuation models. At December 31, 2019, the Company had \$173.5 million of

notional long positions (long credit) and \$Nil of notional short positions (short credit), denominated in U.S. dollars.

Equity Derivatives

Equity Futures

The Company uses equity derivatives in its investment portfolio from time to time to either assume equity risk or hedge its equity exposure. The fair value of the Company's equity futures is determined using market-based prices from pricing vendors. At December 31, 2019, the Company had \$122.0 million notional long position and \$Nil notional short position of equity futures, denominated in U.S. dollars (2018 - \$44.7 million and \$Nil, respectively).

Derivative Instruments Designated as Hedges of a Net Investment in a Foreign Operation

Foreign Currency Derivatives

Hedges of a Net Investment in a Foreign Operation

In connection with the acquisition of TMR, the Company acquired certain entities with non-U.S. dollar functional currencies, including RenaissanceRe Europe, Australia Branch, which has an Australian dollar functional currency. The Company has entered into foreign exchange forwards to hedge the Australian dollar net investment in foreign operations, on an after-tax basis, from changes in the exchange rate between the U.S. dollar and the Australian dollar.

The Company utilizes foreign exchange forward contracts to hedge the fair value of its net investment in a foreign operation. During 2019, the Company entered into foreign exchange forward contracts that were formally designated as hedges of its investment in RenaissanceRe Europe, Australia Branch. There was no ineffectiveness in these transactions.

The table below provides a summary of derivative instruments designated as hedges of a net investment in a foreign operation, including the weighted average U.S. dollar equivalent of foreign denominated net assets that were hedged and the resulting derivative gain that was recorded in foreign currency translation adjustments, net of tax, within accumulated other comprehensive income (loss) on the Company's consolidated statements of changes in shareholders' equity:

Year ended December 31,	2019	2018
Weighted average of U.S. dollar equivalent of foreign denominated net assets	\$ 81,264	\$ —
Derivative gains (1)	\$ 959	\$ —

(1) Derivative gains from derivative instruments designated as hedges of the net investment in a foreign operation are recorded in foreign currency translation adjustments, net of tax, within accumulated other comprehensive income (loss) on the Company's consolidated statements of changes in shareholders' equity.

NOTE 20. COMMITMENTS, CONTINGENCIES AND OTHER ITEMS

Concentration of Credit Risk

Instruments which potentially subject the Company to concentration of credit risk consist principally of investments, including the Company's equity method investments, cash, premiums receivable and reinsurance balances. The Company limits the amount of credit exposure to any one financial institution and, except for the securities of the U.S. Government and U.S. Government related entities, and money market securities, none of the Company's investments exceeded 10% of shareholders' equity at December 31, 2019. Refer to "Note 7. Reinsurance," for information with respect to reinsurance recoverable.

Employment Agreements

The Board of Directors has authorized the execution of employment agreements between the Company and certain officers. These agreements provide for, among other things, severance payments under certain circumstances, as well as accelerated vesting of options and certain restricted stock grants, upon a change in control, as defined in the employment agreements and the Company's stock incentive plans.

Letters of Credit and Other Commitments

At December 31, 2019, the Company's banks have issued letters of credit of \$1.1 billion in favor of certain ceding companies. In connection with the Company's Top Layer Re joint venture, Renaissance Reinsurance has committed \$37.5 million of collateral to support a letter of credit and is obligated to make a mandatory capital contribution of up to \$50.0 million in the event that a loss reduces Top Layer Re's capital and surplus below a specified level. The letters of credit are secured by cash and investments of similar amounts.

Refer to "Note 9. Debt and Credit Facilities" for additional information related to the Company's debt and credit facilities.

Private Equity and Investment Commitments

The Company has committed capital to private equity investments, other investments and investments in other ventures of \$1.1 billion, of which \$708.4 million has been contributed at December 31, 2019. The Company's remaining commitments to these investments at December 31, 2019 totaled \$411.3 million. These commitments do not have a defined contractual commitment date.

Indemnifications and Warranties

In the ordinary course of its business, the Company may enter into contracts or agreements that contain indemnifications or warranties. Future events could occur that lead to the execution of these provisions against the Company. Based on past experience, management currently believes that the likelihood of such an event is remote.

Leases

The Company's operating leases primarily relate to office space for its global underwriting platforms principally in Bermuda, Australia, Ireland, Singapore, Switzerland, the U.K. and the U.S. These leases expire at various dates through 2029 with a weighted average lease term of 4.0 years. Included in other assets and other liabilities at December 31, 2019 is a right-to-use asset of \$42.8 million and a lease liability of \$42.9 million, respectively, associated with the Company's operating leases and reflected as a result of the Company's adoption of FASB ASC Topic *Leases* (2018 - \$Nil and \$Nil, respectively). During 2019, the Company recorded an operating lease expense of \$8.5 million included in operating expenses (2018 - \$6.1 million).

The Company's financing leases primarily relate to office space in Bermuda with an initial lease term of 20 years, ending in 2028, and a bargain renewal option for an additional 30 years. Included in other assets and other liabilities at December 31, 2019 is a right-to-use asset of \$19.8 million and a lease liability of \$25.1 million, respectively, associated with the Company's finance leases (2018 - \$20.6 million and \$25.6 million, respectively). During 2019, the Company recorded interest expense of \$2.6 million associated with its finance leases (2018 - \$2.6 million) included in other income and amortization of its finance leases right-to-use asset of \$0.9 million included in operating expenses (2018 - \$0.9 million).

Future minimum lease payments under existing operating and finance leases are detailed below, excluding the bargain renewal option on the finance lease related to office space in Bermuda:

	Future minimum lease payments	
	Operating leases	Finance leases
2020	\$ 7,912	\$ 3,336
2021	7,684	3,336
2022	6,967	3,336
2023	3,959	2,830
2024	2,850	2,661
After 2024	11,285	10,129
Future minimum lease payments under existing leases	<u>\$ 40,657</u>	<u>\$ 25,628</u>

Legal Proceedings

The Company and its subsidiaries are 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 or contracts or direct surplus lines insurance policies. In the Company's industry, business litigation may involve allegations of underwriting or claims-handling errors or misconduct, disputes relating to the scope of, or compliance with, the terms of delegated underwriting agreements, employment claims, regulatory actions or disputes arising from the Company's business ventures. The Company's operating subsidiaries are subject to claims litigation involving, among other things, disputed interpretations of policy coverages. Generally, the Company's direct surplus lines insurance operations are subject to greater frequency and diversity of claims and claims-related litigation than its reinsurance operations and, in some jurisdictions, may be subject to direct actions by allegedly injured persons or entities seeking damages from policyholders. These lawsuits, involving or arising out of claims on policies issued by the Company's subsidiaries which are typical to the insurance industry in general and in the normal course of business, are considered in its loss and loss expense reserves. In addition, the Company may from time to time engage in litigation or arbitration related to its claims for payment in respect of ceded reinsurance, including disputes that challenge the Company's ability to enforce its underwriting intent. Such matters could result, directly or indirectly, in providers of protection not meeting their obligations to the Company or not doing so on a timely basis. The Company may also be subject to other disputes from time to time, relating to operational or other matters distinct from insurance or reinsurance claims. Any litigation or arbitration, or regulatory process, contains an element of uncertainty, and the value of an exposure or a gain contingency related to a dispute is difficult to estimate. The Company believes that no individual litigation or arbitration to which it is presently a party is likely to have a material adverse effect on its financial condition, business or operations.

NOTE 21. QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

	Quarter Ended March 31,		Quarter Ended June 30,		Quarter Ended September 30,		Quarter Ended December 31,	
	2019	2018	2019	2018	2019	2018	2019	2018
Revenues								
Gross premiums written	\$ 1,564,295	\$ 1,159,652	\$ 1,476,908	\$ 977,343	\$ 861,068	\$ 625,677	\$ 905,479	\$ 547,755
Net premiums written	\$ 929,031	\$ 663,044	\$ 1,022,965	\$ 604,509	\$ 704,130	\$ 453,255	\$ 725,367	\$ 411,094
(Increase) decrease in unearned premiums	(379,003)	(222,762)	(111,463)	(175,124)	202,618	78,594	244,758	163,519
Net premiums earned	550,028	440,282	911,502	429,385	906,748	531,849	970,125	574,613
Net investment income	81,462	56,476	115,832	71,356	113,844	80,696	112,695	53,338
Net foreign exchange (losses) gains	(2,846)	3,757	9,309	(10,687)	(8,275)	(4,566)	(1,126)	(932)
Equity in earnings of other ventures	4,661	857	6,812	5,826	5,877	7,648	5,874	4,143
Other income (loss)	3,171	(1,242)	922	1,225	1,016	497	(160)	5,489
Net realized and unrealized gains (losses) on investments	170,645	(82,144)	194,003	(17,901)	31,938	13,630	17,897	(88,654)
Total revenues	807,121	417,986	1,238,380	479,204	1,051,148	629,754	1,105,305	547,997
Expenses								
Net claims and claim expenses incurred	227,035	171,703	453,373	60,167	654,520	410,510	762,093	477,638
Acquisition costs	123,951	97,711	227,482	105,052	202,181	109,761	208,618	120,465
Operational expenses	44,933	41,272	59,814	37,543	53,415	40,593	64,571	58,859
Corporate expenses	38,789	6,733	23,847	8,301	13,844	6,841	17,642	12,108
Interest expense	11,754	11,767	15,534	11,768	15,580	11,769	15,496	11,765
Total expenses	446,462	329,186	780,050	222,831	939,540	579,474	1,068,420	680,835
Income (loss) before taxes	360,659	88,800	458,330	256,373	111,608	50,280	36,885	(132,838)
Income tax (expense) benefit	(7,531)	3,407	(9,475)	(4,506)	(3,664)	(1,451)	3,455	8,852
Net income (loss)	353,128	92,207	448,855	251,867	107,944	48,829	40,340	(123,986)
Net (income) loss attributable to redeemable noncontrolling interests	(70,222)	(29,899)	(71,812)	(54,483)	(62,057)	(6,440)	2,622	49,269
Net income (loss) available (attributable) to RenaissanceRe	282,906	62,308	377,043	197,384	45,887	42,389	42,962	(74,717)
Dividends on preference shares	(9,189)	(5,595)	(9,189)	(5,596)	(9,189)	(9,708)	(9,189)	(9,189)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 273,717	\$ 56,713	\$ 367,854	\$ 191,788	\$ 36,698	\$ 32,681	\$ 33,773	\$ (83,906)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – basic	\$ 6.43	\$ 1.42	\$ 8.36	\$ 4.78	\$ 0.83	\$ 0.82	\$ 0.77	\$ (2.10)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	\$ 6.43	\$ 1.42	\$ 8.35	\$ 4.78	\$ 0.83	\$ 0.82	\$ 0.77	\$ (2.10)
Average shares outstanding – basic	42,065	39,552	43,483	39,641	43,462	39,624	43,467	40,111
Average shares outstanding – diluted	42,091	39,599	43,521	39,654	43,537	39,637	43,552	40,111

NOTE 22. CONDENSED CONSOLIDATING FINANCIAL INFORMATION PROVIDED IN CONNECTION WITH OUTSTANDING DEBT OF SUBSIDIARIES

The following tables are provided in connection with outstanding debt of the Company's subsidiaries and present condensed consolidating balance sheets at December 31, 2019 and 2018, condensed consolidating statements of operations, condensed consolidating statements of comprehensive income (loss) and condensed consolidating statements of cash flows for the years ended December 31, 2019, 2018 and 2017, respectively. Each of RNAH and RenaissanceRe Finance is a 100% owned subsidiary of RenaissanceRe and has outstanding debt securities. On June 1, 2017, the Platinum Finance Notes matured and the Company repaid the aggregate principal amount plus applicable accrued interest in full. Platinum Finance was subsequently dissolved on November 30, 2017. Prior to the liquidation of Platinum Finance, it was a 100% owned subsidiary of RenaissanceRe and had outstanding debt securities. For additional information related to the terms of the Company's outstanding debt securities, see "Note 9. Debt and Credit Facilities."

Condensed Consolidating Balance Sheet at December 31, 2019	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Assets						
Total investments	\$ 190,451	\$ 123,792	\$ 288,137	\$ 16,766,409	\$ —	\$ 17,368,789
Cash and cash equivalents	26,460	9,440	8,731	1,334,437	—	1,379,068
Investments in subsidiaries	5,204,260	48,247	1,426,838	—	(6,679,345)	—
Due from subsidiaries and affiliates	10,725	101,579	—	—	(112,304)	—
Premiums receivable	—	—	—	2,599,896	—	2,599,896
Prepaid reinsurance premiums	—	—	—	767,781	—	767,781
Reinsurance recoverable	—	—	—	2,791,297	—	2,791,297
Accrued investment income	—	270	1,171	71,020	—	72,461
Deferred acquisition costs and value of business acquired	—	—	—	663,991	—	663,991
Receivable for investments sold	173	—	—	78,196	—	78,369
Other assets	847,406	10,978	12,211	301,578	(825,957)	346,216
Goodwill and other intangible assets	116,212	—	—	146,014	—	262,226
Total assets	\$ 6,395,687	\$ 294,306	\$ 1,737,088	\$ 25,520,619	\$ (7,617,606)	\$ 26,330,094
Liabilities, Noncontrolling Interests and Shareholders' Equity						
Liabilities						
Reserve for claims and claim expenses	\$ —	\$ —	\$ —	\$ 9,384,349	\$ —	\$ 9,384,349
Unearned premiums	—	—	—	2,530,975	—	2,530,975
Debt	391,475	—	970,255	148,349	(125,974)	1,384,105
Amounts due to subsidiaries and affiliates	6,708	51	102,493	—	(109,252)	—
Reinsurance balances payable	—	—	—	2,830,691	—	2,830,691
Payable for investments purchased	—	—	—	225,275	—	225,275
Other liabilities	26,137	278	14,162	899,682	(8,235)	932,024
Total liabilities	424,320	329	1,086,910	16,019,321	(243,461)	17,287,419
Redeemable noncontrolling interests	—	—	—	3,071,308	—	3,071,308
Shareholders' Equity						
Total shareholders' equity	5,971,367	293,977	650,178	6,429,990	(7,374,145)	5,971,367
Total liabilities, noncontrolling interests and shareholders' equity	\$ 6,395,687	\$ 294,306	\$ 1,737,088	\$ 25,520,619	\$ (7,617,606)	\$ 26,330,094

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Balance Sheet at December 31, 2018	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Assets						
Total investments	\$ 313,360	\$ 77,842	\$ 28,885	\$ 11,465,660	\$ —	\$ 11,885,747
Cash and cash equivalents	3,534	3,350	9,604	1,091,434	—	1,107,922
Investments in subsidiaries	4,414,475	58,458	1,215,663	—	(5,688,596)	—
Due from subsidiaries and affiliates	57,039	101,579	—	—	(158,618)	—
Premiums receivable	—	—	—	1,537,188	—	1,537,188
Prepaid reinsurance premiums	—	—	—	616,185	—	616,185
Reinsurance recoverable	—	—	—	2,372,221	—	2,372,221
Accrued investment income	1,046	310	127	49,828	—	51,311
Deferred acquisition costs	—	—	—	476,661	—	476,661
Receivable for investments sold	203	23,885	—	232,328	—	256,416
Other assets	458,842	22,571	313,636	(1,403,636)	743,714	135,127
Goodwill and other intangible assets	120,476	—	—	116,942	—	237,418
Total assets	\$ 5,368,975	\$ 287,995	\$ 1,567,915	\$ 16,554,811	\$ (5,103,500)	\$ 18,676,196
Liabilities, Redeemable Noncontrolling Interest and Shareholders' Equity						
Liabilities						
Reserve for claims and claim expenses	\$ —	\$ —	\$ —	\$ 6,076,271	\$ —	\$ 6,076,271
Unearned premiums	—	—	—	1,716,021	—	1,716,021
Debt	300,000	—	843,086	148,041	(300,000)	991,127
Amounts due to subsidiaries and affiliates	6,453	217	102,243	—	(108,913)	—
Reinsurance balances payable	—	—	—	1,902,056	—	1,902,056
Payable for investments purchased	—	24	—	380,308	—	380,332
Other liabilities	17,442	5,362	13,918	482,422	(5,535)	513,609
Total liabilities	323,895	5,603	959,247	10,705,119	(414,448)	11,579,416
Redeemable noncontrolling interests	—	—	—	2,051,700	—	2,051,700
Shareholders' Equity						
Total shareholders' equity	5,045,080	282,392	608,668	3,797,992	(4,689,052)	5,045,080
Total liabilities, redeemable noncontrolling interest and shareholders' equity	\$ 5,368,975	\$ 287,995	\$ 1,567,915	\$ 16,554,811	\$ (5,103,500)	\$ 18,676,196

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Operations for the year ended December 31, 2019	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Revenues						
Net premiums earned	\$ —	\$ —	\$ —	\$ 3,338,403	\$ —	\$ 3,338,403
Net investment income	39,629	2,318	7,547	419,502	(45,163)	423,833
Net foreign exchange gains (losses)	7,342	—	—	(10,280)	—	(2,938)
Equity in earnings of other ventures	—	—	3,886	19,338	—	23,224
Other income	—	—	—	4,949	—	4,949
Net realized and unrealized gains on investments	12,393	21,557	151	380,382	—	414,483
Total revenues	59,364	23,875	11,584	4,152,294	(45,163)	4,201,954
Expenses						
Net claims and claim expenses incurred	—	—	—	2,097,021	—	2,097,021
Acquisition expenses	—	—	—	762,232	—	762,232
Operational expenses	7,506	56	38,487	207,981	(31,297)	222,733
Corporate expenses	58,393	—	16	43,413	(7,700)	94,122
Interest expense	18,086	—	37,993	2,285	—	58,364
Total expenses	83,985	56	76,496	3,112,932	(38,997)	3,234,472
(Loss) income before equity in net income of subsidiaries and taxes	(24,621)	23,819	(64,912)	1,039,362	(6,166)	967,482
Equity in net income of subsidiaries	773,419	5,611	99,148	—	(878,178)	—
Income before taxes	748,798	29,430	34,236	1,039,362	(884,344)	967,482
Income tax (expense) benefit	—	(4,872)	6,510	(18,853)	—	(17,215)
Net income	748,798	24,558	40,746	1,020,509	(884,344)	950,267
Net income attributable to redeemable noncontrolling interests	—	—	—	(201,469)	—	(201,469)
Net income attributable to RenaissanceRe	748,798	24,558	40,746	819,040	(884,344)	748,798
Dividends on preference shares	(36,756)	—	—	—	—	(36,756)
Net income available to RenaissanceRe common shareholders	\$ 712,042	\$ 24,558	\$ 40,746	\$ 819,040	\$ (884,344)	\$ 712,042

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Comprehensive Income for the year ended December 31, 2019	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Comprehensive income						
Net income	\$ 748,798	\$ 24,558	\$ 40,746	\$ 1,020,509	\$ (884,344)	\$ 950,267
Change in net unrealized gains on investments, net of tax	2,173	528	764	—	(1,292)	2,173
Foreign currency translation adjustments, net of tax	(2,679)	—	—	—	—	(2,679)
Comprehensive income	748,292	25,086	41,510	1,020,509	(885,636)	949,761
Net income attributable to redeemable noncontrolling interests	—	—	—	(201,469)	—	(201,469)
Comprehensive income attributable to redeemable noncontrolling interests	—	—	—	(201,469)	—	(201,469)
Comprehensive income available to RenaissanceRe	\$ 748,292	\$ 25,086	\$ 41,510	\$ 819,040	\$ (885,636)	\$ 748,292

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Operations for the year ended December 31, 2018	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Revenues						
Net premiums earned	\$ —	\$ —	\$ —	\$ 1,976,129	\$ —	\$ 1,976,129
Net investment income	24,791	2,193	6,219	261,192	(32,529)	261,866
Net foreign exchange losses	(3)	—	—	(12,425)	—	(12,428)
Equity in earnings of other ventures	—	—	3,065	15,409	—	18,474
Other income	—	—	—	5,969	—	5,969
Net realized and unrealized gains (losses) on investments	633	(4,360)	(329)	(171,013)	—	(175,069)
Total revenues	25,421	(2,167)	8,955	2,075,261	(32,529)	2,074,941
Expenses						
Net claims and claim expenses incurred	—	—	—	1,120,018	—	1,120,018
Acquisition expenses	—	—	—	432,989	—	432,989
Operational expenses	7,679	110	34,534	164,605	(28,661)	178,267
Corporate expenses	25,190	—	7	3,103	5,683	33,983
Interest expense	5,683	—	37,019	4,367	—	47,069
Total expenses	38,552	110	71,560	1,725,082	(22,978)	1,812,326
(Loss) income before equity in net income (loss) of subsidiaries and taxes	(13,131)	(2,277)	(62,605)	350,179	(9,551)	262,615
Equity in net income (loss) of subsidiaries	240,495	5,631	9,091	—	(255,217)	—
Income (loss) before taxes	227,364	3,354	(53,514)	350,179	(264,768)	262,615
Income tax benefit (expense)	—	582	6,119	(399)	—	6,302
Net income (loss)	227,364	3,936	(47,395)	349,780	(264,768)	268,917
Net income attributable to redeemable noncontrolling interests	—	—	—	(41,553)	—	(41,553)
Net income (loss) attributable to RenaissanceRe	227,364	3,936	(47,395)	308,227	(264,768)	227,364
Dividends on preference shares	(30,088)	—	—	—	—	(30,088)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 197,276	\$ 3,936	\$ (47,395)	\$ 308,227	\$ (264,768)	\$ 197,276

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Comprehensive Income (Loss) for the year ended December 31, 2018	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Comprehensive income (loss)						
Net income (loss)	\$ 227,364	\$ 3,936	\$ (47,395)	\$ 349,780	\$ (264,768)	\$ 268,917
Change in net unrealized gains on investments, net of tax	(1,657)	(160)	(162)	—	322	(1,657)
Comprehensive income (loss)	225,707	3,776	(47,557)	349,780	(264,446)	267,260
Net income attributable to redeemable noncontrolling interests	—	—	—	(41,553)	—	(41,553)
Comprehensive income attributable to redeemable noncontrolling interests	—	—	—	(41,553)	—	(41,553)
Comprehensive income (loss) available (attributable) to RenaissanceRe	\$ 225,707	\$ 3,776	\$ (47,557)	\$ 308,227	\$ (264,446)	\$ 225,707

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Operations for the year ended December 31, 2017	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	Platinum Underwriters Finance, Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Revenues							
Net premiums earned	\$ —	\$ —	\$ —	\$ —	\$ 1,717,575	\$ —	\$ 1,717,575
Net investment income	23,109	1,947	1,373	3,090	219,490	(26,800)	222,209
Net foreign exchange (losses) gains	(1)	—	—	—	10,629	—	10,628
Equity in (losses) earnings of other ventures	—	—	—	(223)	8,253	—	8,030
Other income	—	—	—	—	9,415	—	9,415
Net realized and unrealized (losses) gains on investments	(1,357)	9,621	4,916	(479)	123,121	—	135,822
Total revenues	21,751	11,568	6,289	2,388	2,088,483	(26,800)	2,103,679
Expenses							
Net claims and claim expenses incurred	—	—	—	—	1,861,428	—	1,861,428
Acquisition expenses	—	—	—	—	346,892	—	346,892
Operational expenses	11,314	103	85	26,063	141,572	(18,359)	160,778
Corporate expenses	18,546	—	—	—	26	—	18,572
Interest expense	1,572	—	2,461	31,657	10,075	(1,572)	44,193
Total expenses	31,432	103	2,546	57,720	2,359,993	(19,931)	2,431,863
(Loss) income before equity in net (loss) income of subsidiaries and taxes	(9,681)	11,465	3,743	(55,332)	(271,510)	(6,869)	(328,184)
Equity in net (loss) income of subsidiaries	(212,708)	756	28,028	9,298	—	174,626	—
(Loss) income before taxes	(222,389)	12,221	31,771	(46,034)	(271,510)	167,757	(328,184)
Income tax (expense) benefit	—	(18,147)	(1,175)	7,163	(14,328)	—	(26,487)
Net (loss) income	(222,389)	(5,926)	30,596	(38,871)	(285,838)	167,757	(354,671)
Net loss attributable to redeemable noncontrolling interests	—	—	—	—	132,282	—	132,282
Net (loss) income attributable to RenaissanceRe	(222,389)	(5,926)	30,596	(38,871)	(153,556)	167,757	(222,389)
Dividends on preference shares	(22,381)	—	—	—	—	—	(22,381)
Net (loss) income (attributable) available to RenaissanceRe common shareholders	\$ (244,770)	\$ (5,926)	\$ 30,596	\$ (38,871)	\$ (153,556)	\$ 167,757	\$ (244,770)

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor, Subsidiary Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Comprehensive Income (Loss) for the year ended December 31, 2017	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	Platinum Underwriters Finance, Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	Consolidating Adjustments (2)	RenaissanceRe Consolidated
Comprehensive (loss) income							
Net (loss) income	\$ (222,389)	\$ (5,926)	\$ 30,596	\$ (38,871)	\$ (285,838)	\$ 167,757	\$ (354,671)
Change in net unrealized gains on investments, net of tax	(909)	(89)	—	(89)	—	178	(909)
Comprehensive (loss) income	(223,298)	(6,015)	30,596	(38,960)	(285,838)	167,935	(355,580)
Net loss attributable to redeemable noncontrolling interests	—	—	—	—	132,282	—	132,282
Comprehensive loss attributable to redeemable noncontrolling interests	—	—	—	—	132,282	—	132,282
Comprehensive (loss) income (attributable) available to RenaissanceRe	\$ (223,298)	\$ (6,015)	\$ 30,596	\$ (38,960)	\$ (153,556)	\$ 167,935	\$ (223,298)

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

(2) Includes Parent Guarantor and Subsidiary Issuer consolidating adjustments.

Condensed Consolidating Statement of Cash Flows for the year ended December 31, 2019	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	RenaissanceRe Consolidated
Cash flows (used in) provided by operating activities					
Net cash (used in) provided by operating activities	\$ (2,861)	\$ 3,872	\$ 366,934	\$ 1,769,250	\$ 2,137,195
Cash flows provided by (used in) investing activities					
Proceeds from sales and maturities of fixed maturity investments trading	306,579	77,798	60,737	16,868,826	17,313,940
Purchases of fixed maturity investments trading	(66,740)	(77,145)	(33,577)	(17,741,881)	(17,919,343)
Net purchases of equity investments trading	—	(3,358)	—	(4,483)	(7,841)
Net (purchases) sales of short term investments	(116,499)	739	(283,717)	(1,501,264)	(1,900,741)
Net purchases of other investments	—	—	—	(202,878)	(202,878)
Net purchases of investments in other ventures	—	—	—	(2,717)	(2,717)
Return of investment from investment in other ventures	—	—	—	11,250	11,250
Net sales of other assets	—	—	—	(4,108)	(4,108)
Dividends and return of capital from subsidiaries	1,400,944	4,350	13,500	(1,418,794)	—
Contributions to subsidiaries	(1,165,607)	—	(125,000)	1,290,607	—
Due (from) to subsidiary	(625,924)	(166)	250	625,840	—
Net purchase of TMR	—	—	—	(276,206)	(276,206)
Net cash provided by (used in) investing activities	(267,247)	2,218	(367,807)	(2,355,808)	(2,988,644)
Cash flows provided by financing activities					
Dividends paid – RenaissanceRe common shares	(59,368)	—	—	—	(59,368)
Dividends paid – preference shares	(36,756)	—	—	—	(36,756)
Issuance of debt, net of expenses	396,411	—	—	—	396,411
Net third-party redeemable noncontrolling interest share transactions	—	—	—	827,083	827,083
Taxes paid on withholding shares	(7,253)	—	—	—	(7,253)
Net cash provided by financing activities	293,034	—	—	827,083	1,120,117
Effect of exchange rate changes on foreign currency cash	—	—	—	2,478	2,478
Net increase (decrease) in cash and cash equivalents	22,926	6,090	(873)	243,003	271,146
Cash and cash equivalents, beginning of period	3,534	3,350	9,604	1,091,434	1,107,922
Cash and cash equivalents, end of period	\$ 26,460	\$ 9,440	\$ 8,731	\$ 1,334,437	\$ 1,379,068

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

Condensed Consolidating Statement of Cash Flows for the year ended December 31, 2018	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	RenaissanceRe Consolidated
Cash flows (used in) provided by operating activities					
Net cash (used in) provided by operating activities	\$ 17,187	\$ 6,315	\$ 62,645	\$ 1,135,554	\$ 1,221,701
Cash flows used in investing activities					
Proceeds from sales and maturities of fixed maturity investments trading	384,818	97,272	56,518	11,046,968	11,585,576
Purchases of fixed maturity investments trading	(520,935)	(72,292)	(55,932)	(11,840,813)	(12,489,972)
Net (purchases) sales of equity investments trading	—	(1,308)	—	15,464	14,156
Net sales (purchases) of short term investments	48,600	(404)	455	(1,485,040)	(1,436,389)
Net purchases of other investments	—	—	—	(199,475)	(199,475)
Net purchases of investments in other ventures	—	—	—	(21,473)	(21,473)
Return of investment from investment in other ventures	—	—	—	8,464	8,464
Net sales of other assets	—	—	—	2,500	2,500
Dividends and return of capital from subsidiaries	672,098	—	—	(672,098)	—
Contributions to subsidiaries	(785,785)	(16,847)	(65,000)	867,632	—
Due to (from) subsidiaries	(227,762)	(9,525)	9,449	227,838	—
Net cash used in investing activities	(428,966)	(3,104)	(54,510)	(2,050,033)	(2,536,613)
Cash flows provided by financing activities					
Dividends paid – RenaissanceRe common shares	(52,841)	—	—	—	(52,841)
Dividends paid – preference shares	(30,088)	—	—	—	(30,088)
RenaissanceRe common share issuance	250,000	—	—	—	250,000
Issuance of preference shares, net of expenses	241,448	—	—	—	241,448
Net third-party redeemable noncontrolling interest share transactions	—	—	—	665,683	665,683
Taxes paid on withholding shares	(7,862)	—	—	—	(7,862)
Net cash provided by financing activities	400,657	—	—	665,683	1,066,340
Effect of exchange rate changes on foreign currency cash	—	—	—	(5,098)	(5,098)
Net (decrease) increase in cash and cash equivalents	(11,122)	3,211	8,135	(253,894)	(253,670)
Cash and cash equivalents, beginning of period	14,656	139	1,469	1,345,328	1,361,592
Cash and cash equivalents, end of period	\$ 3,534	\$ 3,350	\$ 9,604	\$ 1,091,434	\$ 1,107,922

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

Condensed Consolidating Statement of Cash Flows for the year ended December 31, 2017	RenaissanceRe Holdings Ltd. (Parent Guarantor)	RenRe North America Holdings Inc. (Subsidiary Issuer)	Platinum Underwriters Finance, Inc. (Subsidiary Issuer)	RenaissanceRe Finance, Inc. (Subsidiary Issuer)	Other RenaissanceRe Holdings Ltd. Subsidiaries and Eliminations (Non-guarantor Subsidiaries) (1)	RenaissanceRe Consolidated
Cash flows (used in) provided by operating activities						
<i>Net cash (used in) provided by operating activities</i>	\$ 21,118	\$ (8,253)	\$ (2,272)	\$ (347,890)	\$ 1,363,084	\$ 1,025,787
Cash flows provided by (used in) investing activities						
Proceeds from sales and maturities of fixed maturity investments trading	261,601	100,248	289,741	288,900	8,550,179	9,490,669
Purchases of fixed maturity investments trading	(344,463)	(99,568)	(143,991)	(275,778)	(9,229,732)	(10,093,532)
Net (purchases) sales of equity investments trading	—	(1,752)	85,324	—	32,265	115,837
Net sales (purchases) of short term investments	243,571	114	41,299	(493)	79,520	364,011
Net purchases of other investments	—	—	—	—	(19,419)	(19,419)
Return of investment from investment in other ventures	—	—	—	—	20,000	20,000
Dividends and return of capital from subsidiaries	478,496	9,175	—	41,866	(529,537)	—
Contributions to subsidiaries	(669,672)	—	(26,649)	(9,890)	706,211	—
Due to (from) subsidiary	294,419	13	(123)	(509)	(293,800)	—
<i>Net cash provided by (used in) investing activities</i>	263,952	8,230	245,601	44,096	(684,313)	(122,434)
Cash flows (used in) provided by financing activities						
Dividends paid – RenaissanceRe common shares	(51,370)	—	—	—	—	(51,370)
Dividends paid – preference shares	(22,381)	—	—	—	—	(22,381)
RenaissanceRe common share repurchases	(188,591)	—	—	—	—	(188,591)
Net repayment of debt	—	—	(250,000)	—	—	(250,000)
Issuance of debt, net of expenses	—	—	—	295,866	—	295,866
Net third-party redeemable noncontrolling interest share transactions	—	—	—	—	260,475	260,475
Taxes paid on withholding shares	(15,139)	—	—	—	—	(15,139)
<i>Net cash (used in) provided by financing activities</i>	(277,481)	—	(250,000)	295,866	260,475	28,860
Effect of exchange rate changes on foreign currency cash	—	—	—	—	8,222	8,222
Net increase (decrease) in cash and cash equivalents	7,589	(23)	(6,671)	(7,928)	947,468	940,435
Cash and cash equivalents, beginning of year	7,067	162	6,671	9,397	397,860	421,157
Cash and cash equivalents, end of year	\$ 14,656	\$ 139	\$ —	\$ 1,469	\$ 1,345,328	\$ 1,361,592

(1) Includes all other subsidiaries of RenaissanceRe Holdings Ltd. and eliminations.

NOTE 23. SUBSEQUENT EVENTS

Effective January 1, 2020, Upsilon RFO issued \$620.9 million of non-voting preference shares to investors, including \$103.1 million to the Company. Of the total amount, \$512.8 million was received by the Company prior to December 31, 2019. At December 31, 2019, \$462.8 million, representing the amount received from investors other than the Company prior to December 31, 2019, is included in other liabilities on the Company's consolidated balance sheet, and also included in other operating cash flows on the Company's consolidated statements of cash flows for the year ended December 31, 2019. Effective January 1, 2020, the Company's participation in the risks assumed by Upsilon RFO was 16.5%.

Effective January 10, 2020, Mona Lisa Re issued two series of principal-at-risk variable rate notes to investors for a total principal amount of \$400.0 million.

On February 4, 2020, RenaissanceRe Specialty Holdings entered into an agreement to sell its wholly owned subsidiary, RenaissanceRe UK, a U.K. run-off company, to an investment vehicle managed by AXA Liabilities Managers, an affiliate of AXA XL. The sale is expected to close in 2020 and is subject to regulatory approval.

RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
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Schedules other than those listed above are omitted for the reason that they are not applicable.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of RenaissanceRe Holdings Ltd.

We have audited the consolidated financial statements of RenaissanceRe Holdings Ltd. and subsidiaries (the Company) as of December 31, 2019 and 2018, for each of the three years in the period ended December 31, 2019, and have issued our report thereon dated February 7, 2020 included elsewhere in this Form 10-K. Our audits of the consolidated financial statements included the financial statement schedules listed in Item 15 of this Form 10-K (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.

Hamilton, Bermuda
February 7, 2020

SCHEDULE I
RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
SUMMARY OF INVESTMENTS
OTHER THAN INVESTMENTS IN RELATED PARTIES
(THOUSANDS OF UNITED STATES DOLLARS)

	December 31, 2019		
	Amortized Cost or Cost	Fair Value	Amount at which shown in the Balance Sheet
<u>Type of investment:</u>			
Fixed maturity investments			
U.S. treasuries	\$ 4,439,533	\$ 4,467,345	\$ 4,467,345
Agencies	342,162	343,031	343,031
Non-U.S. government	495,465	497,392	497,392
Non-U.S. government-backed corporate	321,303	321,356	321,356
Corporate	3,010,615	3,075,660	3,075,660
Agency mortgage-backed	1,130,746	1,148,499	1,148,499
Non-agency mortgage-backed	282,267	294,604	294,604
Commercial mortgage-backed	489,352	468,698	468,698
Asset-backed	555,971	555,070	555,070
Total fixed maturity investments	<u>\$ 11,067,414</u>	11,171,655	11,171,655
Short term investments		4,566,277	4,566,277
Equity investments		436,931	436,931
Other investments		1,087,377	1,087,377
Investments in other ventures, under equity method		106,549	106,549
Total investments		<u>\$ 17,368,789</u>	<u>\$ 17,368,789</u>

SCHEDULE II
RENAISSANCERE HOLDINGS LTD.
CONDENSED FINANCIAL INFORMATION OF REGISTRANT
RENAISSANCERE HOLDINGS LTD.
BALANCE SHEETS
AT DECEMBER 31, 2019 AND 2018
(PARENT COMPANY)
(THOUSANDS OF UNITED STATES DOLLARS)

	At December 31,	
	2019	2018
Assets		
Fixed maturity investments trading, at fair value - amortized cost \$998 at December 31, 2019 (2018 - \$238,989)	\$ 1,005	\$ 240,443
Short term investments, at fair value	189,446	72,917
Cash and cash equivalents	26,460	3,534
Investments in subsidiaries	5,204,260	4,414,475
Due from subsidiaries	10,725	57,039
Accrued investment income	—	1,046
Receivable for investments sold	173	203
Other assets	847,406	458,842
Goodwill and other intangible assets	116,212	120,476
Total assets	\$ 6,395,687	\$ 5,368,975
Liabilities and Shareholders' Equity		
Liabilities		
Notes and bank loans payable	\$ 391,475	\$ 300,000
Due to subsidiaries	6,708	6,453
Other liabilities	26,137	17,442
Total liabilities	424,320	323,895
Shareholders' Equity		
Preference shares: \$1.00 par value – 16,010,000 shares issued and outstanding at December 31, 2019 (2018 – 16,010,000)	650,000	650,000
Common shares: \$1.00 par value – 44,148,116 shares issued and outstanding at December 31, 2019 (2018 – 42,207,390)	44,148	42,207
Additional paid-in capital	568,277	296,099
Accumulated other comprehensive loss	(1,939)	(1,433)
Retained earnings	4,710,881	4,058,207
Total shareholders' equity	5,971,367	5,045,080
Total liabilities and shareholders' equity	\$ 6,395,687	\$ 5,368,975

SCHEDULE II
RENAISSANCERE HOLDINGS LTD.
CONDENSED FINANCIAL INFORMATION OF REGISTRANT – CONTINUED

RENAISSANCERE HOLDINGS LTD.
STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017
(PARENT COMPANY)
(THOUSANDS OF UNITED STATES DOLLARS)

	Year ended December 31,		
	2019	2018	2017
Revenues			
Net investment income	\$ 39,629	\$ 24,791	\$ 23,109
Net foreign exchange gains (losses)	7,342	(3)	(1)
Net realized and unrealized gains (losses) on investments	12,393	633	(1,357)
Total revenues	59,364	25,421	21,751
Expenses			
Interest expense	18,086	5,683	1,572
Operational expenses	7,506	7,679	11,314
Corporate expenses	58,393	25,190	18,546
Total expenses	83,985	38,552	31,432
Loss before equity in net income (loss) of subsidiaries	(24,621)	(13,131)	(9,681)
Equity in net income (loss) of subsidiaries	773,419	240,495	(212,708)
Net income (loss)	748,798	227,364	(222,389)
Dividends on preference shares	(36,756)	(30,088)	(22,381)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	\$ 712,042	\$ 197,276	\$ (244,770)

RENAISSANCERE HOLDINGS LTD.
STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017
(PARENT COMPANY)
(THOUSANDS OF UNITED STATES DOLLARS)

	Year ended December 31,		
	2019	2018	2017
Comprehensive income (loss)			
Net income (loss)	\$ 748,798	\$ 227,364	\$ (222,389)
Change in net unrealized gains on investments, net of tax	2,173	(1,657)	(909)
Foreign currency translation adjustments, net of tax	(2,679)	—	—
Comprehensive income (loss) available (attributable) to RenaissanceRe	\$ 748,292	\$ 225,707	\$ (223,298)

SCHEDULE II
RENAISSANCERE HOLDINGS LTD.
CONDENSED FINANCIAL INFORMATION OF REGISTRANT – CONTINUED

RENAISSANCERE HOLDINGS LTD.
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017
(PARENT COMPANY)
(THOUSANDS OF UNITED STATES DOLLARS)

	Year ended December 31,		
	2019	2018	2017
<i>Cash flows used in operating activities:</i>			
Net income (loss)	\$ 748,798	\$ 227,364	\$ (222,389)
Less: equity in net (income) loss of subsidiaries	(773,419)	(240,495)	212,708
	(24,621)	(13,131)	(9,681)
<i>Adjustments to reconcile net income (loss) to net cash used in operating activities</i>			
Net realized and unrealized (gains) losses on investments	(12,393)	(633)	1,357
Other	34,153	30,951	29,442
<i>Net cash used in operating activities</i>	(2,861)	17,187	21,118
<i>Cash flows provided by (used in) investing activities:</i>			
Proceeds from maturities and sales of fixed maturity investments trading	306,579	384,818	261,601
Purchases of fixed maturity investments trading	(66,740)	(520,935)	(344,463)
Net (purchases) sales of short term investments	(116,499)	48,600	243,571
Dividends and return of capital from subsidiaries	1,400,944	672,098	478,496
Contributions to subsidiaries	(1,165,607)	(785,785)	(669,672)
Due to (from) subsidiary	(625,924)	(227,762)	294,419
<i>Net cash provided by (used in) investing activities</i>	(267,247)	(428,966)	263,952
<i>Cash flows provided by (used in) financing activities:</i>			
Dividends paid – RenaissanceRe common shares	(59,368)	(52,841)	(51,370)
Dividends paid – preference shares	(36,756)	(30,088)	(22,381)
Issuance of debt, net of expenses	396,411	—	—
RenaissanceRe common share repurchases	—	—	(188,591)
RenaissanceRe common share issuance	—	250,000	—
Issuance of preference shares, net of expenses	—	241,448	—
Taxes paid on withholding shares	(7,253)	(7,862)	(15,139)
<i>Net cash provided by (used in) financing activities</i>	293,034	400,657	(277,481)
<i>Net increase (decrease) in cash and cash equivalents</i>	22,926	(11,122)	7,589
<i>Cash and cash equivalents, beginning of year</i>	3,534	14,656	7,067
<i>Cash and cash equivalents, end of year</i>	\$ 26,460	\$ 3,534	\$ 14,656

SCHEDULE III
RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
SUPPLEMENTARY INSURANCE INFORMATION
(THOUSANDS OF UNITED STATES DOLLARS)

	December 31, 2019			Year ended December 31, 2019					
	Deferred Policy Acquisition Costs	Future Policy Benefits, Losses, Claims and Loss Expenses	Unearned Premiums	Premium Revenue	Net Investment Income	Benefits, Claims, Losses and Settlement Expenses	Amortization of Deferred Policy Acquisition Costs	Other Operating Expenses	Net Written Premiums
Property	\$ 79,795	\$ 4,073,850	\$ 539,183	\$ 1,627,494	\$ —	\$ 965,424	\$ 313,761	\$ 139,015	\$ 1,654,259
Casualty and Specialty	584,196	5,310,059	1,991,792	1,710,909	—	1,131,637	448,678	84,546	1,727,234
Other	—	440	—	—	423,833	(40)	(207)	(828)	—
Total	<u>\$ 663,991</u>	<u>\$ 9,384,349</u>	<u>\$ 2,530,975</u>	<u>\$ 3,338,403</u>	<u>\$ 423,833</u>	<u>\$ 2,097,021</u>	<u>\$ 762,232</u>	<u>\$ 222,733</u>	<u>\$ 3,381,493</u>

	December 31, 2018			Year ended December 31, 2018					
	Deferred Policy Acquisition Costs	Future Policy Benefits, Losses, Claims and Loss Expenses	Unearned Premiums	Premium Revenue	Net Investment Income	Benefits, Claims, Losses and Settlement Expenses	Amortization of Deferred Policy Acquisition Costs	Other Operating Expenses	Net Written Premiums
Property	\$ 66,656	\$ 3,086,254	\$ 379,943	\$ 1,050,831	\$ —	\$ 497,895	\$ 177,912	\$ 112,954	\$ 1,055,188
Casualty and Specialty	410,005	2,985,393	1,336,078	925,298	—	622,320	255,079	64,883	1,076,714
Other	—	4,624	—	—	261,866	(197)	(2)	430	—
Total	<u>\$ 476,661</u>	<u>\$ 6,076,271</u>	<u>\$ 1,716,021</u>	<u>\$ 1,976,129</u>	<u>\$ 261,866</u>	<u>\$ 1,120,018</u>	<u>\$ 432,989</u>	<u>\$ 178,267</u>	<u>\$ 2,131,902</u>

	December 31, 2017			Year ended December 31, 2017					
	Deferred Policy Acquisition Costs	Future Policy Benefits, Losses, Claims and Loss Expenses	Unearned Premiums	Premium Revenue	Net Investment Income	Benefits, Claims, Losses and Settlement Expenses	Amortization of Deferred Policy Acquisition Costs	Other Operating Expenses	Net Written Premiums
Property	\$ 63,583	\$ 2,486,390	\$ 347,032	\$ 931,070	\$ —	\$ 1,297,985	\$ 113,816	\$ 94,194	\$ 978,014
Casualty and Specialty	362,968	2,575,492	1,130,577	786,501	—	565,026	233,077	66,548	893,307
Other	—	18,526	—	4	222,209	(1,583)	(1)	36	4
Total	<u>\$ 426,551</u>	<u>\$ 5,080,408</u>	<u>\$ 1,477,609</u>	<u>\$ 1,717,575</u>	<u>\$ 222,209</u>	<u>\$ 1,861,428</u>	<u>\$ 346,892</u>	<u>\$ 160,778</u>	<u>\$ 1,871,325</u>

SCHEDULE IV
RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
SUPPLEMENTAL SCHEDULE OF REINSURANCE PREMIUMS
(THOUSANDS OF UNITED STATES DOLLARS)

	Gross Amounts	Ceded to Other Companies	Assumed From Other Companies	Net Amount	Percentage of Amount Assumed to Net
Year ended December 31, 2019					
Property and liability premiums earned	\$ 404,525	\$ 1,414,383	\$ 4,348,261	\$ 3,338,403	130%
Year ended December 31, 2018					
Property and liability premiums earned	\$ 292,219	\$ 1,095,886	\$ 2,779,796	\$ 1,976,129	141%
Year ended December 31, 2017					
Property and liability premiums earned	\$ 244,285	\$ 833,929	\$ 2,307,219	\$ 1,717,575	134%

SCHEDULE VI
RENAISSANCERE HOLDINGS LTD. AND SUBSIDIARIES
SUPPLEMENTARY INSURANCE INFORMATION CONCERNING
PROPERTY-CASUALTY INSURANCE OPERATIONS
(THOUSANDS OF UNITED STATES DOLLARS)

	Deferred Policy Acquisition Costs	Reserves for Unpaid Claims and Claim Adjustment Expenses	Discount, if any, Deducted	Unearned Premiums	Earned Premiums	Net Investment Income
Affiliation with Registrant						
Consolidated Subsidiaries						
Year ended December 31, 2019	\$ 663,991	\$ 9,384,349	\$ —	\$ 2,530,975	\$ 3,338,403	\$ 423,833
Year ended December 31, 2018	\$ 476,661	\$ 6,076,271	\$ —	\$ 1,716,021	\$ 1,976,129	\$ 261,866
Year ended December 31, 2017	\$ 426,551	\$ 5,080,408	\$ —	\$ 1,477,609	\$ 1,717,575	\$ 222,209

	Claims and Claim Adjustment Expenses Incurred Related to		Amortization of Deferred Policy Acquisition Costs	Paid Claims and Claim Adjustment Expenses	Net Premiums Written
	Current Year	Prior Year			
Affiliation with Registrant					
Consolidated Subsidiaries					
Year ended December 31, 2019	\$ 2,123,876	\$ (26,855)	\$ 762,232	\$ 1,098,054	\$ 3,381,493
Year ended December 31, 2018	\$ 1,390,767	\$ (270,749)	\$ 432,989	\$ 894,769	\$ 2,131,902
Year ended December 31, 2017	\$ 1,902,424	\$ (40,996)	\$ 346,892	\$ 974,825	\$ 1,871,325

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

The following description sets forth certain material terms and provisions of our securities that are registered under Section 12 of the Securities Exchange Act of 1934, as amended. This description also summarizes certain provisions of our Memorandum of Association (the "Memorandum") and Amended and Restated Bye-Laws (the "Bye-Laws"), and the applicable Certificate of Designation, Preferences and Rights for our Series C Preference Shares, Series E Preference Shares and Series F Preference Shares. Because this summary is not complete, you should refer to our Memorandum and Bye-Laws and the applicable certificate of designation for complete information regarding the provisions of these governing documents, including the definitions of some of the terms used below. Copies of these governing documents are incorporated by reference as exhibits to the Annual Report on Form 10-K of which this Exhibit 4.8 is a part. Whenever we refer to particular sections or defined terms of the Memorandum, the Bye-Laws or the certificates of designation, such sections or defined terms are incorporated herein by reference and the statement in connection with such reference is made is qualified in its entirety by such reference. References to "we," "us" or "our" mean RenaissanceRe Holdings Ltd., excluding, unless otherwise expressly stated or the context requires, our subsidiaries.

COMMON SHARES

Our Common Shares are listed on the New York Stock Exchange under the symbol "RNR." The Common Shares currently issued and outstanding are fully paid and nonassessable within the meaning of applicable Bermuda law. We have authorized the issuance of 225,000,000 Common Shares. There are no provisions of Bermuda law or our Memorandum and Bye-Laws which impose any limitation on the rights of shareholders to hold or vote Common Shares by reason of their not being residents of Bermuda.

Holders of Common Shares have no pre-emptive, redemption, conversion or sinking fund rights. Subject to the voting restrictions set forth below, holders of Common Shares are entitled to one vote per share on all matters submitted to a vote of holders of Common Shares and do not have any cumulative voting rights. In the event of a liquidation, dissolution, or winding-up of the Company, the holders of Common Shares are entitled to share equally and ratably in the assets of the Company, if any, remaining after the payment of all debts and liabilities of the Company and the liquidation preference of any outstanding preference shares. Authorized but unissued Common Shares may be issued at any time and at the discretion of the board of directors of the Company (the "Board") without the approval of the shareholders of the Company with such rights, preferences and limitations as the Board may determine. Holders of Common Shares have one vote for each Common Share held on all matters submitted to a vote on a poll of such holders. Most matters to be approved by holders of Common Shares require approval by a simple majority vote. All matters relating to a liquidation or sale of all or substantially all of the assets of the Company shall require the affirmative vote of a majority of the voting rights attached to all issued and outstanding capital shares of the Company entitled to vote thereon. All matters relating to an amalgamation or other reorganization of the Company with or into another company (other than "short-form" amalgamations pursuant to section 107 of the Companies Act 1981 of Bermuda) shall require the affirmative vote of a majority of all issued and outstanding capital shares of the Company. All matters relating to a merger by the Company into another company (other than "short-form" mergers pursuant to section 107 of the Companies Act 1981 of Bermuda) shall require the approval of the holders of three-fourths of the Common Shares present in person or by proxy at a meeting and voting thereon.

The holders of Common Shares will receive such dividends, if any, as may be declared by the Board out of funds legally available for such purposes. Under Bermuda law, a company may not declare or pay a dividend, or make a distribution out of contributed surplus, if there are reasonable grounds for believing that (i) the company is, or would after the payment be, unable to pay its liabilities as they

become due or (ii) the realizable value of the company's assets would thereby be less than the aggregate of its liabilities and its issued share capital and share premium accounts.

Our registrar and transfer agent for our Common Shares is Computershare Shareowner Services LLC.

SERIES C PREFERENCE SHARES

Currently, 5,000,000 of our 6.08% Series C Preference Shares are outstanding. The Series C Preference Shares are listed on the New York Stock Exchange under the symbol "RNRPRC." The Series C Preference Shares currently issued and outstanding are fully paid and nonassessable within the meaning of applicable Bermuda law. Because the following summary of the terms of the Series C Preference Shares is not complete, you should refer to the Memorandum, the Bye-Laws and the applicable Certificate of Designation, Preferences and Rights for complete information regarding the terms of the Series C Preference Shares.

General. The holders of Series C Preference Shares have no preemptive rights with respect to any of our common shares or any of our other securities convertible into or carrying rights or options to purchase any such shares. The Series C Preference Shares are not subject to any sinking fund or other obligation on our part to redeem or retire the Series C Preference Shares. Unless we redeem them, the Series C Preference Shares will have a perpetual term with no maturity. The Series C Preference Shares rank *pari passu* to our Series E Preference Shares and Depositary Shares (each representing 1/1000th interest in a Series F Preference Share), and senior to our common shares with respect to payment of dividends and amounts upon liquidation, dissolution or winding-up.

Dividends. Dividends on the Series C Preference Shares are cumulative from the date of original issuance and are payable when, as and if declared by our Board of Directors, quarterly in arrears, in an amount per share equal to 6.08% of the liquidation preference per annum. Such dividends will accrue on each Series C Preference Share from the first day of the dividend period in which such share is issued or from such other date as the Board may fix for such purpose.

No dividends will be paid upon any shares of any class or series of our shares ranking on a parity with the Series C Preference Shares with respect to the payment of dividends and amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Parity Shares") (other than partial dividends to be shared *pro rata* by the holders of Parity Shares and Series C Preference Shares) unless full cumulative dividends have been paid or declared and set apart for payment on the Series C Preference Shares for all past dividend periods. No dividends will be paid upon any common shares or other shares of any class or series of our shares ranking junior to the Series C Preference Shares with respect to either the payment of dividends or amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Junior Shares") unless full cumulative dividends have been paid or declared and set apart for payment on the Series C Preference Shares and any Parity Shares for all past dividend periods and for the current dividend period, subject to certain exceptions.

Liquidation. In case of our voluntary or involuntary liquidation, dissolution or winding up, the holders of Series C Preference Shares will be entitled to receive from our assets legally available for distribution to shareholders a liquidation preference of \$25 per share, plus accrued and unpaid dividends (whether or not earned or declared), if any, to the date of liquidation, without interest.

It is possible that, in case of our voluntary or involuntary liquidation, dissolution or winding up, our assets could be insufficient to pay the holders of all of the classes or series of preference shares then outstanding the full, or any, amounts to which they may be entitled. In that circumstance, the holders of Series C Preference Shares and any Parity Shares will share ratably in such assets in accordance with

the respective amounts that would be payable on such Series C Preference Shares and Parity Shares if all amounts payable thereon were paid in full.

Our amalgamation, consolidation or merger with or into any other corporation, or a sale of all or substantially all of our assets, or a statutory share exchange, will not be deemed to constitute a liquidation, dissolution or winding up.

Redemption. We may redeem the Series C Preference Shares, in whole or in part, at any time upon not less than 30 nor more than 60 days' written notice, at a redemption price of \$25 per share, plus accrued and unpaid dividends, if any, to the date of redemption, without interest. The Series C Preference Shares have no stated maturity, are not subject to any sinking fund or mandatory redemption and are not convertible into or exchangeable for any of our other securities.

Unless full cumulative dividends have been paid or declared and set apart for payment on the Series C Preference Shares and any Parity Shares for all past dividend periods and for the current dividend period:

(1) we may not purchase any Series C Preference Shares or Parity Shares except in accordance with a purchase offer made in writing to all holders of Series C Preference Shares and Parity Shares upon such terms as our Board, in its sole discretion after consideration of the respective annual dividend rate and other relative rights and preferences of the respective classes or series, will determine (which determination will be final and conclusive) will result in fair and equitable treatment among the respective classes or series; and

(2) we may not redeem, purchase or otherwise acquire, or permit any subsidiary to purchase or acquire, any Junior Shares, subject to certain exceptions.

Reissuance of Shares. Any Series C Preference Shares reacquired in any manner by us will have the status of authorized but unissued preference shares, and may be reissued as part of the same class or series or may be reclassified and reissued by the Board in the same manner as any other authorized and unissued preference shares.

Voting. Except as indicated below or as otherwise required by applicable law, the holders of Series C Preference Shares will have no voting rights.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series C Preference Shares, whenever dividends payable on the Series C Preference Shares or on any Parity Shares are in arrears in an aggregate amount equivalent to six full quarterly dividends on all of such Series C Preference Shares or Parity Shares, as applicable, then outstanding, the holders of Series C Preference Shares, together with the holders of Parity Shares, will have the right, voting together as a single class regardless of class or series, to elect two directors of our Board. We will use our best efforts to increase the number of directors constituting the Board to the extent necessary to effectuate such right. Whenever all arrearages in dividends on the Series C Preference Shares and the Parity Shares shall have been paid and dividends thereon for the current quarterly dividend period shall have been declared and paid or set apart for payment, the rights of such holders of Series C Preference Shares and the Parity Shares to elect members of the Board will cease, subject to revesting in the event of each and every subsequent default in an aggregate amount equivalent to six full quarterly dividends.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series C Preference Shares, the rights attached to the Series C Preference Shares may only be varied with the consent in writing of the holders of three-quarters of the outstanding Series C Preference Shares, or with the sanction of a special resolution approved by at least a majority of the votes cast by the holders of the Series C Preference Shares at a separate meeting in which a quorum is present. The rights attached to

Series C Preference Shares will not be deemed to be varied by the creation or issue of any shares or any securities convertible into or evidencing the right to purchase shares ranking prior to or equally with the Series C Preference Shares with respect to the payment of dividends or of assets upon liquidation, dissolution or winding up. Holders of Series C Preference Shares are not entitled to vote on any sale of all or substantially all of our assets.

On any item on which the holders of the Series C Preference Shares are entitled to vote pursuant to the terms of its Certificate of Designation, Preferences and Rights, such holders will be entitled to one vote for each Series C Preference Share held.

Currently, under Bermuda law each share (including preference shares) of an amalgamating or merging company carries the right to vote in respect of an amalgamation or merger whether or not it otherwise carries the right to vote. The provisions of Bermuda law, and thus these voting rights as to amalgamations and mergers, are subject to change at any time.

A more detailed description of the Series C Preference Shares is set forth in our registration statement filed under the Exchange Act on Form 8-A on March 19, 2004, including any amendment or report for the purpose of updating such description. If we issue preference shares in the future, they may, or may not, be on terms similar to the Series C Preference Shares.

SERIES E PREFERENCE SHARES

Currently, 11,000,000 of our 5.375% Series E Preference Shares are outstanding. The Series E Preference Shares are listed on the New York Stock Exchange under the symbol "RNRPRE." The Series E Preference Shares currently issued and outstanding are fully paid and nonassessable within the meaning of applicable Bermuda law. Because the following summary of the terms of the Series E Preference Shares is not complete, you should refer to the Memorandum, the Bye-Laws and the applicable Certificate of Designation, Preferences and Rights for complete information regarding the terms of the Series E Preference Shares.

General. The holders of Series E Preference Shares have no preemptive rights with respect to any of our common shares or any of our other securities convertible into or carrying rights or options to purchase any such shares. The Series E Preference Shares are not subject to any sinking fund or other obligation on our part to redeem or retire the Series E Preference Shares. Unless we redeem them, the Series E Preference Shares will have a perpetual term with no maturity. The Series E Preference Shares rank *pari passu* to our Series C Preference Shares and Depositary Shares (each representing 1/1000th interest in a Series F Preference Share), and senior to our common shares with respect to payment of dividends and amounts upon liquidation, dissolution or winding-up.

Dividends. Dividends on the Series E Preference Shares are payable from the date of original issuance on a non-cumulative basis, only when, as and if declared by our Board of Directors, quarterly in arrears, in an amount per share equal to 5.375% of the liquidation preference per annum.

No dividends will be paid upon any shares of any class or series of our shares ranking on a parity with the Series E Preference Shares with respect to the payment of dividends and amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Parity Shares") (other than partial dividends to be shared *pro rata* by the holders of Parity Shares and Series E Preference Shares) for any period unless there will have been paid or declared and set apart for payment dividends to be paid to the holders of the Series E Preference Shares for the current dividend period. No dividends will be paid upon any class or series of our shares ranking junior to the Series E Preference Shares with respect to either the payment of dividends or amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Junior Shares") for any period unless there will have been paid or declared and set apart for

payment dividends to be paid to the holders of the Series E Preference Shares and Parity Shares for the current dividend period, subject to certain exceptions.

Liquidation. In case of our voluntary or involuntary liquidation, dissolution or winding up, the holders of Series E Preference Shares will be entitled to receive from our assets legally available for distribution to shareholders a liquidation preference of \$25 per share, plus declared and unpaid dividends, if any, to the date of liquidation, without accumulation of any undeclared dividends and without interest.

It is possible that, in case of our voluntary or involuntary liquidation, dissolution or winding up, our assets could be insufficient to pay the holders of all of the classes or series of preference shares then outstanding the full, or any, amounts to which they may be entitled. In that circumstance, the holders of Series E Preference Shares and any Parity Shares will share ratably in such assets in accordance with the respective amounts that would be payable on such Series E Preference Shares and such Parity Shares if all amounts payable thereon were paid in full.

Our amalgamation, consolidation or merger with or into any other corporation, or a sale of all or substantially all of our assets, or a statutory share exchange, will not be deemed to constitute a liquidation, dissolution or winding up.

Redemption. We may redeem the Series E Preference Shares, in whole or in part, at any time upon not less than 30 nor more than 60 days' written notice, at a redemption price of \$25 per share, plus an amount equal to the portion of the quarterly dividend attributable to the then-current dividend period to, but excluding, the date of redemption. The Series E Preference Shares have no stated maturity, are not subject to any sinking fund or mandatory redemption and are not convertible into or exchangeable for any of our other securities. We may not redeem the Series E Preference Shares before June 1, 2018, except that we may redeem the Series E Preference Shares before that date at a redemption price of \$26 per share, plus declared and unpaid dividends, if any, to, but excluding, the date of redemption, without accumulation of any undeclared dividends and without interest, if we submit a proposal to our common shareholders concerning an amalgamation or submit any proposal for any other matter that requires, as a result of a change in Bermuda law, the approval of the holders of the Series E Preference Shares, whether voting as a separate series or together with any other series of preference shares as a single class. In addition, at any time upon not less than 30 nor more than 60 days' written notice following the occurrence of a "tax event" or within 90 days under certain circumstances following the occurrence of a "capital redemption trigger date," we may redeem the Series E Preference Shares, in whole or in part, at a redemption price of \$25 per share, plus declared and unpaid dividends, if any, to, but excluding, the date of redemption, without accumulation of any undeclared dividends and without interest.

Unless there will have been paid or declared and set apart for payment full dividends for the holders of the Series E Preference Shares and the holders of any Parity Shares for the latest completed dividend period:

(1) we may not purchase any Series E Preference Shares or Parity Shares except in accordance with a purchase offer made in writing to all holders of Series E Preference Shares and Parity Shares upon such terms as the Board, in its sole discretion after consideration of the respective annual dividend rate and other relative rights and preferences of the respective classes or series, will determine (which determination will be final and conclusive) will result in fair and equitable treatment among the respective classes or series; and

(2) we may not redeem, purchase or otherwise acquire, or permit any subsidiary to purchase or acquire, any Junior Shares, subject to certain exceptions.

Reissuance of Shares. Any Series E Preference Shares reacquired in any manner by us will have the status of authorized but unissued preference shares, and may be reissued as part of the same

class or series or may be reclassified and reissued by the Board in the same manner as any other authorized and unissued preference shares.

Voting. Except as indicated below or as otherwise required by applicable law, the holders of Series E Preference Shares will have no voting rights.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series E Preference Shares, whenever dividends payable on the Series E Preference Shares or on any Parity Shares are in arrears in an aggregate amount equivalent to six full quarterly dividends on all of such Series E Preference Shares or Parity Shares, as applicable, then outstanding, the holders of Series E Preference Shares, together with the holders of Parity Shares, will have the right, voting together as a single class regardless of class or series, to elect two directors of our Board. We will use our best efforts to increase the number of directors constituting the Board to the extent necessary to effectuate such right. Whenever all arrearages in dividends on the Series E Preference Shares and the Parity Shares shall have been paid and dividends thereon for the current quarterly dividend period shall have been declared and paid or set apart for payment, the rights of such holders of Series E Preference Shares and the Parity Shares to elect members of the Board will cease, subject to revesting in the event of each and every subsequent default in an aggregate amount equivalent to six full quarterly dividends.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series E Preference Shares, the rights attached to the Series E Preference Shares may only be varied with the consent in writing of the holders of three-quarters of the outstanding Series E Preference Shares, or with the sanction of a special resolution approved by at least a majority of the votes cast by the holders of the Series E Preference Shares at a separate meeting in which a quorum is present; provided, however, that the terms of the Series E Preference Shares may also be varied under certain circumstances in connection with a “tax event” or a “capital redemption disqualification event”. The rights attached to Series E Preference Shares will not be deemed to be varied by the creation or issue of any shares or any securities convertible into or evidencing the right to purchase shares ranking prior to or equally with the Series E Preference Shares with respect to the payment of dividends or of assets upon liquidation, dissolution or winding up. Holders of Series E Preference Shares are not entitled to vote on any sale of all or substantially all of our assets.

On any item on which the holders of the Series E Preference Shares are entitled to vote pursuant to the terms of its Certificate of Designation, Preferences and Rights, such holders will be entitled to one vote for each Series E Preference Share held.

Currently, under Bermuda law each share (including preference shares) of an amalgamating or merging company carries the right to vote in respect of an amalgamation or merger whether or not it otherwise carries the right to vote. The provisions of Bermuda law, and thus these voting rights as to amalgamations and mergers, are subject to change at any time.

A more detailed description of the Series E Preference Shares is set forth in our registration statement filed under the Exchange Act on Form 8-A on May 28, 2013, including any amendment or report for the purpose of updating such description. If we issue preference shares in the future, they may, or may not, be on terms similar to the Series E Preference Shares.

SERIES F PREFERENCE SHARES

Currently, 10,000 of our 5.750% Series F Preference Shares (equivalent to 10,000,000 Depositary Shares) are outstanding. The 10,000,000 Depositary Shares, each representing 1/1,000th of an interest in a share of 5.750% Series F Preference Shares, are listed on the New York Stock Exchange under the symbol “RNRPRF.” The Series F Preference Shares (and the Depositary Shares) currently issued and outstanding are fully paid and nonassessable within the meaning of applicable Bermuda law.

Because the following summary of the terms of the Series F Preference Shares is not complete, you should refer to the Memorandum, the Bye-Laws and the applicable Certificate of Designation, Preferences and Rights for complete information regarding the terms of the Series F Preference Shares.

General. The holders of Series F Preference Shares have no preemptive rights with respect to any of our common shares or any of our other securities convertible into or carrying rights or options to purchase any such shares. The Series F Preference Shares are not subject to any sinking fund or other obligation on our part to redeem or retire the Series F Preference Shares. Unless we redeem them, the Series F Preference Shares will have a perpetual term with no maturity. The Series F Preference Shares rank *pari passu* to our Series C Preference Shares and our Series E Preference Shares and senior to our common shares with respect to payment of dividends and amounts upon liquidation, dissolution or winding-up.

Dividends. Dividends on the Series F Preference Shares (and the Depositary Shares) are payable from the date of original issuance on a non-cumulative basis, only when, as and if declared by our Board of Directors, quarterly in arrears, in an amount per share equal to 5.750% of the liquidation preference per annum.

No dividends will be paid upon any shares of any class or series of our shares ranking on a parity with the Series F Preference Shares with respect to the payment of dividends and amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Parity Shares") (other than partial dividends to be shared *pro rata* by the holders of Parity Shares and Series F Preference Shares) for any period unless there will have been paid or declared and set apart for payment dividends to be paid to the holders of the Series F Preference Shares for the current dividend period. No dividends will be paid upon any class or series of our shares ranking junior to the Series F Preference Shares with respect to either the payment of dividends or amounts upon our liquidation, dissolution or winding up (for purposes of this section, "Junior Shares") for any period unless there will have been paid or declared and set apart for payment dividends to be paid to the holders of the Series F Preference Shares and Parity Shares for the current dividend period, subject to certain exceptions.

Liquidation. In case of our voluntary or involuntary liquidation, dissolution or winding up, the holders of Series F Preference Shares will be entitled to receive from our assets legally available for distribution to shareholders a liquidation preference of \$25,000 per 5.750% Series F Preference Share (equivalent to \$25 per Depositary Share), plus declared and unpaid dividends, if any, to the date of liquidation, without accumulation of any undeclared dividends and without interest.

It is possible that, in case of our voluntary or involuntary liquidation, dissolution or winding up, our assets could be insufficient to pay the holders of all of the classes or series of preference shares then outstanding the full, or any, amounts to which they may be entitled. In that circumstance, the holders of Series F Preference Shares and any Parity Shares will share ratably in such assets in accordance with the respective amounts that would be payable on such Series F Preference Shares and such Parity Shares if all amounts payable thereon were paid in full.

Our amalgamation, consolidation or merger with or into any other corporation, or a sale of all or substantially all of our assets, or a statutory share exchange, will not be deemed to constitute a liquidation, dissolution or winding up.

Redemption. On and after June 30, 2023, we may redeem the Series F Preference Shares, in whole or in part, at any time upon not less than 30 nor more than 60 days' written notice, at a redemption price of \$25,000 per 5.750% Series F Preference Share (equivalent to \$25 per Depositary Share), plus an amount equal to the portion of the quarterly dividend attributable to the then-current dividend period to, but excluding, the date of redemption; provided that no redemption may occur prior to June 30, 2028

unless (1) we have sufficient funds in order to meet the Bermuda Monetary Authority's (the "BMA") Enhanced Capital Requirement and the BMA (or its successor, if any) approves of the redemption or (2) we replace the capital represented by preference shares to be redeemed with capital having equal or better capital treatment as the preference shares under the Enhanced Capital Requirement. The Series F Preference Shares have no stated maturity, are not subject to any sinking fund or mandatory redemption and are not convertible into or exchangeable for any of our other securities. We may not redeem the

Series F Preference Shares before June 30, 2023, except that we may redeem the Series F Preference Shares before that date at a redemption price of \$26,000 per share (equivalent to \$26 per Depositary Share), plus declared and unpaid dividends, if any, to, but excluding, the date of redemption, without accumulation of any undeclared dividends and without interest, if we submit a proposal to our common shareholders concerning an amalgamation or submit any proposal for any other matter that requires, as a result of a change in Bermuda law, the approval of the holders of the Series F Preference Shares, whether voting as a separate series or together with any other series of preference shares as a single class. In addition, at any time upon not less than 30 nor more than 60 days' written notice following the occurrence of a "tax event" or within 90 days under certain circumstances following the occurrence of a "capital redemption trigger date," we may redeem the Series F Preference Shares, in whole or in part, at a redemption price of \$25,000 per 5.750% Series F Preference Share (equivalent to \$25 per Depositary Share), plus declared and unpaid dividends, if any, to, but excluding, the date of redemption, without accumulation of any undeclared dividends and without interest.

Unless there will have been paid or declared and set apart for payment full dividends for the holders of the Series F Preference Shares and the holders of any Parity Shares for the latest completed dividend period:

(1) we may not purchase any Series F Preference Shares or Parity Shares except in accordance with a purchase offer made in writing to all holders of Series F Preference Shares and Parity Shares upon such terms as the Board, in its sole discretion after consideration of the respective annual dividend rate and other relative rights and preferences of the respective classes or series, will determine (which determination will be final and conclusive) will result in fair and equitable treatment among the respective classes or series; and

(2) we may not redeem, purchase or otherwise acquire, or permit any subsidiary to purchase or acquire, any Junior Shares, subject to certain exceptions.

Reissuance of Shares. Any Series F Preference Shares reacquired in any manner by us will have the status of authorized but unissued preference shares, and may be reissued as part of the same class or series or may be reclassified and reissued by the Board in the same manner as any other authorized and unissued preference shares.

Voting. Except as indicated below or as otherwise required by applicable law, the holders of Series F Preference Shares will have no voting rights.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series F Preference Shares, whenever dividends payable on the Series F Preference Shares or on any Parity Shares are in arrears in an aggregate amount equivalent to six full quarterly dividends on all of such Series F Preference Shares or Parity Shares, as applicable, then outstanding, the holders of Series F Preference Shares, together with the holders of Parity Shares, will have the right, voting together as a single class regardless of class or series, to elect two directors of our Board. We will use our best efforts to increase the number of directors constituting the Board to the extent necessary to effectuate such right. Whenever all arrearages in dividends on the Series F Preference Shares and the Parity Shares shall have been paid and dividends thereon for the current quarterly dividend period shall have been declared

and paid or set apart for payment, the rights of such holders of Series E Preference Shares and the Parity Shares to elect members of the Board will cease, subject to revesting in the event of each and every subsequent default in an aggregate amount equivalent to six full quarterly dividends.

Pursuant to the terms of the Certificate of Designation, Preferences and Rights of the Series E Preference Shares, the rights attached to the Series F Preference Shares may only be varied with the consent in writing of the holders of three-quarters of the outstanding Series F Preference Shares, or with the sanction of a special resolution approved by at least a majority of the votes cast by the holders of the Series E Preference Shares at a separate meeting in which a quorum is present; provided, however, that the terms of the Series F Preference Shares may also be varied under certain circumstances in connection with a "tax event" or a "capital redemption disqualification event". The rights attached to Series F Preference Shares will not be deemed to be varied by the creation or issue of any shares or any securities convertible into or evidencing the right to purchase shares ranking prior to or equally with the Series F Preference Shares with respect to the payment of dividends or of assets upon liquidation, dissolution or winding up. Holders of Series F Preference Shares are not entitled to vote on any sale of all or substantially all of our assets.

On any item on which the holders of the Series F Preference Shares are entitled to vote pursuant to the terms of its Certificate of Designation, Preferences and Rights, such holders will be entitled to one vote for each Series F Preference Share held.

Currently, under Bermuda law each share (including preference shares) of an amalgamating or merging company carries the right to vote in respect of an amalgamation or merger whether or not it otherwise carries the right to vote. The provisions of Bermuda law, and thus these voting rights as to amalgamations and mergers, are subject to change at any time.

A more detailed description of the Series F Preference Shares is set forth in our registration statement filed under the Exchange Act on Form 8-A on June 18, 2018, including any amendment or report for the purpose of updating such description. If we issue preference shares in the future, they may, or may not, be on terms similar to the Series F Preference Shares.

TRANSFER OF SHARES

Our Bye-Laws contain various provisions affecting the transferability of our shares. Under the Bye-Laws, the Board has absolute discretion to decline to register a transfer of shares:

(1) unless the appropriate instrument of transfer is submitted along with such evidence as the Board may reasonably require showing the right of the transferor to make the transfer; or

(2) unless all applicable consents and authorizations of any governmental body or agency in Bermuda have been obtained.

In addition, our Bye-laws provide that no Person shall be permitted to own or control our shares to the extent such ownership would result in such Person or any other any Person being considered to own or control Controlled Shares, as our Board may determine in its sole discretion, and such ownership of Controlled Shares (i) would render any Person a Ten Percent Shareholder, (ii) cause us to become a "controlled foreign corporation" within the meaning of section 957 of the U.S. Internal Revenue Code of 1986, as amended (the "Code"), or (iii) cause us to become a "foreign personal holding company" within the meaning of section 552 of the Code. Our Board has the right to waive these restrictions in its sole discretion and may decline to register any transfer of shares if the transfer, in the discretion of the Board, would have any of the effects described in clauses (i)-(iii) above. These limits may have the effect of deterring purchases of large blocks of common shares or proposals to acquire us, even if some or a

majority of the shareholders might deem these purchases or acquisition proposals to be in their best interests.

“Controlled Shares” in reference to any Person means (i) all of our capital shares such Person is deemed to own directly, indirectly or by attribution (within the meaning of Section 958 of the Code) and (ii) all of our capital shares directly, indirectly or beneficially owned by such Person (within the meaning of section 13(d) of the Exchange Act).

“Ten Percent Shareholder” means a Person who our Board of Directors determines, in its sole and absolute discretion, owns or controls Controlled Shares representing more than 9.9% of the total voting rights of all of our issued and outstanding capital shares.

“Person” means an individual, partnership, joint-stock company, corporation, trust or unincorporated organization, limited liability company, a government, agency or political subdivision thereof, an entity or arrangement treated as one of the foregoing for U.S. income tax purposes, or a “group” within the meaning of section 13(d) of the Exchange Act.

Our Bermuda counsel has advised us that, while the precise form of the restrictions on transfers contained in the Bye-Laws is untested, as a matter of general principle, restrictions on transfers are enforceable under Bermuda law and are not uncommon.

PERFORMANCE SHARE AGREEMENT

RenaissanceRe Holdings Ltd. (the "Company"), pursuant to its 2016 Long-Term Incentive Plan (as amended from time to time, the "Plan"), hereby grants to the Participant the number of Performance Shares set forth below. The Performance Shares are subject to all of the terms and conditions as set forth herein, as well as the terms and conditions of the Plan, all of which are incorporated herein in their entirety. Capitalized terms not otherwise defined herein shall have the same meaning as set forth in the Plan. In the event of a conflict or inconsistency between the terms and provisions of the Plan and the provisions of this Performance Share Agreement (this "Agreement"), the Plan shall govern and control.

Participant: _____

Date of Grant: _____

Number of Performance Shares: _____

Definitions:

For purposes of this Agreement, the following definitions shall apply:

"Average BVPS Plus AD Growth" means a fraction, (i) the numerator of which is the sum of the BVPS Plus AD Growth for each Performance Year during the Performance Period, and (ii) the denominator of which is three (3).

"Average Underwriting Expense Ratio" means a fraction, (i) the numerator of which is the sum of the Underwriting Expense Ratio for each Performance Year during the Performance Period, and (ii) the denominator of which is three (3).

"Book Value Per Share" means, as of any date, the book value per share of Stock, as of such date, determined in accordance with GAAP.

"BVPS Plus AD Growth" means, with respect to any Performance Year, the percentage change in the Book Value Per Share plus accumulated dividends from the Reference BVPS Amount to the Measurement BVPS Plus AD Amount, in each case, with respect to such Performance Year.

"Employment Agreement" means the Participant's employment agreement with the Company, as amended, amended and restated, or modified from time to time.

"Measurement BVPS Plus AD Amount" means, with respect to any Performance Year, the sum of (i) the Book Value Per Share as of the last day of such Performance Year, and (ii) the aggregate of all dividends paid with respect to the Stock during such Performance Year.

"Measurement Price" means, with respect to any Change in Control, the average of the closing prices of the Stock for each of the twenty (20) trading days ending on (and including) the date of the consummation of such Change in Control.

"Peer Group" means the following group of companies: [____]; provided, however, that if (i) any of the companies ceases to be publicly traded for any reason following the Date of Grant and prior to the Committee's determination of relative Average Underwriting Expense Ratio or Total Shareholder Return, as applicable, with respect to the Performance Period or (ii) if sufficient data with respect to any of such companies is not available to the Committee to calculate relative Underwriting Expense Ratio or Total Shareholder Return, as applicable, for the Performance Period, such company or companies shall not be members of the Peer Group.

"Performance Period" means the three (3) year period commencing January 1, [____] and ending December 31, [____].

"Performance Year" means fiscal year [____], fiscal year [____] or fiscal year [____], as applicable.

"Reference BVPS Amount" means, with respect to any Performance Year, the Book Value Per Share as of the date immediately prior to the first day of such Performance Year.

"Reference Price" means, with respect to any Change in Control, the average of the closing prices of the Stock for each of the twenty (20) trading days ending on (and including) the date immediately prior to the date on which such Change in Control is publicly announced, as determined by the Committee.

"Service Period" means the period commencing on the Date of Grant and ending on December 31, [____].

"Total Shareholder Return" means, as of the date of the consummation of any Change in Control, the percentage change in the value of the Stock from the Reference Price to the Measurement Price as of such date (plus the dividends paid with respect to the Stock during the period commencing on the date immediately prior to the date on which the Company publicly announces such Change in Control and ending on the date of the consummation of such Change in Control), as determined by the Committee in its sole discretion.

"Underwriting Expense Ratio" means, with respect to any Performance Year, the underwriting expense ratio as provided in publicly disclosed annual financial statements or

as provided by an external source selected by the Committee, in each case, as determined by the Committee in its sole discretion.

Vesting Percentage:

“Vesting Percentage” shall, with respect to Book Value Shares, be a function of the Average BVPS Plus AD Growth achieved for the Performance Period, to be determined as follows:

<u>Achievement Level</u>	<u>Average BVPS Plus AD Growth</u>	<u>Vesting Percentage for Book Value Shares</u>
Maximum	[]%	[]%
Target	[]%	[]%
Threshold	[]%	[]%
Below Threshold	< []%	0%

In the event that the Average BVPS Plus AD Growth for the Performance Period falls between any of the stated Average BVPS Plus AD Growth percentages in the table above, the Vesting Percentage for Book Value Shares shall be determined using a linear interpolation from the next lowest stated percentage. For all purposes of this Agreement, the Plan, the Employment Agreement, and any other agreement between the Participant and the Company, the Average BVPS Plus AD Growth associated with the “target” achievement level shall be deemed to be “target” performance. No Book Value Shares shall vest if the Average BVPS Plus AD Growth is below the Average BVPS Plus AD Growth associated with the “Threshold” achievement level, subject to the Industry Loss Adjustment provision of this Agreement.

With respect to Expense Ratio Shares, the Vesting Percentage shall be a function of the Average Underwriting Expense Ratio achieved by the Company for the Performance Period relative to the Peer Group, expressed as the Company’s ordinal rank among the Peer Group, to be determined as follows:

<u>Achievement Level</u>	<u>Relative Average Underwriting Expense Ratio Rank</u>	<u>Vesting Percentage for Expense Ratio Shares</u>
Maximum	[] (highest)	[]%
Target	[]	[]%
Threshold	[]	[]%
Below Threshold	< []	0%

; provided, however, that, in the event that the composition of the Peer Group changes during the Performance Period, the Committee shall adjust (i) the relative Average Underwriting Expense Ratio associated with the “target” achievement level for such Performance Period to be the ordinal rank that immediately exceeds the 50th percentile among such new Peer Group, and (ii) the relative Average Underwriting Expense Ratio associated with the “threshold” achievement level for such Performance Period to be the percentile rank equal to the whole ordinal rank that immediately exceeds the [] percentile among such new Peer Group.

In the event that the relative Average Underwriting Expense Ratio for the Performance Period falls between any of the stated ordinal rankings above, the Vesting Percentage for Expense Ratio Shares shall be determined using a linear interpolation from the next lowest stated ordinal ranking. For all purposes of this Agreement, the Plan, the Employment Agreement, and any other agreement between the Participant and the Company, relative Average Underwriting Expense Ratio associated with the “target” achievement level among the Peer Group shall be deemed to be “target” performance. No Expense Ratio Shares shall vest if the Average Underwriting Expense Ratio relative to the Peer Group is below the relative Average Underwriting Expense Ratio associated with the “Threshold” achievement level.

Notwithstanding anything herein to the contrary, the Committee may decrease the Vesting Percentage with respect to any of the Performance Shares, in its sole discretion.

Industry Loss Adjustment:

Notwithstanding anything herein to the contrary, in the event that (i) there are global catastrophic industry loss event(s) during any Performance Year totaling \$[billion] or greater in the aggregate (as determined by the Committee in its sole discretion) and (ii) the BVPS Plus AD Growth for such Performance Year is below the percentage associated with “Threshold” achievement level, the BVPS Plus AD Growth for such Performance Year shall be the percentage associated with “Threshold” achievement level; provided, however, that the Committee in its sole discretion may determine to apply the “Below Threshold” achievement level for BVPS Plus AD Growth for such Performance Year if the Committee determines that the Company’s performance against its modelled outcomes for such event(s) was not within the acceptable modelled range.

Change in Control:

Notwithstanding anything herein to the contrary, in the event of a Change in Control during the Service Period in connection with which the Performance Shares are not assumed or substituted, the Vesting Percentage for all Performance Shares will be a function of the Total Shareholder Return achieved as of the date of the

consummation of such Change in Control, to be determined as follows:

<u>Achievement Level</u>	<u>Total Shareholder Return</u>	<u>Vesting Percentage</u>
Maximum	[]%	[]%
Target	[]%	[]%
Threshold	[]%	[]%
Below Threshold	< []%	[]%

In the event that the Total Shareholder Return achieved as of the date of the consummation of such Change in Control falls between any of the stated Total Shareholder Return percentages in the table above, the Vesting Percentage for all Performance Shares shall be determined using a linear interpolation from the next lowest stated percentage.

Performance Objectives:

For purposes of this Agreement, the Performance Objectives shall be Average BVPS Plus AD Growth, Average Underwriting Expense Ratio and/or Total Shareholder Return, as applicable.

Performance Objective Adjustment:

The Committee may adjust the Performance Objectives set forth herein to exclude the impact of any acquisitions or dispositions of businesses or business segments by the Company, one-time non-operating charges, unusual or nonrecurring items, accounting changes (including the early adoption of any accounting change mandated by any governing body, organization or authority), changes in tax laws, impact of discontinued operations, restatements of prior period financial results, and any other events or transactions that may result in distortion of such Performance Objectives. In addition, if the Committee determines that a change in the business, operations, corporate structure or capital structure of the Company, or the manner in which it conducts its business, or other events or circumstances render the Performance Objectives set forth herein unsuitable, the Committee may modify such Performance Objectives, in whole or in part, as the Committee deems appropriate and equitable.

Performance Share Amounts:

"Book Value Shares" shall consist of [] Performance Shares.

"Expense Ratio Shares" shall consist of [] Performance Shares.

Vesting Schedule:

Subject to the Participant's continued employment with the Company or any of its Affiliates through the Service Period (except as otherwise provided in any other agreement between the Participant and the Company pertaining to the

Performance Shares, including the Employment Agreement or any other Participant Agreement, in which case the terms of such other agreement shall apply to the Performance Shares), a number of Performance Shares shall vest upon the expiration of the Service Period equal to the product of (x) the total number of Performance Shares multiplied by (y) the Vesting Percentage. The total number of vested Performance Shares shall be delivered following the later of (i) expiration of the Service Period and (ii) the Committee's determination of the achievement level of the applicable Performance Objectives. Performance Shares that are no longer eligible to vest following the Committee's determination of the achievement level of the applicable Performance Objectives shall immediately be forfeited to the Company by the Participant for no consideration as of the date of such determination.

Termination of Employment:

In the event of the Participant's Termination for any reason (except as otherwise provided in any other agreement between the Participant and the Company pertaining to the Performance Shares, including the Employment Agreement or any other Participant Agreement, in which case the terms of such other agreement shall apply to the Performance Shares), all Performance Shares that have not vested as of the date of such Termination shall be immediately forfeited to the Company by the Participant for no consideration as of such date.

Dividends:

As contemplated by Section 9(a) of the Plan, cash dividends and stock dividends, if any, with respect to the Performance Shares shall be withheld by the Company for the Participant's account, and shall be subject to forfeiture to the same degree as the Performance Shares to which such dividends relate. No interest will accrue or be paid on the amount of any cash dividends withheld. Accrued dividends that remain unpaid following the Committee's determination of the achievement level of the applicable Performance Objectives during the Performance Period or the Participant's Termination for any reason shall be immediately forfeited for no consideration as of the date of such determination or Termination, as applicable. No dividends will accrue or be withheld by the Company on the Participant's behalf pursuant to this Agreement or the Plan with respect to any Performance Shares on or following the date on which they vest in full.

Additional Terms:

The Performance Shares granted hereunder shall be registered in the Participant's name on the books of the Company, but the certificates evidencing such Performance Shares shall be retained by the Company while the Performance Shares remain unvested, and for such additional time as the Committee determines appropriate.

The Company shall have the right to deduct from any payment to the Participant pursuant to this Agreement any federal, state or local income or other taxes required to be withheld in respect thereof in accordance with Section 17 of the Plan.

This Agreement does not confer upon the Participant any right to continue as an employee.

This Agreement shall be construed and interpreted in accordance with the laws of Bermuda, without regard to the principles of conflicts of law thereof.

* * *

[Signatures to appear on the following page(s).]

THE UNDERSIGNED PARTICIPANT ACKNOWLEDGES RECEIPT OF THIS AGREEMENT AND THE PLAN, AND AS AN EXPRESS CONDITION TO THE GRANT OF PERFORMANCE SHARES HEREUNDER, AGREES TO BE BOUND BY THE TERMS THIS AGREEMENT AND THE PLAN.

RENAISSANCERE HOLDINGS LTD.

PARTICIPANT

By: _____

Signature

Signature

Name: _____

Date: _____

Title: _____

Date: _____

SUBSIDIARIES OF RENAISSANCERE HOLDINGS LTD.

Name	Jurisdiction	Ownership Interest Held Directly or Indirectly by RenaissanceRe Holdings Ltd.
DaVinci Reinsurance Ltd.	Bermuda	(1)
DaVinciRe Holdings Ltd.	Bermuda	(1)
GGH Ireland Holdings Ltd.	Ireland	100%
Renaissance Investment Holdings Ltd.	Bermuda	100%
Renaissance Investment Holdings II Ltd.	Bermuda	100%
Renaissance Investment Management Company Limited	Bermuda	100%
Renaissance Other Investments Holdings Ltd.	Bermuda	100%
Renaissance Other Investments Holdings II Ltd.	Bermuda	100%
Renaissance Other Investments Holdings III Ltd.	Bermuda	100%
Renaissance Reinsurance Ltd.	Bermuda	100%
Renaissance Reinsurance of Europe Unlimited Company	Ireland	100%
Renaissance Reinsurance U.S. Inc.	Maryland	100%
Renaissance Services of Europe Unlimited Company	Ireland	100%
Renaissance Underwriting Managers, Ltd.	Bermuda	100%
RenaissanceRe (UK) Limited	U.K.	100%
RenaissanceRe Corporate Capital (UK) Limited (2)	U.K.	100%
RenaissanceRe Europe AG	Switzerland	100%
RenaissanceRe Finance Inc.	Delaware	100%
RenaissanceRe Fund Holdings Ltd.	Bermuda	100%
RenaissanceRe Medici Fund Ltd.	Bermuda	(3)
RenaissanceRe Services Ltd.	Bermuda	100%
RenaissanceRe Specialty Holdings (UK) Limited	Bermuda	100%
RenaissanceRe Specialty U.S. Ltd.	Bermuda	100%
RenaissanceRe Syndicate Management Limited	U.K.	100%
RenaissanceRe Underwriting Managers U.S. Ltd.	Delaware	100%
RenaissanceRe Ventures Ltd.	Bermuda	100%
RenRe Insurance Holdings Ltd.	Bermuda	100%
RenRe North America Holdings Inc.	Delaware	100%
Top Layer Reinsurance Ltd.	Bermuda	50%
Upsilon RFO Re Ltd.	Bermuda	(4)
Vermeer Reinsurance Ltd.	Bermuda	(5)
WeatherPredict Consulting Inc.	Virginia	100%
Weather Predict Inc.	Delaware	100%

- (1) As of December 31, 2019, the Company owns 21.9% of the outstanding equity of DaVinciRe Holdings Ltd.'s ("DaVinciRe") but controls a majority of DaVinciRe's outstanding voting power, and accordingly, DaVinciRe's financial results are consolidated in the Company's financial statements. DaVinci Reinsurance Ltd. is a wholly owned subsidiary of DaVinciRe.
- (2) RenaissanceRe Corporate Capital (UK) Limited is the Lloyd's sponsor of RenaissanceRe Syndicate 1458.
- (3) As of December 31, 2019, the Company owns 12.1% of the outstanding equity of RenaissanceRe Medici Fund Ltd.'s ("RenaissanceRe Medici Fund") but controls a majority of RenaissanceRe Medici Fund's outstanding voting power, and accordingly, RenaissanceRe Medici Fund's financial results are consolidated in the Company's financial statements.
- (4) Upsilon RFO Re Ltd. is considered a variable interest entity and the Company is considered the primary beneficiary of Upsilon RFO Re Ltd., as a result its financial results are consolidated in the Company's financial statements. As of December 31, 2019, the Company's participation in the risks assumed by Upsilon RFO Ltd. was 16.5%.
- (5) Vermeer Reinsurance Ltd. ("Vermeer") is considered a variable interest entity and the Company is considered the primary beneficiary of Vermeer, as a result its financial results are consolidated in the Company's financial statements. The Company maintains a majority voting control of Vermeer, while PGGM retains economic benefits. The names of a number of the Company's subsidiaries and equity entities have been omitted because considered in the aggregate they would not constitute a single significant subsidiary.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statements (Form S-3 Nos. 333-235821, 333-235294 and 333-231720) of RenaissanceRe Holdings Ltd.
- (2) Registration Statement (Form S-3 No. 333-231720-01) of RenRe North America Holdings Inc.
- (3) Registration Statement (Form S-3 No. 333-231720-02) of RenaissanceRe Capital Trust II.
- (4) Registration Statement (Form S-3 No. 333-231720-03) of RenaissanceRe Finance Inc.
- (5) Registration Statement (Form S-8 No. 333-211398) pertaining to the RenaissanceRe Holdings Ltd. 2016 Long-Term Incentive Plan.
- (6) Registration Statement (Form S-8 No. 333-167394) pertaining to the RenaissanceRe Holdings Ltd. 2010 Employee Stock Purchase Plan and the 2010 Performance-Based Equity Incentive Plan.
- (7) Registration Statement (Form S-8 No. 333-90758) pertaining to the RenaissanceRe Holdings Ltd. Amended and Restated Non-Employee Director Stock Plan and the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.
- (8) Registration Statement (Form S-8 No. 333-68282) pertaining to the RenaissanceRe Holdings Ltd. Second Amended and Restated 1993 Stock Incentive Plan and the RenaissanceRe Holdings Ltd. 2001 Stock Incentive Plan.

of our reports dated February 7, 2020, with respect to the consolidated financial statements, financial statement schedules and the effectiveness of internal control over financial reporting of RenaissanceRe Holdings Ltd., included in this Annual Report (Form 10-K) for the year ended December 31, 2019.

/s/ Ernst & Young Ltd.

Hamilton, Bermuda
February 7, 2020

CERTIFICATION

I, Kevin J. O'Donnell, certify that:

1. I have reviewed this Form 10-K of RenaissanceRe Holdings Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 7, 2020

/s/ Kevin J. O'Donnell

Kevin J. O'Donnell
Chief Executive Officer

CERTIFICATION

I, Robert Qutub, certify that:

1. I have reviewed this Form 10-K of RenaissanceRe Holdings Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 7, 2020

/s/ Robert Qutub
Robert Qutub
Chief Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Form 10-K of RenaissanceRe Holdings Ltd. (the "Company") for the quarter ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kevin J. O'Donnell, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Kevin J. O'Donnell

Kevin J. O'Donnell

Chief Executive Officer

February 7, 2020

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Form 10-K of RenaissanceRe Holdings Ltd. (the "Company") for the quarter ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Robert Qutub, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Robert Qutub

Robert Qutub

Chief Financial Officer

February 7, 2020