

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

Form 20-F

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

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

For the fiscal year ended December 31, 2019

OR

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

OR

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

Commission file number 001-31909



ASPEN INSURANCE HOLDINGS LIMITED

(Exact name of registrant as specified in its charter)

Bermuda

(Jurisdiction of incorporation or organization)

141 Front Street, Hamilton, HM19, Bermuda

(Address of principal executive offices)

Mark Cloutier

Chairman and Chief Executive Officer

141 Front Street, Hamilton, HM19, Bermuda Telephone: +1 441-295-8201, Email: mark.cloutier@aspen.co

(Name, Telephone, E-mail and/or Facsimile Number and Address of Company Contact Person)

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

<u>Title of Each Class</u>	<u>Trading Symbol</u>	<u>Name of Each Exchange on Which Registered</u>
5.95% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares	AHL PRC	New York Stock Exchange, Inc.
5.625% Perpetual Non-Cumulative Preference Shares	AHL PRD	New York Stock Exchange, Inc.
Depository Shares, each representing a 1/1000th interest in a share of 5.625% Perpetual Non-Cumulative Preference Shares	AHL PRE	New York Stock Exchange, Inc.

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

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report: 60,395,839 ordinary shares.

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

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act: Yes No

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

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

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

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

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

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

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

ASPEN INSURANCE HOLDINGS LIMITED
FORM 20-F

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EXPLANATORY NOTE

References in this Annual Report on Form 20-F (this “report”) to the “Company,” the “Aspen Group,” “we,” “us” or “our” refer to Aspen Insurance Holdings Limited (“Aspen Holdings”) or Aspen Holdings and its consolidated subsidiaries, as the context requires. References to “Aspen Holdings” mean only Aspen Insurance Holdings Limited. Our principal operating subsidiaries are: Aspen Insurance U.K. Limited (“Aspen U.K.”), Aspen Bermuda Limited (“Aspen Bermuda”), Aspen Specialty Insurance Company (“Aspen Specialty”), Aspen American Insurance Company (“AAIC”) and Aspen Underwriting Limited (“AUL”) (as corporate member of our Lloyd’s operations, which are managed by Aspen Management Agency Limited “AMAL”), each referred to herein an “Operating Subsidiary” and collectively referred to as the “Operating Subsidiaries”).

References in this report to “U.S. Dollars,” “dollars,” “\$” or “¢” are to the lawful currency of the United States of America, references to “British Pounds,” “pounds,” “GBP” or “£” are to the lawful currency of the United Kingdom and references to “euros” or “€” are to the lawful currency adopted by certain member states of the European Union (the “E.U.”), unless the context otherwise requires.

On February 15, 2019, the Company completed its merger with Highlands Merger Sub, Ltd. (“Merger Sub”), a wholly owned subsidiary of Highlands Holdings, Ltd. (“Parent”). Merger Sub merged with and into the Company (the “Merger”), with the Company continuing as the surviving company and as a wholly owned subsidiary of Parent. Parent, a Bermuda exempted company, is an affiliate of certain investment funds managed by affiliates of Apollo Global Management, Inc., a leading global investment manager (collectively with its subsidiaries, “Apollo”).

As a result of the Merger, all of the Company’s publicly traded ordinary shares were automatically canceled. The ordinary shares of the Company ceased trading on the New York Stock Exchange (“NYSE”) prior to the opening of trading on February 15, 2019. The Company’s preference shares and depositary shares continue to be listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE.

As of June 28, 2019, the Company became a ‘foreign private issuer’ within the meaning of Rule 405 under the Securities Act of 1933, as amended, and Rule 3b-4 under the Securities Exchange Act of 1934, as amended, and as such now files its Annual Reports on Form 20-F and is no longer subject to the same registration and disclosure requirements applicable to a U.S. domestic issuer.

PART I

Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information**A. Selected Financial Data**

The following table sets forth our selected historical financial information for the periods ended and as of the dates indicated. You should read the following selected consolidated financial information in conjunction with other information contained in this report, including the audited consolidated financial statements and related notes in Item 18 and “Operating and Financial Review and Prospects” in Item 5 of this report.

	Twelve Months Ended December 31,				
	2019	2018	2017	2016	2015
(\$ in millions, except per share amounts and percentages)					
Summary Income Statement Data					
Gross written premiums	\$ 3,442.4	\$ 3,446.9	\$ 3,360.9	\$ 3,147.0	\$ 2,997.3
Net premiums written	2,427.9	2,082.0	2,212.5	2,593.7	2,646.2
Net premiums earned	2,293.3	2,214.7	2,306.6	2,637.3	2,473.3
Loss and loss adjustment expenses	(1,679.7)	(1,573.0)	(1,994.7)	(1,576.1)	(1,366.2)
Amortization of deferred policy acquisition costs, general, administrative and corporate expenses	(934.3)	(863.3)	(902.7)	(1,019.0)	(907.6)
Net investment income	197.3	198.2	189.0	187.1	185.5
(Loss) income from operations before income tax	(218.8)	(156.0)	(281.8)	209.5	337.5
Net (loss) income after income tax	(241.7)	(145.8)	(266.4)	203.4	323.1
Basic weighted average shares outstanding (millions)	60.9	59.7	59.8	60.5	61.3
Summary Balance Sheet Data					
Total cash and investments ^(1,3)	\$ 7,801.9	\$ 7,823.1	\$ 8,687.8	\$ 9,174.1	\$ 8,811.7
Premiums receivable ⁽²⁾	1,403.4	1,551.1	1,596.3	1,472.5	1,151.6
Total assets	12,580.5	12,532.9	12,906.4	12,090.1	11,048.8
Loss and loss adjustment expense reserves	6,951.8	7,074.2	6,749.5	5,319.9	4,938.2
Reserves for unearned premiums	1,737.7	1,709.1	1,820.8	1,618.6	1,587.2
Loan notes issued by variable interest entities, at fair value ⁽⁴⁾	—	4.6	86.6	223.4	190.6
Long-term debt	299.8	424.7	549.5	549.3	549.2
Total shareholders' equity ⁽⁵⁾	2,725.5	2,640.4	2,912.9	3,648.3	3,419.9

(1) Total cash and investments include cash, cash equivalents, fixed income securities, equities, bank loans, other investments, short-term investments and catastrophe bonds.

(2) Premiums receivable including funds withheld.

(3) Including cash within consolidated variable interest entities of \$69.1 million as at December 31, 2019 (2018— \$26.9 million; 2017 — \$166.6 million; 2016 — \$291.3 million; 2015 — \$243.3 million).

(4) All of the loan notes issued by our consolidated variable interest entities, at fair value, were classified as current liabilities due and payable in less than one year. For more information, refer to Item 18, Note 5, “Variable Interest Entities.”

(5) Reinsurance premiums payables and retained earnings have been restated by \$15.6 million from January 1, 2017 onwards to account for additional ceded premiums on excess of loss ceded reinsurance contracts.

As at December 31, 2019, Parent held 100% of ordinary shares of \$0.01 par value each. As a result of the Merger, all of the Company's publicly traded ordinary shares were automatically canceled. The ordinary shares of the Company ceased trading on the NYSE prior to the opening of trading on February 15, 2019. Accordingly, per share data is no longer required to be presented by the Company. Refer to Item 18, Note 1, "History, Organization and Business Combination" for additional details of the Merger.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds.

Not applicable.

D. Risk Factors

You should carefully consider the following risk factors and all other information set forth in this report, including our consolidated financial statements and the notes thereto. Any of the risks described below could materially and adversely affect our business, operating results or financial condition. The risk factors described below could also cause our actual results to differ materially from those in the forward-looking and other statements contained in this report and other documents that we file with the SEC. The risks and uncertainties described below are not the only ones we face. However, these are the risks we believe to be material as of the date of this report. Additional risks not presently known to us or that we currently deem immaterial may also impair our future business, financial condition or operating results.

Introduction

As with any publicly traded company, investing in our preference shares and other securities carries risks. Our risk management strategy is designed to identify, measure, monitor and manage material risks that we can control and which could adversely affect our financial condition and operating results. We have invested significant resources to develop the appropriate risk management policies and procedures to implement this strategy. Nonetheless, the future business environment is intrinsically uncertain and difficult to forecast and, as a result, our risk management methods may not be successful. For more information on our risk management strategy, refer to Item 4, "Business Overview - Risk Management - Risk Management Strategy."

Insurance Risks

Our financial condition and operating results may be adversely affected by the occurrence of natural and man-made disasters.

As part of our insurance and reinsurance operations, we assume substantial exposure to losses resulting from natural disasters, man-made catastrophes and other catastrophe events. Catastrophes can be caused by various unpredictable events, including, but not limited to, tropical storms, cyclones, hurricanes, winter storms, tornadoes, hailstorms, floods, explosions, wildfires, drought, pandemic disease, volcanic eruptions, earthquakes and tsunamis. Catastrophes can also be man-made such as acts of war, acts of terrorism and other intentionally destructive acts, including those involving nuclear, biological, chemical or radiological events, cyber-attacks, explosions, infrastructure failures and losses resulting from political instability, government action that is hostile to commercial interests and sovereign, sub-sovereign and corporate defaults.

The incidence, severity and magnitude of catastrophes are inherently unpredictable and our losses from such catastrophes have been and can be substantial. In addition, we expect that increases in the values and concentrations of insured property will increase the severity of such occurrences in the future and that global climate change may increase the frequency and severity of severe weather events, wildfires and flooding. Similarly, changes in global political and economic conditions may increase both the frequency and severity of man-made catastrophe events in the future. Although we attempt to manage our exposure to such events through a multitude of approaches (including geographic diversification, geographic limits, individual policy limits, exclusions or limitations from coverage, purchase of reinsurance and expansion of supportive collateralized capacity), the availability of these management tools may be dependent on market factors and, to the extent available, may not respond in the way that we expect. In addition, a single catastrophic event could affect multiple geographic zones or the frequency or severity of catastrophic events could exceed our estimates. As a result, the occurrence of one or more catastrophic events or an unusual frequency of smaller events may result in substantial volatility in, and may materially adversely affect, our business, financial condition or operating results.

With regard to cyber-attacks, this is an area where the threat landscape is evolving, and there is a risk that increases in the frequency and severity of cyber-attacks on our policyholders could adversely affect our financial condition and operating results. This risk is also dependent on our policyholders' cybersecurity defenses, and our issuance of policy terms which respond to the evolving threat landscape. In addition, our exposure to cyber-attacks includes exposure to silent cyber risks, meaning risks and potential losses associated with policies where cyber risk is not specifically included nor excluded in the policies. Even in cases where we attempt to exclude losses from cyber-related risks, there can be no assurance that a court or arbitration panel will interpret policy language, or otherwise issue a ruling, favorable to us.

Global climate change may have a material adverse effect on our operating results and financial condition if we do not adequately assess and price for any increased frequency and severity of catastrophes resulting from these environmental factors.

There is widespread consensus in the scientific community that there is a long-term upward trend in global air and sea temperatures which is likely to increase the severity and frequency of severe weather events over the coming decades. Rising sea levels are also expected to add to the risks associated with coastal flooding in many geographical areas. Large scale climate change could also increase both the frequency and severity of natural catastrophes and our loss costs associated with property damage and business interruption due to storms, floods and other weather-related events. In addition, global climate change could impair our ability to predict the costs associated with future weather events and could also give rise to new environmental liability claims in the energy, manufacturing and other industries we serve.

Given the scientific uncertainty of predicting the effect of climate cycles and climate change on the frequency and severity of catastrophes and the lack of adequate predictive tools, we may not be able to adequately model the associated exposures and potential losses in connection with such catastrophes which could have a material adverse effect on our business, financial condition or operating results.

We could face unanticipated losses from war, terrorism and political unrest, government action that is hostile to commercial interests and from sovereign, sub-sovereign and corporate defaults, and these or other unanticipated losses could have a material adverse effect on our financial condition or operating results.

We have substantial exposure to unexpected, large losses resulting from man-made catastrophic events such as, but not limited to, acts of war, acts of terrorism and losses resulting from political instability, government action that is hostile to commercial interests and sovereign, sub-sovereign and corporate defaults. These risks are inherently unpredictable as it is difficult to predict their occurrence with statistical certainty or to estimate the amount of loss such an occurrence may generate. Terrorist attacks around the globe and ongoing unrest in the Middle East and North Korea have highlighted the unpredictable but increasingly present threat of terrorism and political instability.

Terrorist events could generate greater interest in political violence insurance coverage and greater awareness of the risks multinational corporations face in conflict-prone regions. We closely monitor the amount and types of coverage we provide for terrorism risk under insurance policies and reinsurance treaties. Even in cases where we have deliberately sought to exclude such coverage, there can be no assurance that a court or arbitration panel will interpret policy language or issue a ruling favorable to us. Accordingly, we may not be able to eliminate our exposure to terrorist events and there remains a risk that our reserves will not be adequate to cover such losses should they materialize. Notably, the Terrorism Risk Insurance Program Reauthorization Act of 2019 (the "TRIA Reauthorization") does not provide coverage for reinsurance losses. In addition, we have limited terrorism coverage for exposure to catastrophe losses related to acts of terrorism in the reinsurance that we purchase. Although the TRIA Reauthorization provides benefits in the event of certain acts of terrorism occurring in the United States, those benefits are subject to a deductible and other limitations.

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

Our credit and political risk line of business also provides non-payment coverage on specific loan obligations. We insure sovereign non-payment and corporate non-payment as a result of commercial as well as political risk events. The vast majority of the corporate non-payment credit insurance provided is for single-named illiquid risks, primarily in the form of senior bank loans that can be individually analyzed and underwritten. We also avoid terms in our credit insurance contracts which introduce liquidity risk, most notably, in the form of a collateralization requirement upon a ratings downgrade. We also attempt to manage our exposure, by among other things, setting credit limits by country, region, industry and individual counterparty and regularly reviewing our aggregate exposures. However, due to globalization, political instability in one region can spread to other regions.

Geopolitical uncertainty regarding a variety of domestic and international matters, such as the U.S. political and regulatory environment, the potential for default by one or more European sovereign debt issuers and Brexit (as defined below) could have a material adverse effect on our results of operations or financial condition.

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

As industry practices and legislative, regulatory, judicial, social, financial, technological and other environmental conditions change, unexpected and unintended issues related to claims and coverage may emerge. These issues may adversely affect our business by either extending coverage beyond our underwriting intent or by increasing the frequency and severity of claims. In some instances, these changes may not become apparent until after we have issued insurance or reinsurance contracts that are affected by the changes. As a result, the full extent of liability under our insurance or reinsurance contracts may not be known for many years after issuance.

One emerging risk currently facing the property and casualty industry is commonly referred to as the opioid crisis. Numerous lawsuits have been filed on behalf of states, counties and municipalities alleging a variety of claims and seeking compensatory and other damages caused by the opioid crisis. In general, defendants named in these lawsuits have been major pharmaceutical companies, wholesale distributors, retail pharmacies and doctors. Since these lawsuits are in early stages, we are unable to predict the outcome of these lawsuits or their potential impact to our financial results.

In addition, the effect of the COVID-19 outbreak on the property and casualty industry is not yet known. Like many property and casualty (re)insurers, we have possible exposure to the contingency market and cancellation losses stemming from the COVID-19 outbreak and could also face COVID-19 related claims from credit and surety lines and potential exposure from business interruption. Whether the virus could trigger coverage under certain products is dependent on specific policy language, terms and exclusions. There is a risk, however, that legislative, regulatory, judicial or social influences may extend coverage beyond our intended contractual obligations or result in an increase in the frequency or severity of claims beyond expected levels.

The (re)insurance business is historically cyclical and we expect to experience periods with excess underwriting capacity and unfavorable premium rates and policy terms and conditions.

The insurance and reinsurance industry has historically been cyclical. It is characterized by periods of intense competition on price and policy terms and conditions due to excessive underwriting capacity (a “soft” market) and periods when shortages of capacity permit favorable premium levels (a “hard” market). The supply of (re)insurance has increased over the past several years as a result of capital provided by new entrants to the market, including alternative third-party capital providers, and the commitment of additional capital by existing or new (re)insurers which has caused premium rates to decrease. Further development of these factors could lead to a significant reduction in premium rates, less favorable policy terms and conditions and fewer submissions for our underwriting services. In addition, hard markets, if any, are likely to be shorter and more regional than in the past as a result of this new capital. Changes in the frequency and severity of losses suffered by insureds and insurers may also significantly affect the cycles of the (re)insurance business. In addition, the cycle may fluctuate as a result of changes in economic, legal, political and social factors. Since cyclicity is due in large part to the collective actions of insurers, reinsurers and general economic conditions and the occurrence of unpredictable events, we cannot predict the timing or duration of changes in the market cycle. If we fail to manage the cyclical nature of the (re)insurance business, our operating results and financial condition could be materially adversely affected.

Additionally, a majority of our insurance policies and reinsurance contracts are for a one-year term. We make assumptions about the renewal rate and pricing of our prior year’s policies and contracts in our financial forecasting process. If actual renewals do not meet expectations, our gross written premiums in future fiscal periods and our future operating results and financial condition could be materially adversely affected. For our reinsurance business, this risk is especially prevalent in the first quarter of each year when a large number of annual reinsurance contracts are subject to renewal.

A material proportion of our business relies on the assessment and pricing of individual risks by third parties.

We authorize managing general agents, general agents and other producers to write business on our behalf from time to time within underwriting authorities we prescribe. We rely on the underwriting controls of these agents and producers to write business within the underwriting authorities we provide. Although we monitor our underwriting on an ongoing basis, our monitoring efforts may not be adequate and our agents and producers may exceed their underwriting authorities or otherwise breach obligations owed to us. There is also the risk that we may be held responsible for obligations that arise from the acts or omissions of third parties if they are deemed to have acted on our behalf. In addition, our agents, producers, insureds or other third parties may commit fraud or otherwise breach their obligation to us. To the extent that our agents, producers, insureds or

other third parties exceed their authorities, commit fraud or otherwise breach obligations owed to us, our operating results and financial condition may be materially adversely affected.

Our reliance on third-party assessment and pricing of individual risk extends to our reinsurance treaty business. Similar to other reinsurers, we do not separately evaluate each of the individual risks assumed under most reinsurance treaties. We are therefore largely dependent on the original underwriting decisions made by ceding companies. We are subject to the risk that the ceding companies may not have adequately evaluated the risks to be reinsured and that the premiums ceded to us may not adequately compensate us for the risks we assume and the losses we may incur. As a result of this reliance on ceding companies, our operating results and financial condition may be materially adversely affected.

The failure of any risk management and loss limitation methods we employ could have a material adverse effect on our financial condition and operating results.

We employ various risk management and loss limitation methods. We seek to manage our loss exposure by maintaining disciplined underwriting processes designed to guide the pricing, terms and acceptance of risk. These processes, which may include the use of pricing models, are intended to ensure that premiums received are sufficient to cover the expected levels of attritional losses and a contribution to the cost of catastrophes and large losses, where necessary. We also seek to mitigate our loss exposure by writing a number of our insurance and reinsurance contracts on an excess of loss basis, such that we only pay losses that exceed a specified retention. We also seek to limit certain risks, such as catastrophes and political risks, by geographic diversification. Geographic zone limitations involve significant underwriting judgments, including the determination of zone boundaries and the allocation of policy limits to zones. In the case of proportional (also known as pro rata) property reinsurance treaties, we often seek per occurrence limitations or loss and loss expense ratio caps to limit the impact of losses from any one event, although we may not be able to obtain such limits in certain markets. Various provisions in our policies intended to limit our risks, such as limitations or exclusions from certain coverage and choice of forum, may not always be enforceable. Purchasing reinsurance is another loss limitation method we employ which may not always respond in the way intended due to disputes relating to coverage terms, exclusions or counterparty credit risk.

There are inherent limitations in all of these tactics and it is possible that an event or series of events could result in loss levels that could have an adverse effect on our financial condition and results of operations. It is also possible that our controls and monitoring efforts may be ineffective, permitting one or more underwriters to exceed their underwriting authority and cause us to (re)insure risks outside the agreed upon guidelines or that losses could manifest themselves in ways that we do not anticipate and that our risk mitigation strategies are not designed to address. Additionally, various provisions in our policies, such as limitations or exclusions from coverage or choice of forum negotiated to limit our risk may not be enforceable in the manner we intend. As a result, one or more natural catastrophes and/or terrorism or other events could result in claims that substantially exceed our expectations which could have a material adverse effect on our financial condition or operating results.

The reinsurance that we purchase may not always be available on favorable terms or we may choose to retain a higher proportion of particular risks compared to previous years.

From time to time, market conditions have limited, and in some cases prevented, insurers and reinsurers from obtaining the types and amounts of reinsurance that they consider adequate for their business needs. Accordingly, we may not be able to obtain our desired amount of reinsurance or retrocession protection on terms that are acceptable to us from entities with a satisfactory credit rating or which is collateralized. Even if such capacity is available, we may also choose to retain a higher proportion of particular risks than in previous years due to pricing, terms and conditions or strategic emphasis. We may also seek alternative means of transferring risk, including expanded participation via our Aspen Capital Markets platform in alternative reinsurance structures. These solutions may not provide commensurate levels of protection compared to traditional retrocession. Our inability to obtain adequate reinsurance or other protection for our own account at favorable prices and on acceptable terms could have a material adverse effect on our business, operating results and financial condition.

Our financial condition and operating results may be adversely affected if actual claims exceed our loss reserves.

Our operating results and financial condition depend on our ability to accurately assess the potential losses associated with the risks that we (re)insure. While we believe that our loss reserves as of December 31, 2019 are adequate, establishing an appropriate level of loss reserves is an inherently uncertain process and requires a considerable amount of judgment. There are many factors that would cause our reserves to increase or decrease, which include, but are not limited to, changes in claim severity, changes in the expected level of reported claims, judicial action changing the scope and/or liability of coverage, changes in the legislative, regulatory, social and economic environment and unexpected changes in loss inflation. In addition, changes in the level of inflation also result in an increased level of uncertainty in our estimation of loss reserves, particularly for those lines of business that are considered “long-tail,” such as casualty, as they require a relatively long period of time to

finalize and settle claims for a given accident year. To the extent actual claims exceed our expectations, we will be required to recognize the less favorable experience immediately which could cause a material increase in our provisions for liabilities and a reduction in our profitability, including operating losses and reduction of capital.

For example, if catastrophic events or other large losses occur, we may fail to adequately estimate our reserve requirements and our actual losses and loss expenses may deviate, perhaps substantially, from our reserve estimates. Reserving for losses in the property and catastrophe markets is inherently complicated in that losses in excess of the attachment level of the policies are characterized by high severity and low frequency, and other factors which could vary significantly as claims are settled. This limits the volume of relevant industry claims experience available from which to reliably predict ultimate losses following a loss event.

While we believe that our earliest accident years are capable of providing us with meaningful actuarial indications, estimates and judgments for new (re)insurance lines of business are more difficult to make than those made for more mature lines of business because we have more limited historical information through December 31, 2019. A significant part of our current loss reserves is in respect of incurred but not reported (“IBNR”) reserves. This IBNR reserve is based almost entirely on estimates involving actuarial and statistical projections of our expectations of the ultimate settlement and administration costs. In addition to limited historical information for certain lines of business, we utilize actuarial models as well as historical insurance industry loss development patterns to establish loss reserves. Accordingly, actual claims and claim expenses paid may deviate, perhaps substantially, from the reserve estimates reflected in our financial statements, which could materially adversely affect our financial results.

Only reserves applicable to losses incurred up to the reporting date may be set aside in our financial statements, with no allowance for future losses. Our calculation of reserves for losses and loss expenses also includes assumptions about future payments for settlement of claims and claims-handling expenses, such as medical treatment and litigation costs. We write casualty business in the United States, the United Kingdom, Australia and certain other territories where claims inflation has in many years run at higher rates than general inflation. To the extent inflation causes these costs to increase above reserves established for these claims, we will be required to increase our loss reserves with a corresponding reduction in our net income in the period in which the deficiency is identified, which could materially adversely affect our financial results.

Market and Liquidity Risks

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

We invest the net premiums we receive unless, or until such time as, we pay out losses and/or until they are made available for distribution to ordinary and preferred shareholders, to pay interest on or redemption of debt and preferred shares, or otherwise used for general corporate purposes. Investment results comprise a substantial portion of our income. For the year ended December 31, 2019, we had net investment income of \$197.3 million, which represented approximately 8% of total revenues. In addition, for the year ended December 31, 2019, we recorded net realized and unrealized gains and losses on investments of \$86.2 million and \$130.2 million of losses on interest rate swaps. We are accordingly exposed to significant financial and capital market risks, including changes in interest rates, credit spreads, and real estate prices, foreign exchange rates, market volatility, the performance of the economy in general, and other factors outside our control.

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

Our fixed maturity portfolio is primarily invested in high quality, investment grade securities, including collateralized loan obligations (“CLOs”). However, we invest a portion of the portfolio in securities that are below investment grade. We also invest a portion of our portfolio in other investments such as unrated private fixed and floating rate investments, and other specialty asset classes. These securities generally pay a higher rate of interest or return and may have a higher degree of credit or default risk. These securities may also be less liquid in times of economic weakness or market disruptions.

In addition, we invest directly and indirectly in private loans and real estate assets, which, as described more fully below, are subject to additional risks.

Changes in the method for determining the London Interbank Offered Rate (“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 market floating reference rate), a number of British Bankers’ Association (“BBA”) member banks have entered into settlements with certain regulators and law enforcement agencies with respect to the alleged manipulation of LIBOR in recent years. Actions by the BBA, regulators or law enforcement agencies as a result of these or future events, are expected to result in changes to the manner in which LIBOR and replacement rate(s) are determined. Potential changes, or uncertainty related to such potential changes, may adversely affect the market for securities referencing LIBOR, which in turn could have an adverse effect on our LIBOR-linked investments as well as our credit facilities, such as the letter of credit facilities with commercial lenders. 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 or cost of capital.

In addition, the United Kingdom’s Financial Conduct Authority has announced its desire to phase out the use of LIBOR by the end of 2021, which may affect investments and borrowings. If LIBOR ceases to exist, we may need to renegotiate the terms of certain of our investments or our credit facilities which utilize LIBOR as a factor in determining the interest rate, including possibly to replace LIBOR with the new standard that is established. The U.S. Federal Reserve has also 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. It is not possible to predict how investment and credit 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, including the effectiveness or ineffectiveness of hedges, however, such changes may adversely impact the value of our investments and our cost of such forms of capital.

Our investments in private, secured commercial mortgage loans (CML) and private, secured middle market loans (MML) are subject to credit risk, market risk, servicing risk, loss from catastrophic events and other risks, which could diminish the value that we obtain from such investments.

As of December 31, 2019, 2.3% of our total invested assets were invested in private, secured commercial mortgage loans (CML) and 1.6% in private, secured middle market loans (MML). Defaults by borrowers in the payment or performance of their obligations underlying these assets could reduce our investment income and realized investment gains or result in the recognition of investment losses. For example, the value of our real estate-related assets depends in part on the financial condition of the borrowers, the value of the real properties underlying the mortgages and, for commercial properties, the financial condition of the tenants of the properties underlying those mortgages, as well as general and specific economic trends affecting the overall default rate. An unexpectedly high rate of default on commercial mortgages and/or middle market loans may limit substantially the ability of the issuer of such securities to make payments to the loan holders, reducing the value of those securities.

The CML and MML we hold, face both default and delinquency risk. An increase in the delinquency or default rate of our CML / MML portfolios or geographic or sector concentration within our CML / MML portfolios could materially and adversely impact our financial condition and results of operations. Any failure to manage these risks effectively could materially and adversely affect our financial condition and results of operations. In general, any significant weakness in the broader macro economy or significant problems in a particular real estate market or corporate market may cause a decline in the value of the real estate market and corporate assets securing the loans in that market, thereby increasing the risk of delinquency, default and foreclosure. This could, in turn, have a material adverse effect on our credit loss experience. As of December 31, 2019, none of our CML or MML positions were delinquent or in the process of foreclosure.

For more information on our CML and MML investments, which we also refer to as “privately-held investments,” refer to Item 18, Note 4 of our consolidated financial statements, “Investments.”

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

We seek to configure our investment portfolio to provide and maintain sufficient liquidity to support our insurance, reinsurance and other obligations. However, in order to provide necessary long-term returns and to achieve our strategic goals, at times a portion of our assets may be relatively illiquid. A portion of our investments are in securities that are not publicly traded or that otherwise lack liquidity, such as our privately-held fixed maturity and floating rate securities, below investment grade securities, and alternative investments.

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

We also invest in CLOs. As of December 31, 2019, 7.3% of our total invested assets were invested in CLOs. Control over the CLOs in which we invest is exercised through collateral managers, who may take actions that could adversely affect our interests, and we may not have the right to direct collateral management. There may also be less information available to us regarding the underlying debt instruments held by CLOs than if we had invested directly in the debt of the underlying companies. Our investments in CLOs are also subject to liquidity risk as there is a less liquid market for CLOs. Accordingly, we may suffer unrealized depreciation and could incur realized losses in connection with the sale of our CLO interests.

Volatility and uncertainty in general economic conditions and in financial, commodity and mortgage markets could adversely impact our business prospects, operating results, financial position and liquidity.

In recent years, and in recent months due to the COVID-19 outbreak, global financial markets have been characterized by volatility and uncertainty. Unfavorable economic conditions could increase our funding costs, limit our access to the capital markets or make credit harder to obtain. Uncertainties in the financial and commodity markets may also affect our counterparties which could adversely affect their ability to meet their obligations to us. For example, a significant portion of the business sourced by Crop Re Services LLC (“Crop Re”) provides revenue protection to farmers for their expected crop revenues which can be affected by changes in crop prices. Significant losses to our agriculture classes of business could be incurred in the event of a decline in agricultural commodity prices prior to harvest which could, in turn, affect our financial condition or operating results.

Deterioration or volatility in the financial markets or general economic and political conditions could result in a prolonged economic downturn or trigger another recession and our operating results, financial position and liquidity could be materially and adversely affected. Further, unfavorable economic conditions could have a material adverse effect on certain of the lines of business we write, including, but not limited to, credit and political risks, professional liability and surety risks.

We provide credit reinsurance to mortgage guaranty insurers and commercial credit insurers. We are exposed to the risk that losses from mortgage insurance materially exceed the net premiums that are received to cover such risks, which may, subject to liability caps, result in operating and economic losses to us. Mortgage insurance underwriting losses that have the potential to exceed our risk appetite are associated with the systemic impacts of severe mortgage defaults, driven by large scale economic downturns and high unemployment. As of December 31, 2019, the majority of our exposure to mortgage-related underwriting risks was in the United States, with a smaller amount of exposure in Australia.

The determination of the amount of allowances and impairments taken on our investments is highly subjective and could materially impact our operating results or financial position.

We perform reviews of our investments on a quarterly basis to determine whether declines in fair value below the cost basis are considered other-than-temporary impairments in accordance with applicable accounting guidance regarding the recognition and presentation of other-than-temporary impairments. The process of determining whether a security is other-than-temporarily impaired requires judgment and involves analyzing many factors. For additional information regarding this process, and upcoming changes to the applicable accounting policies, refer to Item 18, Note 2(c) of our consolidated financial statements, “Basis of Preparation and Significant Accounting Policies —Accounting for Investments, Cash and Cash Equivalents.”, and Item 18, Note 2(c) of our consolidated financial statements, “Basis of Preparation and Significant Accounting Policies — Accounting Pronouncements.” Assessing the accuracy of the level of impairments taken, and allowances reflected, in our financial statements is inherently uncertain given the subjective nature of the process. Furthermore, additional impairments may need to be taken or allowances provided in the future with respect to events that may impact specific investments. While historically our other-than-temporary impairments have not been material, historical trends may not be indicative of future impairments or allowances. Thus, future material impairments themselves or any error in accurately accounting for them may have a material adverse effect on our financial condition or results of operations.

Our financial condition or operating results may be adversely affected by currency fluctuations that we may not be effective at mitigating.

Our reporting currency is the U.S. dollar, however, a significant portion of our operations is conducted outside the United States in a variety of foreign (non-U.S.) currencies. Accordingly, we are subject to legal, economic and market risks associated

with devaluations and fluctuations in currency exchange rates. Our assets and liabilities denominated in foreign currencies are therefore exposed to changes in currency exchange rates, which may be material. The principal currencies creating foreign exchange risk are the British pound sterling, the Euro, the Swiss Franc, the Australian Dollar, the Canadian Dollar and the Singapore Dollar. At December 31, 2019, approximately 15.9% of gross written premiums were denominated in non-U.S. currencies. We employ various strategies, including the use of foreign exchange forward contracts and other derivative financial instruments, to manage our exposure to foreign currency exchange risk. To the extent that these exposures are not fully offset or hedged, or the hedges are ineffective at mitigating adverse effects, our financial results and condition may be negatively impacted by fluctuations in foreign currency exchange rates. Sovereign debt concerns in Europe and related financial restructuring efforts, which may cause the value of the Euro to deteriorate, and Brexit (defined below), which caused significant volatility in currency exchange rates, especially between the U.S. dollar and the British pound, may magnify these risks.

Credit Risks

Our operating results may be adversely affected by the failure of policyholders, brokers or other intermediaries to honor their payment obligations.

In accordance with industry practice, we generally pay amounts owed on claims under our insurance and reinsurance contracts to brokers and these brokers, in turn, pay these amounts to the policyholders that purchased insurance and reinsurance from us. In some jurisdictions where we write a significant amount of business, if a broker fails to make such a payment it is highly likely that we will be liable to the policyholder for the deficiency because of local laws or contractual obligations. Likewise, when the policyholder pays premiums for policies to brokers for payment to us, these premiums are generally considered to have been paid and, in most cases, the policyholder will no longer be liable to us for those amounts whether or not we have actually received the premiums. Consequently, we assume a degree of credit risk associated with brokers with respect to most of our (re)insurance business.

In addition, bankruptcy, liquidity problems, distressed financial conditions or the general effects of economic recession may increase the risk that policyholders may not pay a part of, or the full amount of, premiums owed to us despite an obligation to do so. The terms of our contracts or local law may not permit us to cancel our insurance even if we have not received payment. If non-payment becomes widespread, whether as a result of bankruptcy, lack of liquidity, adverse economic conditions, operational failure, delay due to litigation, bad faith and fraud or other events, it could have a material adverse impact on our business and operating results.

Our financial condition and operating results may be adversely affected by the failure of one or more reinsurers or capital market counterparties to meet their payment obligations.

We purchase reinsurance for our own account in order to mitigate the effect of certain large and multiple losses upon our financial condition. Our reinsurers or capital market counterparts are dependent on their ratings in order to continue to write business and some have suffered downgrades in ratings in the past as a result of their exposures. Our reinsurers or capital market counterparties may also be affected by adverse developments in the financial markets, which could adversely affect their ability to meet their obligations to us. Insolvency of these counterparties, their inability to continue to write business or reluctance to make timely payments under the terms of their agreements with us could have a material adverse effect on us because we remain liable to our insureds or cedants in respect of the reinsured risks.

Our liquidity and counterparty risk exposures may be adversely affected by the impairment of financial institutions.

We routinely execute transactions with counterparties in the financial services industry, including brokers and dealers, commercial banks, investment banks and other institutions. We are exposed to the risk that these counterparties are unable to make payments or provide collateral to a third-party when required, or that securities that we own are required to be sold at a loss in order to meet liquidity, collateral or other payment requirements. In addition, our investments in various fixed income securities issued by financial institutions exposes us to credit risk in the event of default by these issuers. With respect to derivatives transactions that require exchange of collateral, due to mark to market movements, our risk may be exacerbated in the event of default by a counterparty. In such an event, we may not receive the collateral due to us from the defaulted counterparty. Refer to Item 18, Note 8 of our consolidated financial statements, "Derivative Contracts" for information on the interest rate swaps we executed in January 2019. Any such losses could materially and adversely affect our business and operating results.

Strategic Risks

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

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

Competition and consolidation in the (re)insurance industry could reduce our growth and profitability.

Insurance and reinsurance markets are highly competitive. We compete on an international and regional basis with major U.S., Bermuda, European and other international (re)insurers and underwriting syndicates, including Lloyd's, some of which have greater financial, marketing and management resources than we do. We also compete with new companies that continue to be formed to enter the (re)insurance markets. In addition, capital market participants have created alternative products that are intended to compete with reinsurance products. New and alternative capital inflows in the (re)insurance industry and the retention by cedants of more business have caused an excess supply of (re)insurance capital. We have sought to address this risk by developing our own capital markets capability but there is no guarantee it will succeed.

There has also been a large volume of merger and acquisition activity in the (re)insurance sector in recent years which may continue and we may experience increased competition as a result of that consolidation with consolidated entities having enhanced market power. As the (re)insurance industry consolidates, competition for customers will become more intense and the importance of acquiring and properly servicing each customer will become greater.

Increased competition could result in fewer submissions, lower premium rates, less favorable policy terms and conditions and greater expenses relating to customer acquisition and retention, which could have a material adverse impact on our operating results or financial condition.

Our Operating Subsidiaries are rated and our Lloyd's business benefits from a rating by one or more of A.M. Best, S&P and Moody's and a decline in any of these ratings could adversely affect our standing among brokers and customers and cause our premiums and earnings to decrease.

Ratings have become an increasingly important factor in establishing the competitive position of insurance and reinsurance companies. Rating agencies represent independent opinions of the financial strength of insurers and reinsurers and their ability to meet policyholder obligations. The ratings of our Operating Subsidiaries are subject to periodic review by, and may be placed on credit watch, revised downward or revoked at the sole discretion of, A.M. Best, Moody's or S&P. Refer to Item 4, "Business Overview - Ratings."

If our Operating Subsidiaries' or Lloyd's ratings are reduced from their current levels by any of A.M. Best, Moody's or S&P, our competitive position in the (re)insurance industry might suffer and it may be more difficult for us to market our products, expand our (re)insurance portfolio and renew our existing (re)insurance policies and agreements. A rating downgrade may also require us to establish trusts or post letters of credit for ceding company clients and could trigger provisions allowing some clients to terminate their (re)insurance contracts with us. Some contracts also provide for the return of premium to the ceding client in the event of a rating downgrade. It is increasingly common for our reinsurance contracts to contain such terms. Whether a cedant would exercise any of these rights could depend on various factors, such as the reason for and the extent of such downgrade, the prevailing market conditions and the pricing and availability of replacement reinsurance coverage. A downgrade could result in a substantial loss of business as ceding companies and brokers that place such business move to other reinsurers with higher ratings and therefore such downgrade may materially and adversely impact our business, operating results, liquidity and financial flexibility.

In addition, a downgrade of the financial strength rating of Aspen U.K., Aspen Bermuda, AAIC or Aspen Specialty by A.M. Best below "B++" would constitute an event of default under our revolving credit facility with Barclays Bank PLC and other lenders. Additionally, the cost and availability of unsecured financing are generally dependent on the borrower's long-term and short-term debt ratings. A lower rating may lead to higher borrowing costs, thereby adversely impacting our liquidity and financial flexibility and by extension our business, financial condition and results of operations.

We have experienced a ratings downgrade and there can be no assurance that we and our subsidiaries will not experience any further downgrades, which may result in an adverse effect on our business, financial condition and operating results.

As noted above, ratings with respect to claims paying ability and financial strength have become increasingly important factors in establishing the competitive position of insurance and reinsurance companies and will also impact the cost and availability of capital to an insurance company. Ratings by A.M. Best and Standard & Poor's Financial Services LLC ("S&P") represent an important consideration in maintaining customer confidence in us and in our ability to market insurance products. Rating organizations regularly analyze the financial performance and condition of insurers.

On March 26, 2020, S&P downgraded the financial strength and issuer credit ratings of Aspen Bermuda and Aspen U.K. from "A" (Strong - Negative outlook) to "A-" (Stable outlook). Our U.S. Operating subsidiaries, AAIC and Aspen Specialty, are not currently rated by S&P and have a financial strength rating of "A" (Excellent) by A.M. Best with a negative outlook. On April 1, 2020, A.M. Best affirmed the financial strength rating of "A" (Excellent) for Aspen Bermuda, Aspen U.K. Aspen Specialty and AAIC but revised its outlook to negative from stable. Our Lloyd's operations benefit from the Lloyd's market financial strength rating of "A" (Excellent) with a stable outlook by A.M. Best and "A+" (Strong) with a stable outlook by S&P.

S&P is a widely recognized insurance company rating agency and some policyholders are required to obtain insurance coverage from insurance companies that have an "A-" (Strong) rating or higher from S&P. Because S&P continually monitors companies with regard to their ratings, our ratings could change at any time. Although the Company is still assessing the impact of this recent downgrade, we do not believe that this change in rating will significantly impact where the Company conducts its business operations. However, the downgrade may impair our ability to sell insurance policies and could materially and adversely affect our competitive position in the insurance industry, future financial condition and operating results.

Any future acquisitions, growth of our operations through the addition of new lines of (re)insurance business, expansion into new geographic regions and/or joint ventures or partnerships may expose us to risks.

As part of our long-term strategy, we have pursued, and may continue to pursue, growth through acquisitions and/or strategic investments in new businesses. We may also decide to sell businesses or enter into strategic ventures with third parties. Further, we may engage in confidential acquisition negotiations that are not publicly announced unless and until those negotiations result in a definitive agreement. Such negotiations would likely require management and key personnel to expend considerable time and effort on the negotiations, which may detract from their ability to run our core business. In addition, an acquisition can be expensive and time consuming. Although considerable funds may be expended in the negotiations phase, an acquisition or disposition may ultimately not be completed for a variety of reasons.

We have limited experience in identifying quality merger or acquisition candidates, as well as successfully acquiring and integrating their operations. Successful integration depends, among other things, on our ability to effectively integrate acquired businesses or new personnel into our existing risk management techniques, manage any regulatory issues created by our entry into new markets and geographic locations, retain key personnel and obtain personnel required for expanded operations. The failure to integrate successfully or to manage the challenges presented by the integration process may have an adverse effect on our business, financial condition or results of operations.

We depend on a few brokers for a large portion of our insurance and reinsurance revenues and the loss of business provided by any one of those brokers could adversely affect us.

We market our (re)insurance worldwide primarily through (re)insurance brokers and derive a significant portion of our business from a limited number of brokers. Refer to Item 4, "Business Overview - Business Distribution" below for our principal brokers by segment. Our relationships with these brokers are based on the quality of our underwriting and claim services, as well as our financial strength ratings. Any deterioration in these factors could result in the brokers advising our clients to place their business with other (re)insurers. In addition, these brokers also have, or may in the future acquire, ownership interests in insurance and reinsurance companies that may compete with us and these brokers may favor their own (re)insurers over other companies. Loss of all or a substantial portion of the business provided by one or more of these brokers could have a material adverse effect on our business.

In addition, there has been a trend of increased consolidation of agents and brokers. As we distribute most of our products through agents and brokers, consolidation could impact our ability to access business and our relationships with, and fees paid to, agents and brokers. In the Lloyd's market, independent London wholesalers continue to be acquired by larger global brokers, which may result in enhanced market power for these larger brokers in placing (re)insurance. Consolidation of distributors may also increase the likelihood that distributors will try to renegotiate the terms of existing selling agreements to terms less

favorable to us. As brokers merge with or acquire each other, any resulting failure or inability of brokers to market our products successfully, or the loss of a substantial portion of the business sourced by one or more of our key brokers, could have a material adverse effect on our business and results of operations.

Our efforts to expand in targeted markets or develop products may not be successful and may create increased risks.

A number of our planned business initiatives involve expanding existing products in targeted markets or developing new products. For example, Aspen Capital Advisors, Inc. is registered as an investment adviser with the SEC and advises on insurance-linked securities. Through Aspen Capital Markets, our alternative reinsurance division, we have also expanded our participation in the alternative reinsurance market through collateralized reinsurance arrangements. To develop new markets and products, we may need to make substantial capital and operating expenditures, which may adversely affect our results in the near term. In addition, the demand for new markets or products may not meet our expectations. To the extent we are able to expand in new markets or market new products, our risk exposures may change and the data and models we use to manage such exposures may not be as sophisticated as those we use in existing markets or with existing products. This, in turn, could lead to losses in excess of expectations that individually or in the aggregate may materially adversely affect our business, financial condition and results of operations.

We are exposed to risks in connection with our management of alternative reinsurance platforms on behalf of investors in any entities Aspen Capital Markets manages or could manage in the future.

Those of our subsidiaries that are engaged in the management of alternative reinsurance platforms as part of our Aspen Capital Markets division may owe certain legal duties and obligations to third-party investors (including reporting obligations) and are subject to a variety of often complex laws and regulations relating to the management of those structures. Although we continually monitor our policies and procedures to ensure compliance, 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 laws or regulations which could result in significant liabilities, penalties or other losses and significantly harm our business and results of operations.

In addition, our third-party investors may decide not to renew their interests in the entities we manage, such as Peregrine Reinsurance Ltd (“Peregrine”), which could materially impact the financial condition of such entities. Certain of our third-party capital investors provide significant capital investment in respect of the entities we manage. The loss or alteration of this capital support could be detrimental to our financial condition and results of operations. Moreover, we can provide no assurance that we may be able to attract and raise additional third-party capital for our existing managed entities or for potential new managed entities and therefore we may forego existing and/or potential attractive fee income and other income-generating opportunities.

Furthermore, notwithstanding any capital holdback, we may decide to return to our investors all or a portion of the third-party capital held by entities we manage as collateral prior to the maturity specified in the terms of the particular underlying transactional documents. A return of capital to our investors is final. As a result, if we release collateral early and capital is returned to our investors, we may not have sufficient collateral to pay the claims associated with such losses in the event losses are significantly larger than we anticipated.

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

Our future capital requirements depend on many factors, including our ability to write new business successfully, deploy capital into more profitable business lines, identify acquisition opportunities, manage investments and preserve capital in volatile markets, and establish premium rates and reserves at levels sufficient to cover losses. To the extent our funds are insufficient to fund future operating requirements or cover claims losses, we may need to raise additional funds through corporate finance transactions or curtail our growth and reduce our liabilities. Any such financing, if available at all, may be on terms that are not favorable 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 regulatory filings and legal issues. If we cannot obtain adequate capital on favorable terms, or obtain it at all, our business, financial condition and operating results could be adversely affected.

Our debt, credit and International Swaps and Derivatives Association (“ISDA”) agreements may limit our financial and operational flexibility, which may affect our financial condition, liquidity and ability to conduct our business.

We have incurred indebtedness and may incur additional indebtedness in the future. Additionally, we have entered into credit facilities with various institutions which provide revolving lines of credit to us and our Operating Subsidiaries and issue letters of credit to our clients in the ordinary course of business. We have also entered into ISDA agreements relating to derivative transactions. Refer to Item 18, Note 8 of our consolidated financial statements, “Derivative Contracts” for information on the interest rate swaps we executed in January 2019. The agreements relating to our debt, credit facilities and our ISDA agreements contain covenants that may limit our ability, among other things, to borrow money, make particular types of investments or other restricted payments, sell assets, merge or consolidate. Some of these agreements also require us to maintain specified ratings and financial ratios, including a minimum net worth covenant. If we fail to comply with these covenants or meet required financial ratios, the lenders or counterparties under these agreements could declare a default and demand immediate repayment of all amounts owed to them. As a result, our business, financial condition and operating results could be adversely affected.

If we are in default under the terms of these agreements, we may also be restricted in our ability to declare or pay any dividends, redeem, purchase or acquire any shares or make a liquidation payment and are at risk of cross-default on other arrangements. In addition, the cost and availability of these arrangements vary and any adverse change in the cost or availability of such arrangements could adversely impact our business, financial condition and operating results.

Regulatory Risks

Political, regulatory, governmental and industry initiatives may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects.

Certain of the laws and regulations to which our Operating Subsidiaries are subject are summarized in Item 4, “Business Overview - Regulatory Matters.” Changes in the laws and regulations relevant to our business may have a material adverse effect on our business, financial condition, results of operations, liquidity, cash flows and prospects. The laws and regulations of the jurisdictions in which our insurance and reinsurance subsidiaries are domiciled require, among other things, maintenance of minimum levels of statutory capital, surplus, and liquidity; various solvency standards; and periodic examinations of subsidiaries' financial condition. In some jurisdictions, laws and regulations also restrict payments of dividends and reductions of capital. Applicable statutes, regulations, and policies may also restrict the ability of these subsidiaries to write insurance and reinsurance policies, to make certain investments, and to distribute funds.

Some of these authorities regularly consider enhanced or new regulatory requirements intended to prevent future crises or otherwise assure the stability of institutions under their supervision. These authorities may also seek to exercise their supervisory authority in new and more robust ways, and new regulators could become authorized to oversee parts of our business. The purpose of insurance laws and regulations generally is to protect policyholders and ceding insurance companies, not our shareholders or noteholders. Failure to comply with or obtain appropriate authorizations and/or exemptions under any applicable laws and regulations could result in restrictions on our ability to do business or undertake activities that are regulated in one or more of the jurisdictions in which we conduct business and could subject us to fines, other sanctions and reputational injury.

It is not possible to predict all future impacts of these types of changes but they could affect the way we conduct our business and manage our capital, and may require us to satisfy increased capital requirements or to incur additional expenses, any of which, in turn, could affect our results of operations, financial condition and liquidity.

The foreign and U.S. federal and state laws and regulations that are applicable to our operations are complex and may increase the costs of regulatory compliance or subject our business to the possibility of regulatory actions or proceedings. In addition to insurance and financial industry regulations, our activities are also subject to relevant economic and trade sanctions, money laundering regulations, and anti-corruption laws including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act 2010, which may increase the costs of regulatory compliance, limit or restrict our ability to do business or engage in certain regulated activities, or subject us to the possibility of regulatory actions, proceedings and fines. The insurance industry is also affected by political, judicial, and legal developments that may create new and expanded regulations and theories of liability. The current economic and financial climates present additional uncertainties and risks relating to increased regulation and the potential for increased involvement of the U.S. and other governments in the financial services industry.

In addition, the terms of the U.S. federal multi-peril crop insurance (“MPCI”) program, which is administered by the Risk Management Agency (the “RMA”) of the U.S. Department of Agriculture, may change and adversely impact us. The Agricultural Act of 2014, also known as the 2014 U.S. Farm Bill, was signed into law in February 2014 and fixes the terms of the MPCI program through February 2019. The Agricultural Improvement Act of 2018, which amends the terms of the MPCI program, was passed by the U.S. Senate on December 12, 2018. The RMA periodically reviews and proposes changes to the Standard Reinsurance Agreement (“SRA”) used in connection with the MPCI program. Given that agriculture insurance premiums driven by the MPCI program represent a large portion of the business produced by the portfolio of CGBIC, such changes to the SRA could impact MPCI risk and profitability, and, in turn, adversely affect our financial results through our crop reinsurance business.

In the event or absence of changes in applicable laws and regulations in particular jurisdictions, we may from time to time face challenges, or changes in approach to oversight of our business from insurance or other regulators, including challenges resulting from implementing new or additional processes or procedures that cannot be quickly adapted to address new regulatory requirements.

We believe it is likely there will continue to be increased regulation of, and other forms of government participation in, our industry in the future, which could materially adversely affect our business by, among other things: providing reinsurance capacity in markets and to policyholders that we target or requiring our participation in industry pools and guaranty associations; further restricting our operational or capital flexibility; expanding the scope of coverage under existing policies; regulating the terms of our (re)insurance policies; adopting further or changing compliance requirements which may result in additional costs which may adversely impact our results of operation; or disproportionately benefiting the companies domiciled in one country over those domiciled in another.

Changes in regulations that adversely affect the U.S. mortgage insurance and reinsurance market could affect our operations significantly and could reduce the demand for mortgage insurance.

In addition to the general regulatory risks that are described herein, the reinsurance we write could also be indirectly affected by various additional regulations relating particularly to our U.S. mortgage reinsurance operations. U.S. federal and state regulations affect the scope of operations of mortgage guaranty insurers and commercial credit insurers, to whom we provide credit reinsurance. Legislative and regulatory changes could cause demand for private mortgage insurance to decrease, which could have an adverse impact on our U.S. mortgage reinsurance operations. Increases in the maximum loan amount that the U.S. Federal Housing Administration can insure, and reductions in the mortgage insurance premiums it charges, can reduce the demand for private mortgage insurance. Decreases in the maximum loan amounts government-sponsored enterprises, such as the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) (the “GSEs”), will purchase or guarantee, increases in GSE fees, or decreases in the maximum loan-to-value ratio for loans the GSEs will purchase, can also reduce demand for private mortgage insurance. Changes in these laws or regulations could have an indirect adverse impact on the profitability of our U.S. mortgage reinsurance business.

The United Kingdom’s decision to withdraw from the E.U. could adversely impact our business, results of operations and financial condition.

The Company faces new regulatory costs and challenges as a result of the U.K.’s decision to leave the E.U. (commonly known as “Brexit”). The U.K. left the E.U. as of January 31, 2020 pursuant to the terms of a withdrawal agreement concluded between the U.K. government and the E.U. Council, which allows for a transitional period during which the U.K.’s trading relationship with the E.U. will remain largely unchanged. The transition period is due to expire on December 31, 2020.

The uncertainty surrounding the implementation and effect of Brexit, the terms and conditions of such exit, the legal and regulatory framework that will apply to the U.K. and its relationship with the remaining members of the E.U. (including in relation to trade and services) upon expiration of the transitional arrangement has caused, and is likely to cause, increased economic volatility and market uncertainty globally, in particular volatility of currency exchange rates, interest rates and credit spreads. As well as short-term issues, the long-term effect of Brexit on the value of our investment portfolio at this time is uncertain, and such volatility and uncertainty will likely continue as negotiations progress to determine the future terms of the U.K.’s relationship with the E.U.

Brexit could lead to potentially divergent national laws and regulations as the U.K. determines which E.U. laws to replace or replicate. We may have to review our underwriting platforms and incur additional regulatory costs as a result. Aspen U.K. will likely lose its EEA financial services passport which provides it the license to operate across borders within the single EEA market without obtaining local regulatory approval where insurers and cedants are located. The Company’s EEA Lloyd’s operations are expected to be able to continue through Lloyd’s Brussels, however, operational and capital requirements relating thereto might result in increased costs or Funds at Lloyd’s and might not provide the same access to markets that the Company currently requires to conduct business in the EEA. In addition, depending on the terms agreed with the E.U. following the conclusion of the transitional arrangement, the U.K.’s regulatory regime in terms of capital adequacy, risk management and regulatory reporting for insurers could also diverge and no longer be equivalent to the E.U.’s current regime.

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

Unanticipated developments in accounting practices may require us to incur considerable additional expenses to comply with such developments, particularly if we are required to prepare information relating to prior periods for comparative purposes

or to apply the new requirements retroactively. Such developments may also significantly impact the presentation of such financial statements and may require restatements. The impact of changes in current accounting practices and future pronouncements cannot be predicted but they may affect the calculation of net income, net equity and other relevant financial statement line items.

Other Operational Risks

We could be adversely affected by the loss of one or more of our senior underwriters or key employees or by an inability to attract and retain senior staff.

Our success has depended and will continue to depend, in substantial part, on our ability to attract and retain our teams of underwriters in various business lines and other key employees. The loss of one or more of our senior underwriters could adversely impact our business by, for example, making it more difficult to retain clients or other business contacts whose relationship depends in part on the service of the departing personnel. In general, the loss of key services of any members of our current underwriting teams may adversely affect our business and operating results.

We also rely substantially upon the services of our senior management team. Although we have employment agreements with all members of our senior management team, if we were to unexpectedly lose the services of one or more of our senior management team or other key personnel, our business or ratings could be adversely affected. For example, an unplanned change in our senior management team could cause a risk of disruption to our business including, but not limited to, our underwriting, claims handling, reserving and financial reporting functions. We do not currently maintain key-man life insurance policies with respect to any of our employees.

We rely on the execution of complex internal processes to maintain our operations and the operational risks that are inherent to our business, including those resulting from fraud or employee errors or omissions, may result in financial losses.

We rely on the accurate execution of complex internal processes to maintain our operations. We seek to monitor and control our exposure to risks arising from these processes through a risk control framework encompassing a variety of reporting systems, internal controls, management review processes and other mechanisms. We cannot provide absolute assurance that these processes and procedures will effectively control all known risks or effectively identify unforeseen risks, or that our employees and third-party agents will effectively implement them. Loss may result from, among other things, fraud, errors, failure to document transactions properly, failure to obtain proper internal authorization, failure to comply with underwriting or other internal guidelines or failure to comply with regulatory requirements. Loss from these risks could adversely affect our business, results of operations and financial condition. In addition, insurance policies that we have in place with third parties may not protect us in the event that we experience a significant loss from these risks.

A failure in our operational systems or infrastructure or those of third parties, including those caused by security breaches or cyber-attacks could disrupt our business, damage our reputation and cause losses.

Our operations rely on the secure processing, storage, and transmission of confidential and other information and assets, including in our computer systems and networks. Our business, including our ability to adequately price products and services, establish reserves, provide an effective and secure service to our customers, value our investments and report our financial results in a timely and accurate manner, depends significantly on the integrity, availability and timeliness of the data we maintain, as well as the data and assets held through third-party outsourcers, service providers and systems. Cybersecurity and technology threats can include phishing scams, account takeovers, introductions of malware, attempts at electronic break-ins, and the computerized submission of fraudulent and/or duplicative payment requests. Any such breaches or interference (including attempted breaches or interference) by third parties or by insiders that may occur in the future could have a material adverse impact on our business, reputation, financial condition or results of operations.

In an effort to ensure the integrity of such data, we implement new security measures and systems and improve or upgrade our existing security measures and systems on a continuing basis. Although we have implemented administrative and technical controls and take protective actions to reduce the risk of cyber incidents and to protect our information technology and assets, and we endeavor to modify such procedures as circumstances warrant and negotiate agreements with third-party providers to protect our assets, such measures may be insufficient to prevent, among other things, unauthorized access, computer viruses, malware or other malicious code or cyber-attack, catastrophic events, system failures and disruptions (including in relation to new security measures and systems), employee errors or malfeasance, third-party (including outsourced service providers) errors or malfeasance, loss of assets and other security events (each, a "Security Event"). Like other global companies, we have from time to time experienced, and are likely to continue to be subject to, Security Events, none of which to date have had a material adverse impact on our business, results of operations or financial condition. As the breadth and complexity of

our security infrastructure continues to grow, the potential risk of a Security Event increases. If additional Security Events occur, these events may jeopardize our or our policyholders' or counterparties' confidential and other information processed and stored with us, and transmitted through our computer systems and networks, or otherwise cause interruptions, delays, or malfunctions in our, our policyholders', counterparties' or third parties' operations, or result in data loss or loss of assets which could result in significant losses and/or fines, reputational damage or a material adverse effect on our business, financial condition or operating results. We may be required to expend significant additional resources to modify our protective measures or to investigate and remediate vulnerabilities or other exposures and to pursue recovery of lost data or assets and we may be subject to litigation and financial losses. We currently maintain cyber liability insurance that provides third-party or first party liability coverages to protect us, subject to policy limits and coverages, against certain events that could be a Security Event. However, a Security Event could nonetheless have a material adverse effect on our operating results or financial condition.

Despite the contingency plans and facilities we have in place and our efforts to observe the regulatory requirements surrounding information security, our ability to conduct business may be adversely affected by a disruption of the infrastructure that supports our business in the communities in which we are located, or of outsourced services or functions, including a disruption involving electrical, communications, transportation, or other services we use. If a disruption occurs in one location and our employees in that location are unable to occupy our offices and conduct business or communicate with or travel to other locations, our ability to service and interact with policyholders may suffer and we may not be able to successfully implement contingency plans that depend on communication or travel. If sustained or repeated, such business interruption, system failure, service denial or data loss and/or damage could result in a deterioration of our ability to write and process business, provide customer service, pay claims in a timely fashion or perform other necessary business functions.

Evolving privacy and data security regulations could damage our reputation and cause losses.

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

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

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

Our internal controls over financial reporting may have gaps or other deficiencies.

Operational risk and losses can result from, among other things, fraud, errors, failure to document transactions properly or to obtain proper internal authorization, failure to comply with regulatory requirements, information technology failures and failure to appropriately transition new hires or external events. We continue to enhance our operating procedures and internal controls (including information technology initiatives and controls over financial reporting) to effectively support our business and our regulatory and reporting requirements. Refer to Item 15 “Changes in Internal Controls over Financial Reporting.” Our management does not expect that our disclosure controls or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. As a result of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons or by collusion of two or more people. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. As a result of the inherent limitations in a cost-effective control system, misstatement due to error or fraud may occur and not be detected.

Our internal control system is 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. However, our internal controls over financial reporting may have gaps or other deficiencies and there is no guarantee that significant deficiencies or material weaknesses in internal controls may not occur. Any such gaps or deficiencies may require significant resources to remediate and may also expose us to litigation, regulatory fines or penalties, or other losses. Inadequate process design or a failure in operating effectiveness could result in a material misstatement of our financial statements due to, but not limited to, poorly designed systems, changes in end-user computing, poorly designed IT reports, ineffective oversight of outsourced processes, failure to perform relevant management reviews, accounting errors or duplicate payments, any of which could result in a restatement of financial accounts. Refer to Item 15 “Management’s Annual Report on Internal Control over Financial Reporting” for additional information regarding the material weakness identified in our internal control over financial reporting identified during the fourth quarter of 2019.

We identified a material weakness in our internal control over financial reporting as part of management’s assessment, and if we are unable to remediate and improve our internal controls, we may not be able to accurately or timely report our future financial results

As part of management’s assessment of its internal control over financial reporting for the fiscal year ending December 31, 2019, management identified a material weakness as defined under the Exchange Act and by the U.S. Public Company Accounting Oversight Board in our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company’s annual financial statements will not be prevented or detected on a timely basis.

During the fourth quarter of 2019, the Company identified a control deficiency regarding the recording of adjustment premiums on certain excess of loss ceded reinsurance contracts. The deficiency resulted in a delay in the recognition of ceded premium adjustments for a limited number of excess of loss reinsurance contracts. The recognition of additional ceded premiums did not constitute a material adjustment in the current or prior periods. Moreover, we made progress in remediating the material weakness (Refer to Item 15. “Controls and Procedures” for more information).

The implementation of the remediation measures may not fully address the material weakness in our internal controls over financial reporting, and therefore we might not be able to conclude that they have been fully remediated in the future. If we fail to correct this material weakness or if we experience additional material weaknesses in the future or otherwise fail to maintain an effective application of internal controls, we may not be able to accurately or timely report our financial statements and such failure could also impair our ability to comply with applicable financial reporting requirements and make related regulatory filings on a timely basis. In addition, we may be required to incur additional costs in connection with improving our internal control application and hiring additional personnel, which could negatively affect our results of operations.

We use analytical models to assist our decision making in key areas such as underwriting, claims, reserving, and catastrophe risks but actual results could differ materially from the model outputs and related analyses.

We have made substantial investments to develop proprietary analytic and modeling capabilities to facilitate our underwriting, risk management, capital modeling and allocation, and risk assessments relating to the risks we assume. These models and other tools help us to manage our risks, understand our capital utilization and risk aggregation, inform management and other stakeholders of capital requirements and seek to improve the risk/return profile or optimize the efficiency of the amount of capital we apply to cover the risks in the individual contracts we sell and in our portfolio as a whole. However, given the inherent uncertainty of modeling techniques and the application of such techniques, the possibility of human or systems error, the challenges inherent in consistent application of complex methodologies in a fluid business environment and other factors, our models, tools and databases may not accurately address the risks we currently cover or the emergence of new matters which might be deemed to impact certain of our coverages.

Furthermore, there are risks associated with catastrophic events, which are either poorly represented or not represented at all by analytical models. Each modeling assumption or un-modeled risk introduces uncertainty into the estimates that management must consider. These uncertainties can include, but are not limited to, the following:

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

Accordingly, our models may understate the exposures we are assuming. Conversely, our models may prove too conservative and contribute to factors which may impede our ability to grow in respect of new markets or perils or in connection with our current portfolio of coverages or the loss environment otherwise may prove more benign than our capital loading for catastrophes or other modeled losses. In such case of excess capital, we would make a judgment about redeploying the capital in lines of businesses or pursuing other capital management activities, such as dividends or share repurchases, which judgment will also depend on modeling techniques and results. If capital models prove inadequate, our result of operations and financial condition may be materially adversely impacted.

Risks Related to Our Preference Shares

Our controlling shareholder owns all of our ordinary shares and has the power to determine the affairs of the Company, including in ways not favorable to the interests of holders of the preference shares.

Parent owns 100% of the ordinary shares of the Company. As a result, Parent has power to elect our directors and to determine the outcome of any action requiring shareholder approval. Parent’s interests may differ from the interests of the holders of the preference shares and, given Parent’s controlling interest in the Company, circumstances may arise under which it may exercise its control in a manner that is not favorable to the interests of the holders of the preference shares.

Our ability to pay dividends or to meet ongoing cash requirements may be constrained by our holding company structure.

Aspen Holdings is a holding company and, as such, we do not expect it to have any significant operations. Its assets primarily consist of ownership of the shares of our subsidiaries, including our Operating Subsidiaries, a portfolio of fixed income securities, and cash and cash equivalents. Dividends and other permitted distributions and loans from our Operating Subsidiaries are expected to be our sole source of funds to meet ongoing cash requirements, including our debt service payments and other expenses, and dividend payments, to our preference shareholders and our Parent, as appropriate. Our Operating Subsidiaries are subject to capital, regulatory and other requirements that inform their ability to declare and pay dividends and make loans to other Aspen Group companies. In line with common market practice for regulated institutions, the Prudential Regulation Authority (the “PRA”), the regulatory agency which oversees the prudential regulation of insurance companies in the U.K. such as Aspen U.K., previously requested that it be afforded the opportunity to provide a “non-objection” prior to all future dividend payments made by Aspen U.K. In 2017, the PRA stated that they no longer routinely require Aspen U.K. to apply for a non-objection to dividends provided such dividend payment and Aspen U.K.’s subsequent capital position are within Aspen U.K.’s board-approved solvency capital risk appetite. Refer to Item 4, “Business Overview— Regulatory Matters — Bermuda Regulation — Restrictions on Dividends, Distributions and Reduction of Capital,” “Business Overview — Regulatory Matters — U.K. and E.U. Regulation — Restrictions on Dividend Payments,” and “Business Overview — Regulatory

Matters — U.S. Regulation — State Dividend Limitations” below and “Operating and Financial Review and Prospects — Liquidity and Capital Resources” in Item 5 below for more information on our ability to pay dividends. These and other requirements may mean that our Operating Subsidiaries are unable to pay sufficient dividends to enable us to meet our ongoing cash requirements, which could materially adversely affect our liquidity or financial condition.

Certain regulatory and other constraints may limit our ability to pay dividends on our securities.

We are subject to Bermuda regulatory constraints that affect our ability to pay dividends and make other distributions on our preference shares or other securities. Under the Bermuda Companies Act 1981, as amended (the “Companies Act”), we may declare or pay a dividend or distribution out of contributed surplus only if we have reasonable grounds to believe that we are, and would after the payment be, able to meet our liabilities as they become due or if the realizable value of our assets would thereby not be less than our liabilities. Refer to Item 4, “Business Overview — Regulatory Matters”, Item 5, “Operating and Financial Review and Prospects — Liquidity and Capital Resources” and Item 18, Note 13 of our consolidated financial statements, “Statutory Requirements and Dividends Restrictions” for more information on our ability to pay dividends.

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

The Companies Act, which applies to us, differs in some material respects from laws generally applicable to U.S. corporations and their shareholders. These differences include, but are not limited to, the manner in which directors must disclose transactions in which they have an interest, the rights of shareholders to bring class action and derivative lawsuits, the scope of indemnification available to directors and officers and provisions relating to the amalgamations, mergers and acquisitions and takeovers. Holders of our preference shares may therefore have more difficulty protecting their interests than would shareholders of a corporation incorporated in a jurisdiction within the U.S.

Generally, the duties of directors and officers of a Bermuda company are owed to the company only. Shareholders of Bermuda companies typically do not have rights to take action against directors or officers of the company and may only do so in limited circumstances. Class actions and derivative actions are typically not available to shareholders under Bermuda law. The Bermuda courts, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong to the company where the act complained of is alleged to be beyond the corporate power of the company or illegal, or would result in the violation of the company’s memorandum of association or bye-laws. Furthermore, consideration would be given by a Bermuda court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company’s shareholders than that which actually approved it. When the affairs of a company are being conducted in a manner that is oppressive or prejudicial to the interests of some shareholders, one or more shareholders may apply to the Supreme Court of Bermuda, which may make such order as it sees fit, including an order regulating the conduct of the company’s affairs in the future or ordering the purchase of the shares of any shareholders by other shareholders or by the company. Additionally, under our bye-laws and as permitted by Bermuda law, each shareholder has waived any claim or right of action against our directors or officers for any action taken by directors or officers in the performance of their duties, except for actions involving fraud or dishonesty. In addition, the rights of holders of our securities and the fiduciary responsibilities of our directors under Bermuda law are not as clearly established as under statutes or judicial precedent in U.S. jurisdictions, particularly the State of Delaware.

We are a Bermuda company and it may be difficult to effect service of process on us or enforce judgments against us or our directors and executive officers in the United States.

We are incorporated under the laws of Bermuda and our business is based in Bermuda. In addition, certain of our directors and officers reside outside the United States, and a substantial portion of our assets and the assets of such persons are located in jurisdictions outside the United States. As such, it may be difficult or impossible to effect service of process upon us or those persons in the United States or to recover against us or them on judgments of U.S. courts, including judgments predicated upon civil liability provisions of the U.S. federal securities laws.

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

In addition to and irrespective of jurisdictional issues, the Bermuda courts will not enforce a U.S. federal securities law that is either penal or contrary to public policy in Bermuda. It is the advice of our Bermuda counsel that an action brought pursuant to a public or penal law, the purpose of which is the enforcement of a sanction, power or right at the instance of the state in its sovereign capacity, will not be entertained by a Bermuda court. Certain remedies available under the laws of U.S. jurisdictions, including certain remedies under U.S. federal securities laws, would not be available under Bermuda law or enforceable in a Bermuda court, as they would be contrary to Bermuda public policy. Further, no claim may be brought in Bermuda against us or our directors and officers in the first instance for violation of U.S. federal securities laws because these laws have no extraterritorial jurisdiction under Bermuda law and do not have force of law in Bermuda. A Bermuda court may, however, impose civil liability on us or our directors and officers if the facts alleged in a complaint constitute or give rise to a cause of action under Bermuda law.

Risks Related to Taxation

Our non-U.S. companies (other than AUL) may be subject to U.S. income tax and that may have a material adverse effect on our operating results and your investment.

If Aspen Holdings or any of its non-U.S. subsidiaries (other than AUL) were considered to be engaged in a trade or business in the United States, it could be subject to U.S. corporate income and additional branch profits taxes on the portion of its earnings effectively connected to such U.S. business, in which case its operating results could be materially adversely affected. However, the operating results of Aspen U.K. should not be materially adversely affected as Aspen U.K. is considered to be engaged in a U.S. trade or business solely as a result of the binding authorities granted to certain subsidiaries incorporated in the United States.

We intend to manage the business of Aspen Holdings and its non-U.S. subsidiaries so that none of these companies (other than AUL) should be subject to U.S. corporate income tax because none of these companies should be treated as engaged in a trade or business within the United States (other than Aspen U.K.) with respect to the business produced pursuant to the binding authorities granted to certain subsidiaries incorporated in the United States). However, U.S. excise tax on premium income attributable to U.S. risks, U.S. Base Erosion and Anti-abuse Tax (“BEAT”) on premium ceded from U.S. subsidiaries to non-U.S. related parties, U.S. withholding tax on certain U.S. source investment income, and U.S. corporate income and additional branch profits tax on the profits attributable to the business of Aspen U.K. produced pursuant to the above described binding authority agreements may apply. However, because there is considerable uncertainty as to the activities which constitute being engaged in a trade or business within the United States, we cannot be certain that the U.S. Internal Revenue Service (“IRS”) will not contend successfully that some or all of Aspen Holdings or its non-U.S. subsidiaries (other than AUL) is/are engaged in a trade or business in the United States based on activities in addition to the binding authorities discussed above.

AUL is a member of Lloyd’s and subject to a closing agreement between Lloyd’s and the IRS (the “Closing Agreement”). Pursuant to the terms of the Closing Agreement, all members of Lloyd’s, including AUL, are subject to U.S. federal income taxation. Those members that are entitled to the benefits of a U.S. income tax treaty are deemed to be engaged in a U.S. trade or business through a U.S. permanent establishment. Those members not entitled to the benefits of such a treaty are merely deemed to be engaged in a U.S. trade or business. The Closing Agreement provides rules for determining the income considered to be attributable to the permanent establishment or U.S. trade or business. We believe that AUL may be entitled to the benefits of the U.S. income tax treaty with the U.K., although the position is not certain.

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

None of us, other than our subsidiaries that are incorporated in the U.K. (the “U.K. Subsidiaries”), should be treated as being resident in the U.K. for corporation tax purposes except for Asset Protection Jersey (“APJ Jersey”) which, although not incorporated in the U.K., is treated as resident in the U.K. Each of us, other than the U.K. Subsidiaries and APJ Jersey, currently intends to manage our affairs so that none of us, other than the U.K. Subsidiaries and APJ Jersey, is resident in the U.K. for tax purposes.

A company that is not resident in the U.K. for corporation tax purposes can nevertheless be subject to U.K. corporation tax if it carries on a trade through a permanent establishment in the U.K. but, in that case, the charge to U.K. corporation tax is limited to profits (both revenue profits and capital gains) attributable directly or indirectly to such permanent establishment.

Each of us, other than the U.K. Subsidiaries and APJ Jersey, currently intends to operate in such a manner that none of us (other than the U.K. Subsidiaries and APJ Jersey) carries on a trade through a permanent establishment in the U.K. Nevertheless, because neither case law nor U.K. statute completely defines the activities that constitute trading in the U.K. through a permanent establishment, Her Majesty’s Revenue and Customs (“HMRC”) might contend successfully that any of us (other than the U.K. Subsidiaries and APJ Jersey) are trading in the U.K. through a permanent establishment.

The U.K. has no income tax treaty with Bermuda. There are circumstances in which companies that are neither resident in the U.K. nor entitled to the protection afforded by a double tax treaty between the U.K. and the jurisdiction in which they are resident may be exposed to income tax in the U.K. (other than by deduction or withholding) on the profits of a trade carried on there, even if that trade is not carried on through a permanent establishment. However, each of us intends to operate in such a manner that none of us falls within the charge to income tax in the U.K. (other than by deduction or withholding).

If any of us, other than the U.K. Subsidiaries and APJ Jersey, were treated as being resident in the U.K. for U.K. corporation tax purposes, or as carrying on a trade in the U.K., whether or not through a permanent establishment, our operating results could be materially adversely affected.

Our U.K. operations may be affected by recent changes in U.K. and Australian tax law.

The U.K. Subsidiaries and APJ Jersey should be treated as resident in the U.K. and accordingly be subject to U.K. tax in respect of their worldwide income and gains. Any change in the basis or rate of U.K. corporation tax could materially adversely affect the operations of the U.K. resident companies. The U.K. corporation tax rate is currently 19%.

The Organization for Economic Co-operation and Development (“OECD”) published its final reports on Base Erosion and Profit Shifting (“BEPS Reports”) in October 2015, containing recommendations on measures to coordinate multilateral action on international tax rules. Recommended actions include ensuring that transfer pricing outcomes are in line with value creation (noting that the current rules may facilitate the transfer of risks or capital away from countries where the economic activity takes place), neutralizing the effect of hybrid financial instruments and entities and limiting the deductibility of interest payments for tax purposes.

In response to the BEPS recommendations, revised transfer pricing guidelines have been adopted and legislation has been introduced in relation to hybrid mismatches, the latter of which came into effect on January 1, 2017. Legislation to restrict tax deductions for interest expenses of large groups, in line with the OECD’s recommendations, was brought into effect from April 1, 2017. These changes to U.K. tax law in response to the BEPS Reports may have a material adverse effect on our intra-group financing arrangements and our results.

In May 2019, the OECD published a “Programme of Work” designed to address the tax challenges created by an increasing digitalized economy. This was divided into two pillars. Pillar One addresses the broader challenge of a digitalized economy and focuses on the allocation of group profits among taxing jurisdictions based on a market based concept rather than the historical “permanent establishment” concept. Pillar Two addresses the remaining BEPS risk of profit shifting to entities in low tax jurisdictions by introducing a global minimum tax and a proposed tax on base eroding payments, which would operate through a denial of a deduction or 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 activities, and the impact to the Company cannot be determined at this time.

Legislation restricting the amount of U.K. profit in any particular accounting period that can be offset by historical tax losses was brought into effect from April 1, 2017. Should utilization of any tax losses be delayed or restricted as a result of this legislation, this could have a material adverse effect on our results.

The U.K. diverted profits tax (“DPT”) is separate from U.K. corporation tax and is charged at a higher rate of 25%. It is an anti-avoidance measure aimed at protecting the U.K. tax base against the artificial diversion of profits that are being earned by activities carried out in the U.K. but which are not otherwise being taxed in the U.K., in particular as a result of arrangements amongst companies in the same multinational group. The U.K.’s network of double tax treaties does not offer protection from a DPT charge. In the event that the rules apply to certain arrangements, then upfront payment of HMRC’s estimate of the deemed tax liability may be required. If any of our U.K. or non-U.K. companies is liable for DPT as a result of intra-group arrangements, this could have a material adverse effect on our results.

The Australian Government announced a new diverted profits tax which applies to tax years beginning on or after July 1, 2017. The diverted profits tax is set at 40% and is modeled on the U.K.’s DPT. If Aspen U.K.’s Australian branch is deemed liable for Australian DPT as a result of intra-group arrangements, this could have a material adverse effect on our results in future years.

Our U.K. and U.S. operations may be adversely affected by a transfer pricing adjustment in computing U.K. or U.S. taxable profits.

Any arrangements between U.K.-resident entities of the Aspen Group and other members of the Aspen Group are subject to the U.K. transfer pricing regime. Consequently, if any agreement (including any reinsurance agreements) between a U.K.-resident entity of the Aspen Group and any other Aspen Group entity (whether that entity is resident in or outside the U.K.) is found not to be on arm's length terms and as a result a U.K. tax advantage is being obtained, an adjustment will be required to compute U.K. taxable profits as if such an agreement were on arm's length terms. Similar rules apply in the U.S and would have a similar impact on our U.S. resident entities if transfer pricing adjustments were required. Any transfer pricing adjustment could adversely impact the tax charge suffered by the relevant U.K. or U.S. resident entities of the Aspen Group.

The BEPS Reports included a recommendation that groups should be required to report details of their operations and intra-group transactions in each jurisdiction, known as country by country reporting ("CBCR"). The U.K. has implemented these recommendations with effect from January 1, 2016. Many non-OECD countries are still considering the implications of the proposals. It is possible that our approach to transfer pricing may become subject to greater scrutiny from the tax authorities in the jurisdictions in which we operate, which may lead to transfer pricing audits in the future. Any transfer pricing adjustment could adversely impact the tax charge suffered by the relevant entities of the Aspen Group.

In April 2016, the E.U. issued proposals to require all E.U. entities (including branches) to publish their CBCR reports. The proposals, if implemented, are likely to cause increased audit activity from E.U. tax authorities. Legislation has been enacted giving power to introduce regulations requiring public disclosure of U.K. CBCR reports, although this power has not yet been exercised.

Recent and future changes in U.S. federal income tax law or the manner in which it is interpreted could materially adversely affect the non-U.S. insurance industry and our results of operations.

The Tax Cuts and Jobs Act (the "2017 Act") was signed into law on December 22, 2017 and includes certain provisions intended to eliminate certain perceived tax advantages of companies (including insurance companies) that have legal domiciles outside the United States but have certain U.S. connections and United States persons investing in such companies. For example, the 2017 Act includes the BEAT that could make affiliate reinsurance between United States and non-U.S. members of the Aspen Group economically unfeasible. As discussed in more detail below, the 2017 Act also revises the rules applicable to passive foreign investment companies ("PFICs") and controlled foreign corporations ("CFCs"). We are currently unable to predict the ultimate impact of the 2017 Act on our business, shareholders and results of operations in part because the 2017 Act will continue to evolve through rules and regulations which may increase the tax liability of the U.S. members of the Aspen Group that reinsure with non-U.S. Aspen Group members and may impact the timing and amount of U.S. federal income taxes imposed on certain U.S. shareholders. Further, it is possible that other legislation could be introduced and enacted by the current Congress or future Congresses that could have an adverse impact on us. Thus in addition to direct risks, it is possible that over time the BEAT, and the Act generally, 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. This could reduce our access to capital and in that event we could experience a material adverse effect on our business, financial condition and results of operations.

U.S. federal income tax laws and interpretations regarding whether a company is engaged in a trade or business within the United States is a PFIC, or whether U.S. persons would be required to include in their gross income the "subpart F income" or the related person insurance income ("RPII") of a CFC are subject to change, possibly on a retroactive basis. There currently are only recently proposed regulations regarding the application of the PFIC rules to insurance companies, and the regulations regarding RPII have been in proposed form since 1991. New regulations or pronouncements interpreting or clarifying such rules may be forthcoming. We cannot be certain if, when, or in what form such regulations or pronouncements may be implemented or made, or whether such guidance will have a retroactive effect.

Holders of 10% or more of Aspen Holdings' shares may be subject to U.S. income taxation under the controlled foreign corporation ("CFC") rules.

A "10% U.S. Shareholder" (as defined below) of a non-U.S. corporation that is a CFC at any time during a taxable year that owns shares in such non-U.S. corporation directly or indirectly through non-U.S. entities on the last day of the non-U.S. corporation's taxable year during which it is a CFC must include in its gross income for U.S. federal income tax purposes its pro rata share of the CFC's "subpart F income" and global low taxed intangible income ("GILTI") even if the subpart F income or GILTI is not distributed. A "10% U.S. Shareholder" is a U.S. Person (as defined below) that owns (directly, indirectly through non-U.S. entities or "constructively" (as defined below)) at least 10% of the total combined voting power or value of all classes of stock of a non-U.S. corporation. The 2017 Act expanded the definition of 10% U.S. Shareholder to include

ownership by value (rather than just vote), so provisions in our organizational documents described above reducing the voting power of 9.5% U.S. Shareholders will no longer mitigate the potential risk of 10% U.S. Shareholder status. “Subpart F income” of a non-U.S. insurance corporation typically includes “foreign personal holding company income” (such as interest, dividends and other types of passive income), as well as insurance and reinsurance income (including underwriting and investment income), and GILTI is generally business income of the CFC (other than subpart F income and certain other categories of income) reduced by 10% of the adjusted tax basis of the CFC’s depreciable tangible personal property (based on a computation that generally aggregates all of a 10% U.S. Shareholder’s GILTI from its investments in CFCs) that is potentially subject to further reductions depending on the nature of the applicable 10% U.S. Shareholder. A non-U.S. corporation is considered a CFC if “10% U.S. Shareholders” own (directly, indirectly through non-U.S. entities or by attribution by application of the constructive ownership rules of section 958(b) of the Code (i.e., “constructively”)) more than 50% of the total combined voting power of all classes of voting stock of that non-U.S. corporation, or the total value of all stock of that non-U.S. corporation. For the purposes of taking into account insurance income, a CFC also includes a non-U.S. corporation earning insurance income in which more than 25% of the total combined voting power of all classes of stock (or more than 25% of the total value of the stock) is owned by 10% U.S. Shareholders on any day during the taxable year of such corporation, if the gross amount of premiums or other consideration for the reinsurance or the issuing of insurance or annuity contracts (other than certain insurance or reinsurance related to some country risks written by certain insurance companies, not applicable here) exceeds 75% of the gross amount of all premiums or other consideration in respect of all risks.

For purposes of this discussion, the term “U.S. Person” means: (i) a citizen or resident of the United States, (ii) a partnership or corporation created or organized in or under the laws of the United States, or organized under the laws of any political subdivision thereof, (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source, (iv) a trust if either (x) a court within the United States is able to exercise primary supervision over the administration of such trust and one or more U.S. Persons have the authority to control all substantial decisions of such trust or (y) the trust has a valid election in effect to be treated as a U.S. Person for U.S. federal income tax purposes and (z) any other person or entity that is treated for U.S. federal income tax purposes as if it were one of the foregoing.

We believe that because of the anticipated dispersion of our share ownership, no U.S. Person who owns shares of Aspen Holdings directly or indirectly through one or more non-U.S. entities should be treated as owning (directly, indirectly through non-U.S. entities, or constructively) 10% or more of the total voting power or value of all classes of shares of Aspen Holdings or any of its non-U.S. subsidiaries. Our shares may not be as widely dispersed as we believe, however, due to the application of certain ownership attribution rules. No assurance may be given that a U.S. Person who owns our shares will not be characterized as a 10% U.S. Shareholder, in which case such U.S. Person may be subject to taxation under the CFC rules.

U.S. Persons who hold our shares may be subject to U.S. income taxation at ordinary income rates on their proportionate share of our related party insurance income (“RPII”).

If the RPII (determined on a gross basis) of any of our non-U.S. Operating Subsidiaries, Silverton Re Ltd. (“Silverton”), Peregrine and APJ Jersey were to equal or exceed 20% of that company’s gross insurance income in any taxable year and direct or indirect insureds (and persons related to those insureds) own directly or indirectly through entities 20% or more of the voting power or value of Aspen Holdings, then a U.S. Person who owns any shares of such non-U.S. Operating Subsidiary (directly or indirectly through non-U.S. entities) on the last day of the taxable year on which it is an RPII CFC would be required to include in its income for U.S. federal income tax purposes such person’s pro rata share of such company’s RPII for the entire taxable year, determined as if such RPII were distributed proportionately only to U.S. Persons on that date regardless of whether such income is distributed, in which case such person’s investment could be materially adversely affected. In addition, any RPII that is includible in the income of a U.S. tax-exempt organization may be treated as unrelated business taxable income. The amount of RPII earned by a non-U.S. Operating Subsidiary (generally, premium and related investment income from the indirect or direct insurance or reinsurance of any direct or indirect U.S. holder of shares or any person related to such holder) will depend on a number of factors, including the identity of persons directly or indirectly insured or reinsured by the company. We believe that the direct or indirect insureds of each of our non-U.S. Operating Subsidiaries (and related persons) did not directly or indirectly own 20% or more of either the voting power or value of our shares in prior years of operation and we do not expect this to be the case in the foreseeable future. Additionally, we do not expect gross RPII of each of our non-U.S. Operating Subsidiaries to equal or exceed 20% of its gross insurance income in any taxable year for the foreseeable future, but we cannot be certain that this will be the case because some of the factors which determine the extent of RPII may be beyond our control.

U.S. Persons who dispose of our shares may be subject to U.S. federal income taxation at the rates applicable to dividends on a portion of such disposition.

Section 1248 of the Code, in conjunction with the RPII rules, provides that if a U.S. Person disposes of shares in a non-U.S. corporation that earns insurance income in which U.S. Persons own 25% or more of the shares (even if the amount of gross RPII is less than 20% of the corporation's gross insurance income and the ownership of its shares by direct or indirect insureds and related persons is less than the 20% threshold), any gain from the disposition will generally be treated as a dividend to the extent of the holder's share of the corporation's undistributed earnings and profits that were accumulated during the period that the holder owned the shares (whether or not such earnings and profits are attributable to RPII). In addition, such a holder will be required to comply with certain reporting requirements, regardless of the amount of shares owned by the holder. These RPII rules should not apply to dispositions of our shares because Aspen Holdings will not itself be directly engaged in the insurance business. The RPII provisions, however, have never been interpreted by the courts or the Treasury Department in final regulations, and regulations interpreting the RPII provisions of the Code exist only in proposed form. It is not certain whether these regulations will be adopted in their proposed form or what changes or clarifications might ultimately be made thereto or whether any such changes, as well as any interpretation or application of the RPII rules by the IRS, the courts, or otherwise, might have retroactive effect. The Treasury Department has authority to impose, among other things, additional reporting requirements with respect to RPII. Accordingly, the meaning of the RPII provisions and the application thereof to us is uncertain.

U.S. Persons who hold our shares will be subject to adverse tax consequences if we are considered to be a passive foreign investment company ("PFIC") for U.S. federal income tax purposes.

In general, a non-U.S. corporation will be a PFIC during a given year if (i) 75% or more of its gross income constitutes "passive income" (the "75% test") or (ii) 50% or more of its assets produce (or are held for the production of) passive income (the "50% test"). If Aspen Holdings were characterized as a PFIC during a given year, each U.S. Person holding shares of Aspen Holdings would be subject to a penalty tax at the time of the sale at a gain of, or receipt of an "excess distribution" with respect to, their shares, unless such person is a 10% U.S. Shareholder subject to tax under the CFC rules or such person made a "qualified electing fund" election. In addition, if Aspen Holdings were considered a PFIC, upon the death of any U.S. individual owning shares, such individual's heirs or estate would not be entitled to a "step-up" in the basis of the shares that might otherwise be available under U.S. federal income tax laws. In addition, a distribution paid by Aspen Holdings to U.S. shareholders that is characterized as a dividend and is not characterized as an excess distribution would not be eligible for reduced rates of tax as qualified dividend income if Aspen Holdings were considered a PFIC in the taxable year in which such dividend is paid or in the preceding taxable year. A U.S. Person that is a shareholder in a PFIC may also be subject to additional information reporting requirements, including the filing of an IRS Form 8621.

For the above purposes, passive income generally includes interest, dividends, annuities and other investment income. The PFIC rules provide that income derived in the active conduct of an insurance business by a qualifying insurance corporation is not treated as passive income. The PFIC provisions also contain a look-through rule under which a foreign corporation shall be treated, for purposes of determining whether it is a PFIC, as if it "received directly its proportionate share of the income ..." and as if it "held its proportionate share of the assets ..." of any other corporation in which it owns at least 25% of the value of the stock (the "look-through rule"). Under the look-through rule, Aspen Holdings should be deemed to own its proportionate share of the assets and to have received its proportionate share of the income of its non-U.S. insurance subsidiaries for purposes of the 75% test and the 50% test. However, the 2017 Act limits the insurance income exception to a non-U.S. insurance company that is a qualifying insurance corporation that would be taxable as an insurance company if it were a U.S. corporation and maintains insurance liabilities of more than 25% of such company's assets for a taxable year (or maintains insurance liabilities that at least equal or exceed 10% of its assets, is predominantly engaged in the insurance business and 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) (the "Reserve Test"). We believe that our non-U.S. insurance subsidiaries have met this Reserve Test and will continue to do so in the foreseeable future, although no assurance may be given that our non-U.S. insurance subsidiaries will satisfy the Reserve Test in future years.

Further, the Treasury Department recently issued proposed regulations (the "2019 Proposed Regulations") intended to clarify the application of the insurance income 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 percent or more owned partnerships. The 2019 Proposed Regulations define insurance liabilities for purposes of the Reserve Test, tighten the Reserve Test and the statutory cap on insurance liabilities, provide guidance on the runoff-related and rating-related circumstances for purposes of the 10 percent test, and provide that a non-U.S. insurer will qualify for the insurance income 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 2019 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. The 2019 Proposed Regulations also introduce attribution rules that, taken together with other provisions of the regulations, could result in a U.S. Person that directly owns any shares in a non-PFIC being treated as an indirect shareholder of a lower tier PFIC subject to the general PFIC rules described herein. Although the 2019 Proposed Regulations will not be effective until adopted in final form, the IRS has announced that taxpayers may apply them to taxable years beginning after December 31, 2017 as if they were final regulations. We believe that, based on the implementation of our current business plan and the application of the look-through rule, none of the income and assets of our insurance subsidiaries should be treated as passive, and thus, we should not be characterized as a PFIC under current law, but because of the legal uncertainties as well as factual uncertainties with respect to our planned operations, there is a risk that we will be characterized as a PFIC for U.S. federal income tax purposes. In addition, because of the legal uncertainties relating to how the 2019 Proposed Regulations will be interpreted and the form in which such regulations may be finalized, no assurance can be given that we will not qualify as a PFIC under final IRS guidance or any legislative proposal that may be subsequently introduced and enacted. If we are considered a PFIC, it could have material adverse tax consequences for an investor that is subject to U.S. federal income taxation. Prospective investors should consult their tax advisors as to the effects of the PFIC rules.

U.S. tax-exempt organizations who own our shares may recognize unrelated business taxable income.

A U.S. tax-exempt organization may recognize unrelated business taxable income if a portion of the insurance income of any of our non-U.S. Operating Subsidiaries is allocated to the organization, which generally would be the case if any of our non-U.S. Operating Subsidiaries is a CFC and the tax-exempt shareholder is a U.S. 10% Shareholder or there is RPII, certain exceptions do not apply and the tax-exempt organization owns any of our shares. Although we do not believe that any U.S. Persons should be allocated such insurance income, we cannot be certain that this will be the case. U.S. tax-exempt investors are advised to consult their own tax advisors.

Scope of application of the Foreign Account Tax Compliance Act (“FATCA”) is uncertain.

The FATCA provisions of the Code require withholding agents to withhold 30% of a U.S. dividend interest or other fixed payment made to a Foreign Financial Institution (“FFI”) unless the FFI has entered into an agreement with the IRS to report account information for any of the FFI’s U.S. accountholders. Certain entities in the Aspen Group were identified as FFIs and were registered with the IRS ahead of the commencement date. The U.S. Treasury released models for Intergovernmental FATCA Agreements (“IGAs”) with other jurisdictions that will allow FFIs in those jurisdictions to report U.S. accountholder information only to local revenue authorities rather than the IRS. The U.K. / U.S. IGA was signed in September 2012. Non-Publicly Traded Securities Holders may be required to provide any information that we determine necessary to avoid the imposition of such withholding tax in order to allow us to satisfy such obligations. In the event that this withholding tax is imposed, our operating results could be materially adversely affected.

The impact of Bermuda’s letter of commitment to the OECD to eliminate harmful tax practices is uncertain and could adversely affect our tax status in Bermuda.

The OECD has published reports and launched a global dialogue among member and non-member countries on measures to limit harmful tax competition. These measures are largely directed at counteracting the effects of tax havens and preferential tax regimes in countries around the world. In the OECD’s progress report dated April 2, 2009, Bermuda was designated as an OECD “White List” jurisdiction that has substantially implemented the internationally agreed tax standards. The standards for the OECD compliance are to have at least 12 signed Tax Information Exchange Agreements (“TIEAs”) with other OECD members or non-OECD members. Bermuda has signed approximately 41 TIEAs which exceeds the requisite amount and demonstrates Bermuda’s commitment to preserve the standards. In April 2016, Bermuda agreed to participate in the Tax Sharing requirements for CBCR.

Bermuda remains committed to tax transparency, which is evidenced by adopting economic substance legislation, which has been deemed compliant by the EU and was designed to implement the work of the Forum on Harmful Tax Practices under Action 5 of the OECD’s BEPS Reports. Any changes in the tax law of an OECD member state or in response to a change in EU policies, could subject us to additional taxes and we are unable to predict at this time whether it would have a material adverse impact on our operations and results.

Changes to Bermuda tax policies may impact our financial position.

Under current Bermuda law, we are not subject to tax on income, profits, withholding, capital gains or capital transfers. Furthermore, we obtained from the Minister of Finance of Bermuda under the Exempted Undertakings Tax Protection Act 1966 (as amended) an assurance that, in the event Bermuda enacts legislation imposing tax computed on profits, income, any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance tax, then the imposition of the tax will not be applicable to us or our operations until March 31, 2035. Tax policy and legislation in Bermuda could change in the future (as is the case in other jurisdictions) and as such no guarantee can be given as to whether the current tax treatment afforded to us will continue after March 31, 2035.

Item 4. Information on the Company

A. History and Development of the Company

Aspen Insurance Holdings Limited was incorporated on May 23, 2002 as a holding company headquartered in Bermuda. We underwrite specialty insurance and reinsurance on a global basis through our Operating Subsidiaries based in Bermuda, the United States and the United Kingdom. We also have branches in Australia, Canada, Singapore and Switzerland. The principal office is located at 141 Front Street, Hamilton, HM19, Bermuda (telephone number: +1 441-295-8201).

On February 15, 2019, following receipt of regulatory approvals, the Company's publicly traded ordinary shares were acquired by Highlands Holdings, Ltd. ("Parent"), a Bermuda exempted company, and an affiliate of certain investment funds managed by affiliates of Apollo Global Management, Inc., a leading global investment manager (collectively with its subsidiaries, "Apollo"). As a result of the acquisition, the Company's ordinary shares are no longer traded on the New York Stock Exchange (the "NYSE"). The Company's preference shares and depositary shares continue to be listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE. For information on the preference shares and the depositary shares, refer to Item 18, Note 12 of our consolidated financial statements, "Capital Structure."

The Company maintains a website at www.aspen.co. The information on our website is not incorporated by reference in this report. We make available, free of charge through our website, our Annual Reports on Form 20-F and other 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 ("SEC").

The SEC maintains an internet site that contains reports 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.

B. Business Overview

We are a Bermuda-based holding company, whose Operating Subsidiaries underwrite specialty insurance and reinsurance on a global basis. We manage our insurance and reinsurance businesses as two distinct business segments, Aspen Insurance and Aspen Reinsurance ("Aspen Re"), to enhance and better serve our global customer base. Financial data relating to our two business segments is included in Item 5, "Operating and Financial Review and Prospects" and in Item 18, Note 3 of our consolidated financial statements, "Segment Reporting."

Aspen Reinsurance. Aspen Re provides reinsurance to ceding companies, also referred to as cedants or reinsureds. Aspen Re's offerings include, but are not limited to (i) property catastrophe reinsurance, (ii) other property reinsurance, (iii) casualty reinsurance, and (iv) specialty reinsurance. We offer reinsurance on both a treaty and facultative basis, and on both a proportional (or quota share) and non-proportional (or excess of loss) basis.

Our reinsurance business is written by Aspen Bermuda, Aspen U.K. and via the Lloyd's platform. Our Lloyd's Syndicate 4711 ("Syndicate 4711") is managed by AMAL and AUL is the corporate member. We also access Lloyd's Brussels through Lloyd's Insurance Company, S.A. stamp 5383. AAIC also underwrites crop reinsurance business in the United States. Our reinsurance underwriting teams are located in Bermuda, Singapore, Switzerland, the United Kingdom, the United States, and Australia.

The Company also participates in the alternative reinsurance market through Aspen Capital Markets. Aspen Capital Markets focuses on developing alternative reinsurance structures to leverage the Company's existing underwriting franchise, increase its operational flexibility in the capital markets and provide investors direct access to its underwriting expertise. Aspen Capital Markets leverages the Company's underwriting and analytical expertise and earns management and performance fees from the Company and other third-party investors primarily through the management of insurance linked securities ("ILS") funds and other offerings. Aspen Capital Markets is included in the Reinsurance Segment because it focuses primarily on property catastrophe business, however, it also provides structures for other types of reinsurance transactions through the use of third-party capital.

Aspen Insurance. Our insurance segment offers a variety of insurance products consisting of (i) property and casualty insurance, (ii) marine, aviation and energy insurance, and (iii) and financial and professional lines insurance. In our insurance segment, these products are written in the London Market primarily by Aspen U.K. and via the Lloyd's platform and in the United States by AAIC and Aspen Specialty (on an admitted and excess and surplus lines basis, respectively). We also write casualty and financial and professional lines business through Aspen Bermuda and financial and professional lines business in the Asia Pacific region through Aspen Singapore Pte. Ltd. ("Aspen Singapore") which binds business for Syndicate 4711.

Business Segments

We are organized into two business segments, namely Aspen Re and Aspen Insurance. We have determined our reportable segments, Aspen Re (“Reinsurance”) and Aspen Insurance (“Insurance”), by taking into account the manner in which management makes operating decisions and assesses operating performance. Profit or loss for each of the business segments is measured by underwriting profit or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, amortization of deferred policy acquisition costs and general and administrative expenses. Underwriting profit or loss provides a basis for management to evaluate the segment’s underwriting performance.

We provide additional disclosures for corporate and other (non-operating) income and expenses. Corporate and other income and expenses include net investment income, net realized and unrealized investment gains or losses, expenses associated with managing the Aspen Group, certain strategic and other costs, changes in fair value of derivatives or loan notes issued by variable interest entities, interest expenses, net realized and unrealized foreign exchange gains or losses, and income taxes, none of which are allocated to the business segments. Corporate expenses are not allocated to our business segments as they typically do not fluctuate with the levels of premiums written and are not directly related to our business segment operations. We do not allocate our assets by business segment as we evaluate underwriting results of each business segment separately from the results of our investment portfolio.

The table below sets forth the gross written premiums by business segment for the twelve months ended December 31, 2019, 2018 and 2017:

Business Segment	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
	(\$ in millions, except for percentages)					
Reinsurance	\$ 1,485.5	43.2%	\$ 1,495.7	43.4%	\$ 1,548.5	46.1%
Insurance	1,956.9	56.8	1,951.2	56.6	1,812.4	53.9
Total	\$ 3,442.4	100.0%	\$ 3,446.9	100.0%	\$ 3,360.9	100.0%

For a review of our results by business segment, refer to Item 5, “Operating and Financial Review and Prospects” and Item 18, Note 3 of our consolidated financial statements, “Segment Reporting.”

Reinsurance

The reinsurance business we write can be analyzed by geographic region, reflecting the location of the reinsured risks, as set forth in the table below for the twelve months ended December 31, 2019, 2018 and 2017:

Reinsurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Australia/Asia	\$ 139.5	9.4%	\$ 141.3	9.4%	\$ 139.7	9.0%
Caribbean	5.2	0.4	3.7	0.2	10.1	0.7
Europe (excluding U.K.)	69.2	4.7	75.0	5.0	82.0	5.3
United Kingdom	15.1	1.0	9.2	0.6	14.2	0.9
United States & Canada ⁽¹⁾	770.3	51.8	741.2	49.7	774.2	50.0
Worldwide excluding United States ⁽²⁾	21.0	1.4	33.9	2.3	35.7	2.3
Worldwide including United States ⁽³⁾	371.8	25.0	387.8	25.9	392.9	25.4
Others	93.4	6.3	103.6	6.9	99.7	6.4
Total	\$ 1,485.5	100.0%	\$ 1,495.7	100.0%	\$ 1,548.5	100.0%

- (1) “United States and Canada” consists of individual policies that insure risks specifically in the United States and/or Canada, but not elsewhere. It also includes gross written premium of \$312.5 million related to CGB Diversified Services, Inc. (“CGB DS”) and \$Nil related to AG Logic Holdings, LLC and its affiliates (“AgriLogic”) (2018 — \$259.7 million (CGB DS) and \$33.1 million (AgriLogic), 2017 — \$269.7 million related to AgriLogic which we purchased in January 2016 and sold in December 2017) as part of our strategic partnership with CGB DS). For more information on CGB DS, refer to “— Specialty Reinsurance” below.
- (2) “Worldwide excluding the United States” consists of individual policies that insure risks wherever they may be across the world but specifically excludes the United States.
- (3) “Worldwide including the United States” consists of individual policies that insure risks wherever they may be across the world but specifically includes the United States.

Aspen Re’s gross written premiums by principal line of business were as follows for the twelve months ended December 31, 2019, 2018 and 2017:

Reinsurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Property catastrophe reinsurance	\$ 249.6	16.8%	\$ 262.8	17.6%	\$ 279.3	18.0%
Other property reinsurance	356.9	24.0	346.0	23.1	350.3	22.6
Casualty reinsurance	294.7	19.8	328.1	21.9	319.0	20.6
Specialty reinsurance ⁽¹⁾	584.3	39.4	558.8	37.4	599.9	38.8
Total	\$ 1,485.5	100.0%	\$ 1,495.7	100.0%	\$ 1,548.5	100.0%

- (1) Includes gross written premium of \$312.5 million related to CGB DS and \$Nil related to AgriLogic (2018 — \$259.7 million (CGB DS) and \$33.1 million (AgriLogic), 2017 — \$269.7 million AgriLogic).

Property Catastrophe Reinsurance: Property catastrophe reinsurance is generally written on a treaty excess of loss basis where we provide protection to an insurer for an agreed portion of the total losses from a single event in excess of a specified loss amount. In the event of a loss, most contracts provide for coverage of a second occurrence following the payment of a premium to reinstate the coverage under the contract, which is referred to as a reinstatement premium. The coverage provided under excess of loss reinsurance contracts may be on a worldwide basis or limited in scope to selected regions or geographical areas.

Aspen Capital Markets provides quota share support for Aspen Re's global property catastrophe excess of loss reinsurance business. In 2019, quota share support for Aspen Re was provided by separate cells of Peregrine. For more information on Peregrine, refer to Item 18, Note 5 of our consolidated financial statements, "Variable Interest Entities."

Other Property Reinsurance: Other property reinsurance includes property risks written on excess of loss and proportional treaties, facultative or single risk reinsurance. Risk excess of loss reinsurance provides coverage to a reinsured where it experiences a loss in excess of its retention level on a single "risk" basis. A "risk" in this context might mean the insurance coverage on one building or a group of buildings for fire or explosion or the insurance coverage under a single policy which the reinsured treats as a single risk. This line of business is generally less exposed to accumulations of exposures and losses but can still be impacted by catastrophes, such as earthquakes and hurricanes. Proportional treaty reinsurance provides proportional coverage to the reinsured, meaning that, subject to event limits where applicable and ceding commissions, we pay the same share of the covered original losses as we receive in premiums charged for the covered risks. Proportional contracts typically involve close client relationships which often include regular audits of the cedants' data.

Casualty Reinsurance: Casualty reinsurance is written on an excess of loss, proportional and facultative basis and consists of U.S. treaty, international treaty and casualty facultative reinsurance. Our U.S. treaty and facultative business comprises exposures to workers' compensation (including catastrophe), medical malpractice, general liability, auto liability, professional liability and excess liability including umbrella liability. Our international treaty business reinsures exposures mainly with respect to general liability, auto liability, professional liability, workers' compensation and excess liability.

Specialty Reinsurance: Specialty reinsurance is written on an excess of loss and proportional basis and consisted of credit and surety reinsurance, agriculture reinsurance, mortgage reinsurance and insurance, marine, aviation, terrorism, engineering, cyber and other specialty lines. Our credit and surety reinsurance business consists of trade credit, surety (mainly European, Japanese and Latin American risks) and mortgage reinsurance and insurance and political risks. In 2019, we ceased writing credit and surety reinsurance and sold our renewal rights to that book of business to a third party. The mortgage reinsurance and insurance on political risks was not included in the transaction and we continue to underwrite this coverage. Our specialty agricultural reinsurance business covers crop and multi-peril business. Other specialty lines include reinsurance treaties and some insurance policies covering policyholders' interests in marine, energy, aviation liability, space, contingency, terrorism, engineering, nuclear and personal accident. In addition, specialty reinsurance includes U.S. crop insurance business written on a reinsurance basis through our strategic partnership with CGB DS via Crop Re Services LLC ("Crop Re"), a Delaware limited liability company responsible for directing the placement of reinsurance on behalf of CGB DS and CGB Insurance Company ("CGBIC"), an Indiana insurance company affiliate of CGB DS and an RMA licensed crop insurer. We also write a small amount of admitted primary U.S. crop insurance. For more information on Crop Re, refer to Item 18, Note 4 of our consolidated financial statements, "Investments." We have also increased our capacity through other collateralized reinsurance arrangements via Aspen Capital Markets.

A high percentage of the property catastrophe reinsurance contracts we write exclude or limit coverage for losses arising from the peril of terrorism. Within the U.S., our other property reinsurance contracts generally include limited coverage for acts that are certified as "acts of terrorism" by the U.S. Treasury Department under the Terrorism Risk Insurance Act (including its various extensions, "TRIA"). We have written a limited number of property reinsurance contracts, both on a pro rata and risk excess basis, specifically covering the peril of terrorism. These contracts typically exclude coverage protecting against nuclear, biological, chemical or radiological attack, though we have written a small number of contracts that do not exclude such attacks, the coverage of which may be applicable to non-terrorism events.

Insurance

The insurance business we write can be analyzed by geographic region, reflecting the location of the insured risk, as set forth in the table below for the twelve months ended December 31, 2019, 2018 and 2017:

Insurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Australia/Asia	\$ 76.4	3.9%	\$ 34.6	1.8%	\$ 27.6	1.5%
Caribbean	4.1	0.2	4.0	0.2	7.5	0.4
Europe (excluding U.K.)	13.6	0.7	17.6	0.9	12.5	0.7
United Kingdom	280.6	14.3	280.9	14.4	244.1	13.5
United States & Canada ⁽¹⁾	1,233.6	63.1	1,134.7	58.1	955.1	52.7
Worldwide excluding United States ⁽²⁾	42.0	2.1	36.2	1.9	52.4	2.9
Worldwide including United States ⁽³⁾	243.1	12.4	388.0	19.9	475.7	26.2
Others	63.5	3.3	55.2	2.8	37.5	2.1
Total	\$ 1,956.9	100.0%	\$ 1,951.2	100.0%	\$ 1,812.4	100.0%

- (1) “United States and Canada” consists of individual policies that insure risks specifically in the United States and/or Canada, but not elsewhere.
- (2) “Worldwide excluding the United States” consists of individual policies that insure risks wherever they may be across the world but specifically excludes the United States.
- (3) “Worldwide including the United States” consists of individual policies that insure risks wherever they may be across the world but specifically includes the United States.

Our gross written premiums by our principal line of business within our insurance segment were as follows for the twelve months ended December 31, 2019, 2018 and 2017:

Insurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Property and casualty insurance	\$ 861.2	44.0%	\$ 903.9	46.3%	\$ 856.9	47.2%
Marine, aviation and energy insurance	301.7	15.4	368.4	18.9	385.3	21.3
Financial and professional lines insurance	794.0	40.6	678.9	34.8	570.2	31.5
Total	\$ 1,956.9	100.0%	\$ 1,951.2	100.0%	\$ 1,812.4	100.0%

Property and Casualty Insurance: The property and casualty insurance line consists of U.S. and U.K. commercial property, commercial liability, U.S. primary casualty, excess casualty, environmental liability and railroad liability, written on a primary, excess, quota share, program and facultative basis.

U.S. and U.K. Commercial Property: Property insurance provides physical damage and business interruption coverage for losses arising from weather, fire, theft and other causes. The U.S. commercial property team covers mercantile, manufacturing, municipal and commercial real estate business. The U.K. commercial team’s client base is predominantly U.K. institutional property owners, small and middle market corporates and public sector clients.

Commercial Liability: Commercial liability is primarily written in the United Kingdom and provides employers’ liability coverage, products and public liability coverage for insureds domiciled in the United Kingdom and Ireland. The U.K. regional team also covers directors’ and officers’ (“D&O”) and professional indemnity, predominantly to small and medium corporates. The majority of this U.K. regional D&O and professional indemnity coverage was bound through an agency agreement with Aspen Risk Management Limited (“ARML”). In July 2019, we placed the ARML business into runoff.

U.S. Primary Casualty: The U.S. primary casualty account consists primarily of lines written within the primary insurance sectors. We are focused on delivering expertise to brokers and customers in hospitality, real estate, construction and products liability.

Excess Casualty: The excess casualty line comprises medium and large, sophisticated and risk-managed insureds worldwide and covers broad-based risks at lead/high excess attachment points, including general liability, commercial and residential construction liability, life science, railroads, trucking, product and public liability and associated types of cover found in general liability policies in the global insurance market, written from the United Kingdom, the United States and Bermuda.

Environmental Liability: The environmental account primarily provides contractors' pollution liability and pollution legal liability across industry segments that have environmental regulatory drivers and contractual requirements for coverage, including real estate and public entities, contractors and engineers, energy contractors and environmental contractors and consultants. The business is written in both the primary and excess insurance markets in the United States, Canada and the United Kingdom.

Railroad Liability: Our railroad liability business consists of primary and excess liability business for freight, commuter and excursion railroads. It also provides general liability coverage to the railroad support industry (contractors, repair shops and products manufacturers) as well as contingent liability for railcar fleet owners/managers and railroad protective liability in the United States.

On a significant portion of our property and casualty insurance contracts we are obligated to offer terrorism coverage under TRIA. Wherever possible, we exclude coverage protection against nuclear, biological, chemical or radiological ("NBCR") attacks. However, certain U.S. states (notably New York and Florida) prohibit admitted insurance companies, such as AAIC, from fully excluding such perils, resulting in some level of exposures to NBCR as well as fire following such events. We would expect to benefit from the protection of TRIA and the over-arching \$100 billion industry loss cap (subject to the relevant deductible and co-retention).

Marine, Aviation and Energy Insurance: Our marine, aviation and energy insurance line consists of marine and energy liability, onshore energy physical damage, offshore energy physical damage, marine hull, specie and inland and ocean marine, written on a primary, excess, quota share, program and facultative basis.

Marine and Energy Liability: The marine and energy liability business based in the U.K. includes marine liability cover mainly related to the liabilities of ship-owners and port operators, including reinsurance of Protection and Indemnity Clubs ("P&I Clubs"). It also provides liability cover globally (including the U.S.) for companies in the oil and gas sector, both onshore and offshore and in the power generation sector. Our liability for U.S. commercial construction is now being written under our global excess casualty line and we are no longer writing new construction liability in this class. Following a strategic review of our underwriting portfolio that began in December 2019, we determined to cease writing marine and energy liability business and this business was put into runoff in February 2020.

Onshore Energy Physical Damage: Our marine, energy and construction property unit underwrites a variety of worldwide onshore energy and construction sector classes of business with a focus on property covers.

Offshore Energy Physical Damage: Offshore energy physical damage provides insurance cover against physical damage losses in addition to operators' extra expenses for companies operating in the oil and gas exploration and production sector.

Marine Hull: The marine hull team insures physical damage to ships (including war and associated perils) and related marine assets. Effective August 2018, we ceased underwriting marine hull on the Lloyd's platform although we continue to write hull-related risks in our U.S. ocean marine business.

Specie: The specie business line focuses on the insurance of high value property items on an all risks basis, including fine art, general and bank related specie, jewelers' block and armored car.

Inland and Ocean Marine: The inland and ocean marine team writes business principally covering builders' construction risk, contractors' equipment, and global transportation exposures such as marine cargo and hull, inland transit, warehousing and war, in addition to exhibition, fine arts and museums insurance. The book also includes business generated by our subsidiary, Blue Waters Insurers, Corp., which acts as our managing general agent in Puerto Rico and produces inland, ocean marine and cargo business in Puerto Rico.

Aviation: In August 2018, we decided to no longer underwrite aviation business. Prior to August 2018, the aviation team wrote physical damage insurance on hulls and spares (including war and associated perils), aviation hull deductible cover and comprehensive legal liability for airlines, smaller operators of airline equipment, airports and associated business and non-critical component part manufacturers.

Financial and Professional Lines Insurance: Our financial and professional lines consists of financial and corporate risks, professional liability, management liability, credit and political risks, crisis management, accident and health, surety risks, and technology liability (cyber risks), written on a primary, excess, quota share, program and facultative basis.

Financial and Corporate Risks: Our financial institutions business is written on both a primary and excess of loss basis and consists of professional liability, crime insurance and D&O cover, with the largest exposure comprising risks headquartered in the United Kingdom, followed by Australia, the United States and Canada. We cover financial institutions including commercial and investment banks, asset managers, insurance companies, stockbrokers and insureds with hybrid business models. This account also includes a book of D&O insurance for commercial insureds located outside of the United States and a worldwide book of representations and warranties and tax indemnity business.

Professional Liability: Our professional liability business is written out of the United States (including errors and omissions (“E&O”)) and Bermuda and is written on both a primary and excess of loss basis. We insure a wide range of professions including lawyers, accountants, architects, engineers, doctors and medical technicians. This account also includes a portfolio of technology liability and data protection insurance. The data protection insurance covers firms for first party costs and third-party liabilities associated with their breach of contractual or statutory data protection obligations.

Management Liability: Our management liability business is written out of the United States, the United Kingdom and Bermuda. We insure a diverse group of commercial and financial institutions predominantly on an excess basis. Our products include D&O liability, fiduciary liability, employment practices liability, fidelity insurance and blended liability programs including E&O liability. The focus of the account is predominantly on risks headquartered in the U.S. or risks with a material U.S. exposure.

Credit and Political Risks: The credit and political risks team writes business covering the credit and contract frustration risks on a variety of trade and non-trade related transactions, as well as political risks (including multi-year war on land cover). We provide credit and political risks cover worldwide but with concentrations in a number of countries, such as China, Brazil, the Netherlands and the United States.

Crisis Management: The Crisis Management team writes insurance designed to protect individuals and corporations operating in high-risk areas around the world, including covering the shipping industry’s exposure to acts of piracy. It also writes terrorism and political violence insurance, providing coverage for damage to property (largely fixed assets such as buildings) resulting from acts of terrorism, strikes, riots, civil commotion or political violence, in addition to product recall business. This book is written on a global basis, although capacity is selectively deployed.

Accident and Health: The global accident and health team focuses on insurance and reinsurance products which help protect individuals, groups and companies from the consequences of accidental death or disability whether resulting from accident or sickness. This may include single or multi-person losses as well as major catastrophic events such as air crashes, earthquakes or terrorist attacks. Coverage written includes whole account treaty and facultative reinsurance protection for insurance companies. Following a strategic review of our underwriting portfolio that began in December 2019, we determined to exit our global accident and health line of business and began winding down the business in March 2020.

Surety Risks: Our surety team writes commercial surety risks, admiralty bonds and similar maritime undertakings including, but not limited to, federal and public official bonds, license and permits and fiduciary and miscellaneous bonds, focused on Fortune 1000 companies and large, privately owned companies in the United States.

Technology Liability (Cyber Risks): Technology liability is written globally and provides coverage for technology, media and telecommunications firms offering protection for damages and legal defense expenses associated with financial loss claims from third parties and various forms of intellectual property breaches. We also incorporate data protection indemnity insurance against costs and liabilities that may arise when a company breaches its data protection obligations.

Underwriting and Reinsurance Purchasing

Our objective is to create a diversified portfolio of insurance and reinsurance risks, spread across lines of business, products, geographic areas of coverage, cedants and sources. The acceptance of appropriately priced risk is the core of our business. Underwriting requires judgment, based on important assumptions about matters that are inherently unpredictable and beyond our control, and for which historical experience and probability analysis may not provide sufficient guidance. We view underwriting quality and risk management as critical to our success.

Underwriting. We underwrite according to the following principles:

- operate within agreed boundaries as defined by the Aspen Underwriting Principles for the relevant class of business;

- operate within prescribed maximum underwriting authority limits, which we delegate to individual underwriters in accordance with an understanding of each individual underwriter’s capabilities, tailored to the classes of business written by the particular underwriter;
- evaluate the underlying data provided by clients and adjust such data where we believe it does not adequately reflect the underlying exposure;
- price each submission based on our experience in the class of business, and where appropriate, by deploying one or more actuarial models either developed internally or licensed from third-party providers;
- maintain a peer review process to sustain high standards of underwriting discipline and consistency and a sampling methodology for simpler insurance risks;
- engage in peer reviews for more complex risk by several underwriters and input from catastrophe risk management specialists, our team of actuaries and senior management; and
- refer risks outside of agreed underwriting authority limits to the Group Chief Executive Officer and/or to the appropriate entity board as exceptions for approval before we accept the risks.

Reinsurance Purchasing. We purchase reinsurance and retrocession to mitigate and diversify our risk exposure to a level consistent with our risk appetite and to increase our insurance and reinsurance underwriting capacity. These agreements provide for recovery of a portion of our losses and loss adjustment expenses from our reinsurers. The amount and type of reinsurance that we purchase varies from year to year and is dependent on a variety of factors, including, but not limited to, the cost of a particular reinsurance contract and the nature of our gross exposures assumed, with the aim of securing cost-effective protection. We have a centralized ceded reinsurance department which coordinates the placement of all of our treaty reinsurance placements.

We have reinsurance covers in place for the majority of our insurance classes of business on an excess-of-loss basis and/or proportional treaty basis. The excess of loss covers provide protection in various layers and excess of varying attachment points according to the scope of cover provided. In 2019, we purchased less proportional reinsurance protection and more excess-of-loss protection compared to 2018.

With respect to natural perils coverage, we buy protections that cover both our insurance and reinsurance lines of business through a variety of products, including, but not limited to, excess of loss reinsurance, facultative reinsurance, aggregate covers, whole account covers and collateralized products which can be on either an indemnity or an index linked basis. For example, we may purchase industry loss warranty reinsurance which provides retrocessional coverage when insurance industry losses for a defined event exceed a certain level. We expect the type and level of coverage that we purchase will vary over time, reflecting our view of the changing dynamics of the underlying exposure and the reinsurance markets. We manage our risk by seeking to limit the amount of exposure assumed from any one reinsured and the amount of the aggregate exposure to catastrophe losses from a single event in any one geographical zone. Additionally, Aspen Re continues to purchase quota share and retrocessional reinsurance protection for a range of international perils and worldwide catastrophe losses through Aspen Capital Markets and other collateralized reinsurance arrangements.

Although reinsurance agreements contractually obligate our reinsurers to reimburse us for an agreed-upon portion of our gross paid losses, we remain liable to our insureds to the extent that our reinsurers do not meet their obligations under these agreements. As a result, and in line with our risk management objectives, we evaluate the financial condition of our reinsurers and monitor concentrations of credit risk on an on-going basis. In general, we seek to place our reinsurance with highly rated companies with which we have a strong trading relationship or have fully collateralized arrangements in place. We maintain a list of authorized reinsurers graded for short, medium and long tail business which is regularly reviewed and updated.

On March 2, 2020, the Company announced that certain subsidiaries of the Company have entered into an adverse development cover reinsurance agreement with a subsidiary of Enstar Group Limited (“Enstar”), pursuant to which Enstar's subsidiary will reinsure losses incurred on or prior to December 31, 2019.

For additional information, refer to Item 18, Note 7 of our consolidated financial statements, “Reinsurance” and Item 18, Note 24 “Subsequent Events.”

Risk Management

We have a comprehensive risk management framework that defines the corporate risk appetite, risk strategy and the policies required to monitor, manage and mitigate the risk inherent in our business. In doing so, we aim to comply with corporate governance and industry best practice and to monitor risks against six main risk objectives: (i) ensuring losses remain within planned limits, (ii) ensuring volatility of results fall within planned limits, (iii) compliance with existing and emerging regulatory requirements,

(iv) preserving rating agency credit ratings, (v) maintaining adequate solvency and liquidity, and (vi) avoiding any reputational risk. Below is a summary of our current risk governance arrangements and risk management strategy:

Risk Governance

Board of Directors. The Company's Board of Directors (the "Board") considers effective identification, measurement, monitoring, management and reporting of the risks facing our business to be key elements of its responsibilities and those of the Group Chief Executive Officer and management. Matters relating to risk management that are reserved for the Board include approval of the internal controls and risk management framework and any changes to the Aspen Group's risk appetite statement and key risk limits. The Board also receives reports at each scheduled meeting from the Group Chief Risk Officer covering risk management processes including the design, operation, use and limitations of the internal model. The internal model is an economic capital model which has been developed internally for use in certain business decision-making processes, the assessment of risk-based capital requirements and for various regulatory purposes. As a result of these arrangements and processes, the Board, assisted by management and the Board Committees, is able to exercise effective oversight of the operation of the risk management strategy described in "— Risk Management Strategy" below.

Board Committees. The Board delegates oversight of the management of certain key risks to its Risk and Audit Committees. The Audit Committee is comprised entirely of independent directors and the chair of each committee reports regularly to the Board on the committees' discussions.

Risk Committee: The purpose of the Risk Committee is to assist the Board in its oversight duties in respect of the management of risk, including:

- making recommendations to the Board regarding management's proposals for the risk management framework, risk appetite, key risk limits and the use of our internal model;
- monitoring compliance with the agreed Aspen Group risk appetite and key risk limits; and
- oversight of the stress and scenario testing process established by management.

Audit Committee: The Audit Committee is primarily responsible for assisting the Board in its oversight of the integrity of the financial statements. The Audit Committee is also responsible for reviewing the adequacy and effectiveness of the Company's internal controls and receives regular reports from both internal and external auditors. In addition, the Audit Committee oversees the Company's compliance with applicable laws and regulations.

Management Committees. The Aspen Group also has a number of executive management committees which have oversight of certain risk management processes including the following:

Group Executive Committee: The Group Executive Committee is the main executive committee responsible for advising the Group Chief Executive Officer on matters relating to the strategy and conduct of the Aspen Group's business.

Investment Committee: The Investment Committee is primarily responsible for setting and monitoring the Aspen Group's investment risk and asset allocation policies and ensuring that the Group Chief Risk Officer is kept informed of such matters.

Risk Management Committee: The primary purpose of the Risk Management Committee is to assist the Group Chief Risk Officer in his oversight duties in respect of the design and operation of the Aspen Group's risk management systems. In particular, the Risk Management Committee has specific responsibilities in relation to the internal model and for the establishment of risk limits for accumulating underwriting exposures and monitoring solvency and liquidity requirements.

Reserve Committee: The Reserve Committee is responsible for managing reserving risk and making recommendations to the Group Chief Executive Officer and the Group Chief Financial Officer relating to the appropriate level of reserves to include in the Aspen Group's financial statements.

Underwriting Committee: The purpose of the Underwriting Committee is to assist the Group Chief Executive Officer in his oversight duties in respect of the management and control of underwriting risk, including oversight of the independent review of the quality of each team's underwriting.

Group Operations Committee: The purpose of the Group Operations Committee is to oversee the Aspen Group's operational support functions to ensure that they are strategically aligned to provide coordinated, efficient and cost effective operational support to the execution of the Aspen Group's underwriting plans.

Group Chief Risk Officer: Among other things, the Group Chief Risk Officer provides the Board and the Risk Committee with reports and advice on risk management issues.

Risk Management Strategy

We operate an integrated enterprise-wide risk management strategy designed to deliver shareholder value in a sustainable and efficient manner while providing a high level of policyholder protection. The execution of our integrated risk management strategy is based on:

- the establishment and maintenance of an internal control and risk management system based on a three lines of defense approach to the allocation of responsibilities between risk accepting units (first line), risk management activity and oversight from other central control functions (second line) and independent assurance (third line);
- identifying material risks to the achievement of the Aspen Group's objectives including emerging risks;
- the articulation at Group level of our risk appetite and a consistent set of key risk limits for each material component of risk;
- the cascading of risk appetite and key risk limits for material risks to each operating subsidiary and, where appropriate, risk accepting business units;
- measuring, monitoring, managing and reporting risk positions and trends;
- the use, subject to an understanding of its limitations, of the internal model to test strategic and tactical business decisions and to assess compliance with the risk appetite statement; and
- stress and scenario testing, including reverse stress testing, designed to help us better understand and develop contingency plans for the likely effects of extreme events or combinations of events on capital adequacy and liquidity.

Risk Appetite Statement. The risk appetite statement is a central component of the Aspen Group's overall risk management framework and is approved by the Board. It sets out, at a high level, how we think about risk in the context of our business model, Aspen Group objectives and strategy. It sets out boundary conditions and limits for the level of risk we assume, together with a statement of the reward we aim to receive for this level of risk. Our risk appetite statement comprises the following components:

- *Risk preferences:* a high level description of the types of risks we prefer to assume and those we prefer to minimize or avoid;
- *Return objective:* a description of the return on capital we seek to achieve, subject to our risk constraints;
- *Volatility constraint:* a target limit on earnings volatility; and
- *Capital constraint:* a minimum level of risk adjusted capital.

Risk Components. The main types of risks that we face are summarized as follows:

Insurance risk: The risk that underwriting results vary from their expected amounts, including the risk that reserves established in respect of prior periods differ significantly from the level of reserves included in the Aspen Group's financial statements.

Market risk: The risk of variation in the income generated by, and the fair value of, our investment portfolio, cash and cash equivalents and derivative contracts including the effect of changes in foreign currency exchange rates.

Credit risk: The risk of diminution in the value of insurance receivables as a result of counter-party default. This principally comprises default and concentration risks relating to amounts receivable from intermediaries, policyholders and reinsurers. We include credit risks related to our investment portfolio under market risk. We include credit risks related to insurance contracts (e.g. credit and political risk policies) under insurance risk.

Liquidity risk: The risks of failing to maintain sufficient liquid financial resources to meet liabilities as they fall due or to provide collateral as required for commercial or regulatory purposes.

Operational risk: The risk of loss resulting from inadequate or failed internal processes, personnel or systems, or from external events.

Strategic risk: The risk of adverse impact on shareholder value or income and capital of adverse business decisions, poor execution or failure to respond to market changes.

Regulatory risk: The risk of non-compliance with regulatory requirements, including ensuring we understand and comply with changes to those requirements is assessed and managed as operational risk. There is a residual risk that changes in regulation impact our ability to operate profitably in some jurisdictions or some lines of business.

Taxation risk: The risk that we do not understand, plan for and manage our tax obligations is assessed and managed as operational risk. There is a residual risk that changes in taxation impact our ability to operate profitably in some jurisdictions or some lines of business.

Emerging risk: The risk that events or issues not previously identified or fully understood impact the operations or financial results of the Aspen Group.

We divide risks into “core” and “non-core” risks. Core risks comprise those risks which are inherent in the operation of our business, including insurance risks in respect of our underwriting operations and market risks in respect of our investment activity. We intentionally expose the Company to core risks with a view to generating shareholder value but seek to manage the resulting volatility in our earnings and financial condition within the limits defined by our risk appetite. However, these core risks are intrinsically difficult to measure and manage and we may not, therefore, be successful in this respect. All other risks, including regulatory and operational risks, are classified as non-core. We seek, to the extent we regard as reasonably practicable and economically viable, to avoid or minimize our exposure to non-core risks.

Key Risk Limits. We use the term risk limit to mean the upper limit of our tolerance for exposure to a given risk. Key risk limits are a sub-set of risk limits and are subject to annual approval by the Board on the advice of the Risk Committee as part of the annual business planning process. If a risk exceeds key risk limits, the Group Chief Risk Officer is required to report the excess and management’s proposed actions to the Risk Committee.

Business Distribution

Our business is produced principally through brokers and reinsurance intermediaries. The brokerage distribution channel provides us with access to an efficient, global distribution system without the significant time and expense which would be incurred in creating wholly-owned distribution networks. The brokers and reinsurance intermediaries typically act in the interest of ceding clients or insurers and are instrumental to our continued relationship with our clients.

The following tables show our gross written premiums by broker for each of our business segments for the twelve months ended December 31, 2019, 2018 and 2017:

Reinsurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
	(\$ in millions, except for percentages)					
Aon Corporation ⁽¹⁾	\$ 311.9	21.0%	\$ 363.7	24.3%	\$ 374.5	24.2%
Marsh & McLennan Companies, Inc.	301.5	20.3	312.1	20.9	321.8	20.8
Willis Group Holdings, Ltd.	278.7	18.8	282.2	18.9	315.8	20.4
Others ⁽²⁾	593.4	39.9	537.7	35.9	536.4	34.6
Total	\$ 1,485.5	100.0%	\$ 1,495.7	100.0%	\$ 1,548.5	100.0%

⁽¹⁾ On March 9, 2020, Aon plc and Willis Towers Watson announced a definitive agreement to combine, and expect the transaction to close in the first half of 2021.

⁽²⁾ Includes gross written premium of \$312.5 million related to CGB DS and \$Nil related to AgriLogic (2018 — (2018 — \$259.7 million (CGB DS) and \$33.1 million (AgriLogic), 2017 — \$269.7 million related to AgriLogic) as part of our strategic partnership with CGB DS.

Insurance	Twelve Months Ended December 31, 2019		Twelve Months Ended December 31, 2018		Twelve Months Ended December 31, 2017	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Marsh & McLennan Companies, Inc.	\$ 165.6	8.5%	\$ 230.9	11.9%	\$ 214.3	11.8%
Aon Corporation ⁽¹⁾	147.7	7.5	180.8	9.3	176.5	9.7
Brown & Brown Inc	124.9	6.4	121.9	6.2	57.3	3.2
Ryan Specialty	111.6	5.7	101.1	5.2	94.7	5.2
CRC Swett	76.8	3.9	78.8	4.0	87.3	4.8
Willis Group Holdings, Ltd.	76.1	3.9	145.1	7.4	123.4	6.8
AmWINS Group Inc	71.4	3.6	86.4	4.4	86.8	4.8
Coastal Insurance Underwriters, Inc	61.0	3.1	56.1	2.9	44.3	2.4
Arthur J Gallagher (UK) Limited	52.5	2.7	70.8	3.6	69.7	3.8
Lockton Inc	51.4	2.6	56.0	2.9	55.9	3.1
Jardine Lloyd Thompson Group Ltd. ⁽²⁾	35.5	1.8	58.5	3.0	56.6	3.1
Others	982.4	50.3	\$ 764.8	39.2	\$ 745.6	41.3
Total	<u>\$ 1,956.9</u>	<u>100.0%</u>	<u>\$ 1,951.2</u>	<u>100.0%</u>	<u>\$ 1,812.4</u>	<u>100.0%</u>

⁽¹⁾ On March 9, 2020, Aon plc and Willis Towers Watson announced a definitive agreement to combine, and expect the transaction to close in the first half of 2021.

⁽²⁾ On April 1, 2019, Jardine Lloyd Thompson Group Ltd. was acquired by Marsh & McLennan Companies, Inc.

Claims Management

We have a staff of experienced claims professionals organized into insurance and reinsurance teams which are managed separately, but operate under a global structure designed to achieve consistency and efficiencies across all lines of business. We have developed processes and internal business controls for identifying, tracking and settling claims, and authority levels have been established for all individuals involved in the reserving and settlement of claims.

The key responsibilities of our claims management departments include:

- processing, managing and resolving reported insurance or reinsurance claims efficiently and accurately to ensure the proper application of intended coverage, reserving in a timely fashion for the probable ultimate cost of both indemnity and expense and make timely payments in the appropriate amount on those claims for which we are legally obligated to pay;
- selecting appropriate counsel and experts for claims, manage claims-related litigation and regulatory compliance;
- contributing to the underwriting process by collaborating with underwriting teams and senior management in terms of the evolution of policy language and endorsements and providing claim-specific feedback and education regarding legal activity; and
- contributing to the analysis and reporting of financial data and forecasts by collaborating with the finance and actuarial functions relating to the drivers of actual claim reserve developments and potential for financial exposures on known claims.

On those accounts where it is applicable, a team of in-house claims professionals oversees and regularly audits claims handled under outsourcing agreements and manages those large claims and coverage issues on referral as required under the terms of those agreements.

Senior management receives a regular report on the status of our reserves and settlement of claims. We recognize that fair interpretation of our reinsurance agreements and insurance policies with our customers, and timely payment of valid claims, are a valuable service to our clients and enhance our reputation.

Reserves

Under U.S. Generally Accepted Accounting Principles (“U.S. GAAP”) and applicable insurance laws and regulations in the countries where we operate, we are required to establish loss reserves for the estimated unpaid portion of the ultimate liability for losses and loss expenses under the terms of our policies and agreements with our insured and reinsured customers. The process of estimating these reserves involves a considerable degree of judgment and, as of any given date, is inherently uncertain. For a full discussion regarding our loss and loss expenses reserving process, refer to Item 5, “Operating and Financial Review and Prospects — Critical Accounting Policies — Reserving Approach” and Item 3D, “Risk Factors — Insurance Risks — Our financial condition and operating results may be adversely affected if actual claims exceed our loss reserves.”

Investments

Our investment strategy is focused on delivering stable investment income and total return through all market cycles while maintaining appropriate portfolio liquidity and credit quality to meet the requirements of our customers, rating agencies and regulators. To enhance investment returns where possible, we tactically adjust the duration of the investment portfolio and asset allocation taking into account the average liability duration of our reinsurance and insurance risks and our views of interest rates, the yield curve, credit spreads and markets for different assets.

We maintain an Investment Committee that establishes investment guidelines and supervises our investment activity. The Investment Committee regularly monitors our overall investment results and performance against our investment objectives and guidelines. These guidelines specify minimum criteria on the overall credit quality and liquidity characteristics of the portfolio, and include limitations on the size of certain holdings and restrictions on purchasing certain types of securities. Management and the Investment Committee review our investment performance and assess credit and market risk concentrations and exposures to issuers. We follow an investment strategy designed to emphasize the preservation of capital and provide sufficient liquidity for the prompt payment of claims.

In 2019, we engaged Apollo Asset Management Europe PC LLP, BlackRock Financial Management Inc., Alliance Capital Management L.P., DWS Investment Management Americas Inc., Pacific Investment Management Company LLC, Goldman Sachs Asset Management L.P., Conning Asset Management Limited and The Blackstone Group to provide investment advisory and management services for our portfolio of investments. These agreements may be terminated generally by either party on short notice without penalty.

For additional information concerning our investments, refer to Item 5, “Operating and Financial Review and Prospects”, Item 18, Notes 4 and 6 of our consolidated financial statements, “Investments,” and “Fair Value Measurements,” respectively. For additional information concerning Other-Than-Temporary Impairment of Investments, refer to Note 2(c) of our consolidated financial statements, “Basis of Preparation and Significant Accounting Policies — Accounting for Investments, Cash and Cash Equivalents.”

Competition

The insurance and reinsurance industries are mature and highly competitive. Competition varies significantly on the basis of product and geography. Insurance and reinsurance companies compete on the basis of many factors, including premium charges, general reputation and perceived financial strength, the terms and conditions of the products offered, ratings assigned by independent rating agencies, speed of claims payments, reputation and experience in the particular risk to be underwritten, quality of service, the jurisdiction where the reinsurer or insurer is licensed or otherwise authorized, capacity and coverages offered and various other factors. Increased competition could result in fewer submissions for our products and services, lower rates charged, slower premium growth and less favorable policy terms and conditions, any of which could adversely impact our growth and profitability.

We compete with major U.S., U.K., Bermudian, European and other international insurers and reinsurers and underwriting syndicates from Lloyd’s, some of which have longer operating histories, more capital and/or more favorable financial strength ratings than we do, as well as greater marketing, management and business resources. We also compete with capital market participants that create alternative products, such as catastrophe bonds, that are intended to compete with traditional reinsurance products. In addition to asset managers and reinsurers who provide collateralized reinsurance and retrocessional coverage, the availability of these non-traditional products could reduce the demand for both traditional insurance and reinsurance products.

Our competitors include, but are not limited to, American International Group, Inc. (“AIG”), Arch Capital Group Ltd., Axis Capital Holdings Limited, Chubb Limited, Sompo International, Everest Re Group Limited, Hannover Re, Lancashire Holdings Limited, Munich Re, PartnerRe Ltd., QBE Insurance Group Limited, Renaissance Re Holdings Ltd., SCOR SA, Swiss Re, Validus Holdings Ltd. (a subsidiary of AIG), XL Catlin (a subsidiary of AXA XL and AXA SA), MS Amlin plc and various Lloyd’s syndicates and Government-sponsored insurers and reinsurers.

Ratings

Ratings by independent agencies are an important factor in establishing the competitive position of (re)insurance companies and are important to our ability to market and sell our products and services. Rating organizations continually review the financial positions of insurers, including us. As of the date of filing, the financial strength ratings of our Operating Subsidiaries were as follows:

Rating Agency	Rating	Rated Operating Subsidiary	Agency's Rating Definition	Ranking of Rating
Standard & Poor's Financial Services LLC ("S&P")	A- (Strong - Stable outlook)	Aspen U.K. and Aspen Bermuda	Strong capacity to meet financial commitments but somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than those in higher-rated categories	The 'A' grouping is the third highest of ten major rating categories.
A.M. Best	A (Excellent) (Negative)	Aspen U.K., Aspen Bermuda, Aspen Specialty and AAIC	An excellent ability to meet ongoing insurance obligations	The 'A' grouping is the second highest of seven major rating categories.
Moody's Investors Service, Inc. ("Moody's")	A2 (Negative outlook)	Aspen U.K. and Aspen Bermuda	Considered upper-medium grade and subject to low credit risk	The 'A' grouping is the third highest of nine major rating categories. Each of the second through seventh categories has an appended numerical modifier of '1', '2' and '3', indicating that the obligation ranks in the higher end, mid-category or lower end, respectively, of the rating category.

These ratings reflect the respective opinions of S&P, A.M. Best, and Moody regarding the ability of the relevant Operating Subsidiary to pay claims and are not evaluations directed to our investors or recommendations to buy, sell or hold our securities. These ratings are subject to periodic review by, and may be revised downward or revoked at the sole discretion of, S&P, A.M. Best, and Moody's, respectively.

For a discussion of some potential risks relating to the ratings of our Operating Subsidiaries, refer to Item 3D, "Risk Factors — Strategic Risks — Our Operating Subsidiaries are rated and our Lloyd's business benefits from a rating by one or more of A.M. Best, S&P and Moody's and a decline in any of these ratings could adversely affect our standing among brokers and customers and cause our premiums and earnings to decrease" and "Risk Factors — Strategic Risks — We have experienced a ratings downgrade and there can be no assurance that we and our subsidiaries will not experience any further downgrades, which may result in an adverse effect on our business, financial condition and operating results."

Regulatory Matters

General

The business of insurance and reinsurance is regulated in most countries, although the degree and type of regulation varies significantly from one jurisdiction to another. Compliance obligations are increasing in most jurisdictions as the focus on insurance regulatory controls has escalated in recent years, with particular emphasis on regulation of solvency, risk management and internal controls. The discussion below summarizes the material laws and regulations applicable to our Operating Subsidiaries and, where relevant, Peregrine, Silverton and Aspen Capital Markets. Our companies have met or exceeded the solvency margins and ratios applicable to them under relevant laws and regulations as at December 31, 2019 and December 31, 2018.

Group Supervision

The Bermuda Monetary Authority (the “BMA”) acts as the group supervisor of the Aspen Group and has named Aspen Bermuda as the designated insurer. The Insurance Act 1978 of Bermuda as amended (the “Insurance Act”) and related group supervision regulations (collectively the “Group Supervision Regime”) set out provisions regarding Group Supervision and the responsibilities of the designated insurer. The Group Supervision regime is in addition to the regulation of the Company’s various Operating Subsidiaries in their local jurisdictions.

As the group supervisor, the BMA performs a number of functions including: (i) coordinating the gathering and dissemination of information for other regulatory authorities; (ii) carrying out supervisory reviews and assessments of the Aspen Group; (iii) carrying out assessments of the Aspen Group’s compliance with the rules on solvency, risk concentration, intra-group transactions and good governance procedures; (iv) planning and coordinating, through regular meetings with other authorities, supervisory activities in respect of the Aspen Group; (v) coordinating any enforcement action that may need to be taken against the Aspen Group or any member of the Aspen Group; and (vi) coordinating meetings of colleges of supervisors in order to facilitate the carrying out of these functions. As the designated insurer, Aspen Bermuda is required to facilitate compliance by the Aspen Group with the group insurance solvency and supervision rules.

Annual and Quarterly Filings. On an annual basis, the Aspen Group is required to submit to the BMA: (i) a group statutory financial return; (ii) audited group financial statements including notes to the financial statements, in accordance with GAAP Standards (“Group Financial Statements”); and (iii) a group capital and solvency return (“Group CSR”), which includes the Group Bermuda Solvency Capital Requirement (“BSCR”), a risk-based capital adequacy model, and associated schedules, a Group Solvency Self-Assessment (“GSSA”), a Financial Condition Report (the “FCR”) and an opinion of a BMA approved Group Actuary on the economic balance sheet technical provisions. In addition, the Aspen Group files quarterly group financial returns with the BMA. The GSSA is a self-assessment of our risk and solvency requirements that allows the BMA to obtain our view of the capital resources required to achieve our business objectives and to assess our governance, risk management and controls surrounding this process. The Group Financial Statements are published by the BMA on its website and the FCR is published on our website.

Group Minimum Solvency Margin and Group Enhanced Capital Requirements. Aspen Holdings must ensure that the group’s statutory assets exceed the amount of its statutory liabilities by the aggregate minimum margin of solvency of each qualifying member of the insurance group. A member is a qualifying member if it is subject to solvency requirements in the jurisdiction in which it is registered.

In addition, every insurance group must maintain available statutory capital and surplus in an amount equal to or exceeding its Enhanced Capital Requirement (“ECR”). The ECR is determined either by reference to the BSCR model or an approved internal capital model. The Aspen Group currently relies on the BSCR model to establish its ECR. The BMA also expects insurance groups to operate at or above a group Target Capital Level (“TCL”), which the BMA has set at 120% of the group ECR. The Aspen Group holds capital in excess of its TCL as at December 31, 2019.

Bermuda

Aspen Bermuda is licensed as a Class 4 insurer and is subject to the Insurance Act, which imposes solvency and liquidity standards as well as auditing and reporting requirements on Bermuda insurers and reinsurers, and it empowers the BMA to supervise, investigate, require information and intervene in the affairs of Bermuda registered insurance companies. There are a number of remedial actions the BMA can take to protect the public interest if it determines that a Bermuda insurer or reinsurer may become insolvent or that a breach of the Insurance Act or of a registration condition has occurred or is about to occur.

In addition to requiring the appointment of a principal representative in Bermuda, the appointment of an independent auditor, the appointment of a loss reserve specialist and the filing of various financial statements and returns, significant provisions of the Insurance Act applicable to Aspen Bermuda include:

Enhanced Capital Requirements. Similar to the Group requirements, in order to minimize the risk of a shortfall in capital arising from an unexpected adverse deviation, the BMA expects Class 4 insurers such as Aspen Bermuda to maintain a TCL equal to 120% of its ECR. As at December 31, 2019, Aspen Bermuda holds capital in excess of its TCL.

Minimum Solvency Margin and Minimum Liquidity Ratio. Aspen Bermuda is also required to comply with a minimum solvency margin and minimum liquidity ratio in respect of its business. The minimum solvency margin is the greater of: (i) \$100,000,000; or (ii) 50% of net premiums written (being gross premiums written less any premiums ceded (not exceeding 25% of gross premiums)) in its current financial year; or (iii) 15% of net losses and loss expense provisions and other insurance reserves; or (iv) 25% of the ECR reported at the end of its relevant year. The minimum liquidity ratio requires that the value of relevant assets not be less than 75% of the amount of relevant liabilities.

Restrictions on Dividends, Distributions and Reduction of Capital. Aspen Bermuda may not declare or pay any dividends during any financial year if it would cause the insurer to fail to meet its relevant solvency margins, capital requirements or liquidity ratio, and an insurer which fails to meet its relevant requirements on the last day of any financial year may not, without the approval of the BMA, declare or pay any dividends during the next financial year. In addition, as a Class 4 insurer, Aspen Bermuda may not in any financial year pay dividends which would exceed 25% of its total statutory capital and surplus, as shown on its statutory balance sheet in relation to the previous financial year, unless it files with the BMA a solvency affidavit at least seven days in advance. Further, Aspen Bermuda must obtain the prior approval of the BMA before reducing by 15% or more its total statutory capital as set out in its previous year's financial statements.

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 matters that, subject to certain statutorily preferred debts, the insurance debts of an insurer must be paid in priority to all other unsecured debts of the insurer. Insurance debt is defined as a debt to which an insurer is or may become liable pursuant to an insurance contract excluding debts owed to an insurer under an insurance contract where the insurer is the person insured.

In addition, our Bermuda companies, including Aspen Holdings and Aspen Bermuda, must comply with the provisions of the Bermuda Companies Act 1981, as amended (the "Companies Act"), regulating the payment of dividends and distributions. A Bermuda company may not declare or pay a dividend or make a distribution out of contributed surplus if there are reasonable grounds for believing that: (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 its liabilities.

Peregrine and Silverton

Special Purpose Insurers and Segregated Account Companies. Peregrine and Silverton are registered as SPIs under the Insurance Act licensed to carry on special purpose business. Special purpose business is defined under the Insurance Act as insurance business under which an insurer fully funds its liabilities to the persons insured.

Unlike other (re)insurers, SPIs are fully funded to meet their (re)insurance obligations and are deemed "bankruptcy remote". As a result, the application and supervision processes are streamlined to facilitate the transparent structure. SPIs are required to file electronic statutory financial returns and the BMA has the discretion to modify such insurer's statutory filings 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.

Segregated Account Companies. Peregrine and Silverton are also registered as segregated accounts companies under the Bermuda Segregated Accounts Companies Act 2000, as amended. As a segregated accounts company, Peregrine and Silverton are required to segregate the assets and liabilities linked to their respective segregated accounts from the assets and liabilities linked to their other respective segregated accounts and from their general account assets and liabilities. The segregated account representative of a segregated accounts company has the duty to inform the Registrar of Companies in relation to solvency matters and non-compliance, where applicable.

Economic Substance

Parent, Aspen Holdings, Aspen Bermuda, Peregrine, Silverton and Acorn are also subject to the Economic Substance Act 2018, as amended, and the Economic Substance Regulations 2018, as amended (together the "ESA"). The ESA was enacted to demonstrate Bermuda's commitment to comply with international standards with respect to cooperation for tax purposes and to ensure that Bermuda does not facilitate the use of structures which attract profits, but which do not reflect real economic activity within Bermuda. The ESA requires entities subject to it to make annual filings with the Bermuda Registrar of Companies to demonstrate the economic substance of the entity's activities and business in Bermuda. The first economic substance filings and declaration due under the ESA will be in respect of the financial period of the relevant entities commencing on or after January 1, 2019. Filings are not expected to be due until Q2 2020 and thereafter must be made within six months following the end of the relevant financial period. For those Aspen entities subject to the ESA, it is expected that the filings will meet the ESA requirements.

Privacy Laws

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

U.K. and E.U. Regulation

General. Aspen U.K. is authorized by the Prudential Regulation Authority (the "PRA") to effect and carry out (re)insurance contracts in the U.K. in all classes of general (non-life) business and is regulated by both the PRA with respect to prudential matters and by the Financial Conduct Authority (the "FCA") with respect to the conduct of its business.

Prior to the United Kingdom's decision to withdraw from the E.U. ("Brexit"), an insurance company with authorization to write insurance business in the U.K. could provide cross-border services in other member states of the European Economic Area ("EEA") subject to having notified the appropriate EEA host state regulator via the PRA prior to commencement of the provision of services and the appropriate EEA host state regulator not having good reason to refuse consent. Post-Brexit, such access is allowed pursuant to transitional arrangements which will remain in place until December 31, 2020. As an alternative, an insurance company may establish a branch office within another EEA member state, subject to it also notifying the appropriate EEA host state regulator via the PRA. Prior to Brexit, Aspen U.K. notified the Financial Services Authority (the "FSA") (the PRA's predecessor) of its intention to write insurance and reinsurance business in all other EEA member states. As a result, Aspen U.K. is currently licensed to write insurance business under the "freedom of services" within all EEA member states (freedom of services and freedom of establishment rights together, "Passporting Rights") contained in the European Council's Insurance Directives. As a general insurer, Aspen U.K. is able to carry out reinsurance business on a cross-border services basis across the EEA.

Following Brexit and cessation of the U.K.'s withdrawal agreement and the transitional arrangements on December 31, 2020, Aspen U.K. will likely lose its EEA financial services Passporting Rights. However, AMAL will continue to be able to access the EEA market through Lloyd's Insurance Company, S.A. in Brussels ("Lloyd's Brussels"). Lloyd's Brussels commenced underwriting all non-life risks from non-U.K. EEA countries from January 1, 2019. Our business written through Lloyd's Brussels stamp 5383 is 100% reinsured by Syndicate 4711. In addition, Aspen Bermuda established a branch in Zurich, Switzerland in 2019 to write property and casualty reinsurance with inception dates of January 1, 2020 and later.

Depending on the outcome of political negotiations associated with Brexit, it may be necessary for Aspen to undertake portfolio transfers of its EEA insurance policies to allow for contract continuity post-Brexit. Such an undertaking would involve the transfer of all non-U.K. EEA underwriting liabilities existing in relevant insurance classes in Aspen U.K. to an appropriately authorized third party and allow these liabilities to continue to be administered post-Brexit. A similar transfer of EEA insurance policies is in place between Lloyd's and Lloyd's Brussels. Also depending on the outcome of political negotiations associated with Brexit, there is uncertainty as to whether and when the U.K.'s regulatory regime will be agreed as 'mutually equivalent' to that of the E.U., particularly as to the application of the Solvency II Directive (defined below).

For more information on the uncertainty surrounding the implementation and effect of Brexit, refer to Item 3D, "Risk Factors - Regulatory Risks - The United Kingdom's decision to withdraw from the E.U. could adversely impact our business, results of operations and financial condition".

Solvency Requirements. Aspen U.K., Aspen European Holdings Limited ("Aspen European") and AMAL (by virtue of being a managing agent of Lloyd's) are required to meet economic risk-based solvency requirements under the E.U. directive covering the capital adequacy, risk management and regulatory reporting for insurers (the "Solvency II Directive"). Solvency II, together with European Commission "delegated acts" and guidance issued by the European Insurance and Occupational Pensions Authority ("EIOPA") set out classification and eligibility requirements, including the features which capital must display in order to qualify as regulatory capital.

Solvency II requires insurers to maintain minimum Solvency Capital Requirement ("SCR"), which is calculated by an approved internal capital model or by a standard formula prescribed by EIOPA in accordance with the Solvency II Directive. Aspen U.K. and Aspen European have received approval from the PRA, and AMAL has received approval from Lloyd's, to use an agreed Internal Model to calculate their respective SCR. Aspen U.K. and AMAL are required to ensure that the Internal Model operates properly on a continuous basis and that it continues to comply with the "Solvency Capital Requirements - Internal Models" provisions as set out in the PRA rulebook and Solvency II Delegated Acts, and, with respect to AMAL, within the Lloyd's minimum

standards. If Aspen U.K. fails to comply with these requirements, the PRA may revoke its approval for Aspen U.K. to use the Internal Model or apply a capital buffer to the SCR calculated by the Internal Model. Aspen U.K. must also maintain the ability to calculate its SCR using the Standard Formula as prescribed by EIOPA.

Aspen U.K. and AMAL are required to maintain a minimum margin of solvency equivalent to their SCR at all times, the calculation of which depends on the type and amount of insurance business written as well as reserve, credit, market and operational risks. The financial resources maintained in support of the SCR must be adequate, both as to amount and quality, to ensure that there is no significant risk that an entity's liabilities cannot be met as they fall due. If the PRA with respect to Aspen U.K. or Lloyd's with respect to AMAL, considers that there are insufficient capital resources, it can advise of the amount and quality of capital resources it considers necessary.

Solvency II Regime Reports and Returns. Under the Solvency II regime, Aspen U.K. is required to submit quarterly and annual filings with the PRA, including an annual Solvency and Financial Condition Report ("SFCR"), which must also be posted on Aspen's website. Aspen U.K. must submit an annual Own Risk and Solvency Assessment ("ORSA") to the PRA. The ORSA report is produced annually and provides a summary of all of the activity and processes during the preceding year to assess and report on risks and ensure that our overall solvency needs are met at all times including a forward-looking assessment. It also explains the linkages between business strategy, business planning and capital and risk management processes. In 2016, the PRA granted Aspen U.K. a waiver for five years absolving it from the requirement to produce certain regulatory returns at the EEA-sub-group level due to Aspen Bermuda being subject to equivalent group supervision.

Restrictions on Dividend Payments. The company law of England and Wales prohibits English companies, including Aspen U.K., AMAL and AUL, from declaring dividends to their shareholders unless they have profits available for distribution. The determination of whether a company has profits available for distribution is based on its accumulated realized profits and other distributable reserves less its accumulated realized losses. While the U.K. insurance regulatory rules impose no statutory restrictions on a general insurer's ability to declare a dividend, the PRA's rules require each authorized insurance company within its jurisdiction to maintain its solvency margin at all times. Accordingly, Aspen U.K., AMAL and AUL may not pay a dividend if the payment of such dividend would result in a failure to maintain their minimum solvency margin.

GDPR. The EU General Data Protection Regulation (the "GDPR"), which became effective on May 25, 2018, is a comprehensive regulation applying across all EU member states. All of our business units (regardless of whether they are located in the EU) may be subject to the GDPR when personal data is processed in relation to the offer of goods and services to individuals within the EU. Our compliance with GDPR requires preparation, expenditures, and ongoing compliance efforts. Further, enforcement priorities and interpretation of certain of the GDPR's provisions are still unclear. Under the GDPR there are penalties for noncompliance which could result in a material fine for certain activities. For example, sanctions for non-compliance with the GDPR could result in a penalty of up to the higher of (a) €20 million; and (b) 4% of a firm's global annual revenue for the preceding financial year for certain infringements, such as unlawful data transfer outside of the EEA.

Branch Regulations

General

Aspen U.K. and Aspen Bermuda are required to meet local capital requirements and make required local regulatory filings in connection with their respective branch office operations.

Switzerland

In 2019, ABL established a branch in Zurich, Switzerland to write property and casualty reinsurance. A branch that writes only reinsurance is not subject to supervision under the Insurance Supervision Act (Switzerland) by the Financial Markets Supervisory Authority ("FINMA").

Aspen U.K. established a property and casualty reinsurance branch in Zurich, Switzerland in 2007. In 2010, Aspen U.K. established an insurance branch in Zurich, Switzerland, which was regulated by FINMA pursuant to the Insurance Supervision Act (Switzerland). In 2017, Aspen U.K. discontinued writing insurance business via the insurance branch in Switzerland, however, FINMA maintains supervision over the Aspen U.K. branch while the business is in run off.

Singapore

In 2008, Aspen U.K. received approval from the Monetary Authority of Singapore ("MAS") to establish a reinsurance branch in Singapore. The activities of this branch are regulated by the MAS pursuant to The Insurance Act of Singapore. Aspen U.K. is also regulated by the Accounting and Corporate Regulatory Authority ("ACRA") as a foreign company in Singapore. AMAL set up a subsidiary company, Aspen Singapore Pte. Ltd. ("ASPL"), to access insurance business in Singapore and regulatory approval

for ASPL to act as an intermediary was received from MAS in 2015. ASPL was incorporated by ACRA in 2015 as a local company regulated by the Companies Act of Singapore.

Canada

Aspen U.K. established a Canadian branch in 2006 whose activities are regulated by the Office of the Superintendent of Financial Institutions (“OSFI”). OSFI is the federal regulatory authority that supervises Canadian and non-Canadian insurance companies operating in Canada pursuant to the Insurance Companies Act (Canada). In addition, the branch is subject to the laws and regulations of each of the provinces and territories in which it is licensed.

Australia

In 2008, Aspen U.K. received authorization from the Australian Prudential Regulation Authority (“APRA”) to establish a branch in Australia. The activities of the Australian branch are regulated by APRA pursuant to the Insurance Act of Australia 1973. Aspen U.K. is also registered by the Australian Securities and Investments Commission as a foreign company in Australia under the Corporations Act of Australia 2001.

For additional information on our branches, refer to Item 18, Note 20(a) of our consolidated financial statements, “Commitments and Contingent Liabilities - Restricted Assets.”

Other Regulated Firms

AUKSSL (previously APJ Services Limited) is authorized and regulated by the FCA and is subject to a separate prudential regime and other requirements for insurance intermediaries under the FCA Handbook.

Until February 7, 2020, ARML was also authorized and regulated by the FCA. ARML ceased binding business in July 2019 and, because Aspen U.K. has assumed ARML’s underwriting administration and claims handling obligations for the runoff business, ARML was voluntarily de-authorized.

Dubai

AUKSSL established a branch in Dubai through which it places reinsurance business into Aspen U.K. The Dubai Financial Services Authority (“DFSA”) confirmed its approval of the branch in 2015. In November 2019, we determined to close the Dubai branch. We expect this process to be completed in the second half of 2020.

Lloyd’s Regulation

General. The operations of Syndicate 4711 are subject to regulation and supervision of the PRA, FCA and the Council of Lloyd’s. AMAL is the managing agent for Syndicate 4711 and AUL provides underwriting capacity to Syndicate 4711 and is a Lloyd’s corporate member. The FCA and PRA both regulate insurers, insurance intermediaries and Lloyd’s itself. Lloyd’s establishes Minimum Standards for all managing agents to maintain that are designed to meet applicable regulatory requirements.

Solvency Requirements. Underwriting capacity of a member of Lloyd’s must be supported by providing a deposit (referred to as “Funds at Lloyd’s”) in the form of cash, securities or letters of credit in an amount determined in accordance with Lloyd’s requirements and the Solvency II regime. 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.

Intervention Powers. The Council of Lloyd’s has wide discretionary powers to regulate members’ underwriting at Lloyd’s. It may, for instance, change the basis on which syndicate expenses are allocated or vary the Funds at Lloyd’s or the investment criteria applicable to the provision of Funds at Lloyd’s. Exercising any of these powers might affect the return on an investment of the corporate member in a given underwriting year. Further, the annual business plans of a syndicate are subject to the review and approval of the Lloyd’s Franchise Board. The Franchise Board is responsible for setting risk management and profitability targets for the Lloyd’s market and operates a business planning and monitoring process for all syndicates.

If a member of Lloyd’s is unable to pay its debts to policyholders, such debts may be payable by the Lloyd’s Central Fund, which in many respects acts as an equivalent to a state guaranty fund in the United States. 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 Council of Lloyd’s has discretion to call or assess up to 3% of a member’s underwriting capacity in any one year as a Central Fund contribution. Our syndicate capacity for the 2020 underwriting year is \$717.6 million (2019 underwriting year - \$611.3 million).

Lloyd's Brussels. Lloyd's Brussels is authorized and regulated by the National Bank of Belgium ("NBB") and regulated by the Financial Services and Markets Authority (Belgium) ("FSMA"). Lloyd's Brussels is an authorized insurance company licensed to write non-life risks across the EEA and the UK and also maintains 19 branches across Europe. AMAL acts as an outsource provider for Lloyd's Brussels and, as such, AMAL is required to comply with policies and operating guidelines mandated by Lloyd's Brussels in order to meet NBB, FSMA and other European regulatory requirements applicable to Lloyd's Brussels.

Jersey Regulation

In 2010, we purchased APJ Jersey, a Jersey registered insurance company which is subject to the jurisdiction of the Jersey Financial Services Commission ("JFSC"). The JFSC sets the solvency regime for insurance companies under its jurisdiction. APJ Jersey holds funds in excess of the minimum requirement.

U.S. Regulation

General. Our U.S. operations are subject to extensive governmental regulation and supervision by the states and jurisdictions in which insurance entities operating in the U.S. are domiciled, licensed and/or eligible to conduct business. AAIC is licensed to write insurance on an admitted basis in all 50 U.S. states, the District of Columbia, Puerto Rico, Guam and the U.S. Virgin Islands. Aspen Specialty is licensed in North Dakota and is eligible to write surplus lines policies in all 50 U.S. states and the District of Columbia. Aspen U.K. and Syndicate 4711 are not licensed to write insurance on an admitted basis in any state in the U.S., but are alien insurers eligible to write surplus lines business in all 50 U.S. states, the District of Columbia and other U.S. jurisdictions based on their listing in the Quarterly Listing of Alien Insurers of the International Insurers Department ("IID") of the National Association of Insurance Commissioners ("NAIC"), the organization that works to promote standardization of best practices and assists state insurance regulatory authorities and insurers in the U.S. Pursuant to IID requirements, Aspen U.K. and Syndicate 4711 have established a U.S. surplus lines trust fund to secure obligations under U.S. surplus lines policies. As of December 31, 2019, Aspen U.K.'s and Syndicate 4711's surplus lines trust fund was \$215.5 million.

The insurance laws and regulations of our U.S. subsidiaries' domiciliary states have the most significant impact on our U.S. operations as well as the lead state regulator of an insurance holding company system. AAIC is domiciled in Texas and Aspen Specialty is domiciled in North Dakota. Following the Merger, AAIC and Aspen Specialty became part of the Apollo Global Management Group holding company system. The lead state insurance regulator for the Apollo Global Management Group holding company system is Iowa.

Generally, U.S. states regulate insurance holding companies to assure the fairness of inter-affiliate transactions, the propriety of dividends paid to corporate parents and the benefits of any proposed change of control transaction. States also regulate insurer solvency, accounting matters and risk management, as well as a range of operational matters, including authorized lines of business, permitted investments, policy forms and premium rates for admitted companies, maximum single policy risks, adequacy of reserves for losses and unearned premiums and maintenance of in-state deposits for the benefit of policyholders. To monitor compliance, state insurance departments perform periodic market conduct examinations and financial fitness examinations, and require the filing of annual and other reports relating to the financial condition of companies and other matters. Certain U.S. regulatory requirements are highlighted below. In addition, AAIC is a certified surety company approved by the U.S. Department of the Treasury and is subject to federal regulations related to Treasury certified sureties.

State Insurance Holding Company Acts. All U.S. states have laws regulating insurance holding company systems. These laws require insurance companies, which are formed and chartered in the state (referred to as "domestic insurers"), to register with the state department of insurance (referred to as their "domestic state or regulator") and file information concerning the operations of companies within the holding company system that may materially affect the operations, management or financial condition of the insurers within the system. Insurance holding company regulations principally relate to (i) state insurance approval of the acquisition of domestic insurers, (ii) prior review or approval of certain transactions between the domestic insurer and its affiliates, and (iii) regulation of dividends made by the domestic insurer. All transactions within a holding company system affecting domestic insurers must be determined to be fair and equitable.

The NAIC conducted the "Solvency Modernization Initiative" (the "Solvency Initiative"). The effort focused on reviewing the U.S. financial regulatory system and financial regulation affecting insurance companies including: (1) capital requirements; (2) corporate governance and risk management; (3) group supervision; (4) statutory accounting and financial reporting; and (5) reinsurance. As a result of the Solvency Initiative, among other items, the NAIC adopted the Corporate Governance Annual Disclosure Model Act, which has been enacted by our lead state of Iowa, as well as our domestic states of Texas and North Dakota. The model law requires insurers to make an annual confidential filing regarding their corporate governance policies. In addition, the NAIC adopted the Risk Management and Own Risk and Solvency Assessment Model Act ("ORSA"), which also has been adopted by Iowa, Texas and North Dakota. ORSA requires insurers to maintain a risk management framework and conduct an

internal risk and solvency assessment of the insurer’s material risks in normal and stressed environments. Many state insurance holding company laws, including those of Iowa, Texas and North Dakota, have also been amended to require insurers to file an annual confidential enterprise risk report with their lead domestic regulator, disclosing material risks within the entire holding company system that could pose an enterprise risk to the insurer.

State Dividend Limitations. Under Texas and North Dakota law, respectively, AAIC and Aspen Specialty may only pay dividends out of earned surplus as distinguished from contributed surplus. In addition, under Texas and North Dakota law, an insurance company’s policyholder surplus after payment of a dividend must be reasonable in relation to its outstanding liabilities and adequate for its financial needs.

In addition, Texas and North Dakota law generally limit the ability of AAIC or Aspen Specialty to pay dividends above a specified level. Dividends or distributions in excess of specified level are deemed “extraordinary” and are subject to prior notice to and approval of the applicable state insurance regulator.

Aspen U.S. Holdings, Inc. (“Aspen U.S. Holdings”) must also meet its own dividend eligibility requirements under Delaware corporate law in order to distribute any dividends received from AAIC. In particular, any dividend paid by Aspen U.S. Holdings must be declared out of surplus or net profits.

State Risk-Based Capital Regulations. U.S. insurers are subject to risk-based capital (“RBC”) guidelines that provide a method to measure the total adjusted capital (statutory capital and surplus plus other adjustments) taking into account the specific risk characteristics of the insurer’s investments and products. The RBC guidelines establish capital requirements for four categories: asset risk, insurance risk, interest rate risk and business risk.

Guaranty Fund Assessments and Residual Market Mechanisms. Most states require licensed insurance companies to participate in guaranty funds in order to provide funds for payment of losses for insurers which have become insolvent. Assessments are generally between 1% and 2% of annual premium written in the state. Some states also require licensed and admitted insurers to participate in various state residual market mechanisms whose goal is to provide affordability and availability of insurance to those clients who may not otherwise be able to obtain insurance, including, for example catastrophe insurance in high-risk areas. If losses exceed the funds, the pool is available to pay those losses. The pools have the ability to assess insurers to provide additional funds to the pool. The amounts of the assessment for each company are normally based upon the proportion of each insurer’s (and in some cases the insurer’s and its affiliates’) written premium for coverages similar to those provided by the pool, and are frequently uncapped.

Cybersecurity Regulations. In 2017, new cybersecurity rules took effect for financial institutions, insurers and certain other companies supervised by the New York Department of Financial Services (the “NYDFS Cybersecurity Regulation”), such as AAIC, which is licensed in New York. The NYDFS Cybersecurity Regulation imposes significant regulatory burdens intended to protect the confidentiality, integrity and availability of information systems.

In 2017, the NAIC also adopted the Insurance Data Security Model Law (the “Cybersecurity Model Law”). The Cybersecurity Model Law requires insurers, insurance producers and other entities required to be licensed under state insurance laws to comply with certain requirements under state insurance laws, such as developing and maintaining a written information security program, conducting risk and overseeing the data security practices of third-party vendors. The Cybersecurity Model Law closely resembles the NYDFS Cybersecurity Regulation and has been adopted by several U.S. states. Significant other comprehensive privacy laws have been enacted that some of our businesses are subject to, most notably the California Consumer Privacy Act (CCPA), which went into effect January 1, 2019. Several other states are considering adopting laws and regulations imposing obligations regarding the handling of personal data.

Operations of Aspen U.K., Syndicate 4711 and Aspen Bermuda. As stated above, Aspen U.K. and Syndicate 4711, are eligible to write surplus lines business as alien, non-admitted insurers in all 50 U.S. states, the District of Columbia and other U.S. jurisdictions. Because Aspen U.K. and Syndicate 4711 are not licensed under the laws of any U.S. state, U.S. solvency regulation tools otherwise applicable to admitted insurers do not generally apply to them. However, Aspen U.K. and Syndicate 4711 are subject to federal and state incidental regulations in areas such as those pertaining to federal and state reporting related to terrorism coverage and post-disaster emergency orders.

Credit for Reinsurance. Aspen U.K. and Aspen Bermuda also provide reinsurance to U.S. cedants. In general, a ceding company that obtains reinsurance from a reinsurer that is licensed, accredited or approved by the jurisdiction in which the ceding company is domiciled is permitted to reflect in its statutory financial statements a credit in an aggregate amount equal to the liability for unearned premiums and loss reserves and loss expense reserves ceded to the reinsurer. Many jurisdictions also permit ceding companies to take credit on their statutory financial statements for reinsurance obtained from unlicensed or non-admitted reinsurers if certain prescribed security arrangements are made. Aspen U.K. and Aspen Bermuda have obtained approval of a multi-beneficiary trust arrangement that satisfies the credit for reinsurance requirements for their U.S. customers. Generally, the minimum trust

fund amount is \$20.0 million plus an amount equal to 100% of a reinsurer's U.S. reinsurance liabilities collateralized under this arrangement. Aspen Bermuda has obtained approval to post reduced collateral with respect to obligations owed to cedants domiciled in Florida, New York and North Dakota (i.e., 20% versus 100%).

Recent developments in U.S. and international laws are trending towards eliminating collateral requirements for alien reinsurers operating in non-domestic markets. The Dodd-Frank Act authorized the U.S. Department of Treasury and the Office of the U.S. Trade Representative to negotiate covered agreements governing certain matters relating to insurance with foreign jurisdictions, including reinsurance collateral, group supervision and exchange of information between supervisory authorities. Such covered agreements could pre-empt state insurance laws. In September 2017, the U.S. federal authorities and the E.U. signed a covered agreement and, in response to Brexit, the U.S. and U.K. signed a covered agreement in December 2018 consistent with the U.S. and E.U. agreement. In terms of reinsurance, both covered agreements eliminate collateral and local presence requirements for alien reinsurers operating in non-domestic markets. U.S. state regulators have until September 22, 2022 to adopt the reinsurance requirements for E.U. and U.K. reinsurers that meet the prescribed minimum conditions set forth in the covered agreements or state law imposing reinsurance collateral requirements may be subject to federal preemption. In 2019 the NAIC adopted additional revisions to its Credit for Reinsurance Model Law and Model Regulation (together, the "2019 Amended Credit for Reinsurance Model Act") to conform to the reinsurance collateral elimination requirements of the covered Agreements. We will continue to monitor developments in collateral elimination with a view to seeking approval to eliminate Aspen U.K. and Aspen Bermuda collateral requirements in the states and jurisdictions that enact the 2019 Amended Credit for Reinsurance Model Act.

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

In the event that Apollo and Apollo's insurance company affiliates become an IAIG, we may be subject to a group capital calculation consistent with or comparable to international capital standards in that context. It is possible that the development of these international standards will have an impact on our capital position and capital structure in the future. We cannot predict with any degree of certainty the additional capital requirements, compliance costs or other burdens these requirements may impose on us.

Other U.S. Regulated Entities

Investment adviser regulation. Our subsidiary Aspen Capital Advisors Inc. ("Aspen Advisors") is registered with the SEC as a registered investment adviser. Aspen Advisors is the investment adviser to a private investment fund that primarily invests in securities tied to weather, natural disasters or other insurance risks as well as certain collateralized property catastrophe reinsurance contracts. In the future, Aspen Advisors may form and manage additional privately offered pooled investment vehicles, customize funds for single investors or groups of investors or manage separately managed accounts of other qualified clients on a limited basis. Aspen Advisors net assets under management as at December 31, 2019 were \$97.3 million (December 31, 2018 — \$86.3 million), all of which were managed on a discretionary basis. The amount disclosed differs from Aspen Advisors "regulatory assets under management" disclosed in Part 1 of its Form ADV, which is calculated in accordance with the requirements of that form.

Aspen Advisors is subject to regulation as an investment adviser by the SEC. Federal and state securities laws and regulations are primarily intended to protect investors in the securities markets and generally grant regulatory agencies broad rulemaking and enforcement powers, including the power to limit or restrict the conduct of business for failure to comply with such laws and regulations. The SEC and state securities regulatory authorities from time to time may make inquiries and conduct examinations regarding compliance by Aspen Advisors with securities and other laws and regulations. We intend to cooperate with such inquiries and examinations and take corrective action when warranted. Aspen Advisors may also be subject to similar laws and regulations in foreign countries if it provides investment advisory services, offers products similar to those described above or conducts other activities.

Legal Proceedings

Similar to the rest of the insurance and reinsurance industry, we are subject to litigation and arbitration in the ordinary course of our business. Our subsidiaries are regularly engaged in the investigation, conduct and defense of disputes, or potential disputes, resulting from questions of insurance and reinsurance coverage or claims activities. Pursuant to our insurance and reinsurance arrangements, many of these disputes are resolved by arbitration or other forms of alternative dispute resolution. In some jurisdictions, notably the U.S., a failure to deal with such disputes or potential disputes in an appropriate manner could result in an award of “bad faith” punitive damages against our Operating Subsidiaries. In addition, we may be subject to lawsuits and regulatory actions in the normal course of business that do not arise from, or directly relate to, insurance and reinsurance coverage or claims. This category of litigation typically involves, among other things, allegations of underwriting errors or omissions, employment claims or regulatory activity.

While any legal or arbitration proceedings contain an element of uncertainty, we do not believe that the eventual outcome of any specific litigation, arbitration or alternative dispute resolution proceedings to which we are currently a party will have a material adverse effect on the financial condition of our business as a whole.

Disclosure of Certain Activities Related to Iran

Section 13(r) of the Securities Exchange Act of 1934, as amended (“Section 13(r)”), requires all issuers that file annual or quarterly reports with the SEC to disclose certain activities, transactions or dealings with Iran. Many of the activities, transactions and dealings that Section 13(r) requires to be reported were previously subject to U.S. sanctions or prohibited by applicable local law. On January 16, 2016, the United States and the E.U. eased sanctions against Iran pursuant to the Joint Comprehensive Plan of Action (“JCPOA”). On May 8, 2018, the United States announced their withdrawal from the JCPOA (the “U.S. Decision”), thus re-imposing sanctions against Iran after the expiry of the permitted wind-down periods. The assessment of the economic situation resulting from the U.S. Decision led the Company to decide not to pursue business in Iran. Accordingly, contracts entered into by our non-U.S. (re)insurance subsidiaries with Iranian entities prior to the U.S. Decision were either not renewed or terminated in a timely manner.

Certain of our operations located outside the United States, however, underwrite marine and energy treaties on a worldwide basis and, as a result, the underlying insurance and reinsurance portfolios may have exposure to the Iranian petroleum resources, refined petroleum, and petrochemical industries. For example, certain of our operations underwrite global marine hull and cargo policies that provide coverage for vessels navigating into and out of ports worldwide, which could include Iran. We do not believe that any coverage we have provided has directly or significantly facilitated or contributed to the Iranian petroleum resources, refined petroleum, or petrochemical industry.

For the year ended December 31, 2019, we are not aware of any direct premium apportionment with respect to underwriting insurance or reinsurance sanctioned activities reportable under Section 13(r). Should any such risks have entered into the stream of commerce covered by the insurance and reinsurance portfolios underlying our treaties, we believe that the premiums associated with such business would be immaterial.

C. Organizational Structure

The Company’s ordinary shares are owned by Parent, which is an affiliate of certain investment funds managed by affiliates of Apollo Global Management, Inc., a leading global investment manager. Class A common stock and certain preferred shares of Apollo Global Management, Inc. are publicly traded on the NYSE.

The Company’s principal operating subsidiaries at December 31, 2019 are as follows:

Name of Subsidiary	Jurisdiction of Incorporation	Ownership Interest Held
Aspen Insurance UK Limited	United Kingdom	100.0%
Aspen Bermuda Limited	Bermuda	100.0%
Aspen Specialty Insurance Company	North Dakota	100.0%
Aspen American Insurance Company	Texas	100.0%
Aspen Underwriting Limited*	United Kingdom	100.0%

* AUL (as corporate member of Syndicate 4711 which is managed by AMAL)

Refer to Exhibit 8.1 to this report for a listing of all the Company’s subsidiaries.

D. Property, Plants and Equipment

We lease office space in Hamilton, Bermuda where we are headquartered. In addition, the Company and its subsidiaries lease office space in the United States, the United Kingdom, Australia, Singapore, Switzerland and the United Arab Emirates. We renew and enter into leases in the ordinary course of business as required. For more information on our leasing arrangements, refer to Item 18, Note 18 of our consolidated financial statements, “Operating Leases.”

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

The following is a discussion and analysis of our financial condition and results of operations for the twelve months ended December 31, 2019, 2018 and 2017. This discussion and analysis should be read in conjunction with our audited consolidated financial statements and related notes contained in Item 18 of this report. The discussion below includes forward-looking statements, which, although based on assumptions that we consider reasonable, are subject to risks and uncertainties which could cause actual events or conditions to differ materially from those expressed or implied by the forward-looking statements. See Item 5G, Safe Harbor below and Item 3D, Risk Factors of this report for a discussion of risks and uncertainties.

Executive Overview

Strategic Initiatives. 2019 was a transitional year for the Company as we undertook a number of actions following the merger in February 2019 to strengthen the fundamentals of the organization and better position the business to create value over the long-term.

Underwriting Portfolio Review. We undertook a strategic review of our underwriting portfolio and decided to wind down business that did not meet our underwriting performance criteria. We also took strategic steps to reduce volatility in the underwriting portfolio by reducing catastrophe exposure. Some of our key actions undertaken include:

- In 2019, we elected to wind down our U.K. regional business underwritten by AIUK that was bound through an agency agreement with Aspen Risk Management Limited (“ARML”), our U.K.-based managing general agency. The ARML business consisted of professional liability and property and casualty coverages for small to medium sized U.K.-based businesses. The ARML business was placed into runoff in July 2019;
- We exited our global credit and surety reinsurance business by selling our renewal rights to a third party;
- We have placed both international marine and energy liability products and our global accident and health line of business into runoff, which we determined to cease underwriting and have started to wind down in February 2020 and March 2020, respectively; and
- Reducing volatility by better managing our risk limits, including reducing exposure to U.S. catastrophe, wildfires and Japanese windstorm.

Presented with Item 5H, Reconciliation to Non-GAAP Financial Measures, is a table reflecting supplementary financial information regarding our two reporting segments, Reinsurance and Insurance, showing the impact of our financial performance from the lines which did not meet our performance criteria and have been classified as legacy.

Operational Streamlining. We also undertook initiatives to align our office locations more closely with our customers and to streamline the structure of our operations. While we closed branches and/or offices in Dubai, Miami and Dublin, we were able to transfer the business generated by those offices to other locations.

Repositioning Reinsurance Coverage. In 2019, the Company having completed strategic reviews, repositioned certain of its external reinsurance coverage arrangements from quota share reinsurance to targeted excess of loss agreements.

In March 2020, the Company entered into an adverse development reinsurance agreement with a wholly-owned subsidiary of Enstar Group Limited (“Enstar”) which will reinsure losses incurred on or prior to December 31, 2019. Enstar’s subsidiary will provide \$770 million of cover in excess of \$3.805 billion retention up to an aggregate limit of \$4.575 billion, and an additional \$250 million of cover in excess of \$4.815 billion. Completion of the transaction is subject to regulatory approvals and satisfaction of various other closing conditions. The transaction is expected to close in the first half of 2020.

Capital Management. We continue to focus on capital management and maintain our strong capital base. During 2019, the Company undertook the following principal capital management transactions:

- On August 13, 2019, we issued 10,000,000 Depositary Shares (the “Depositary Shares”), each of which represents a 1/1000th interest in a share of our newly designated 5.625% Non-Cumulative Preference Shares. The Depositary Shares have a liquidation preference of \$25 per Depositary Share (of \$250 million in aggregate liquidation preference); and
- On September 30, 2019, we redeemed the remaining \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment of \$5.5 million.

Investment Management. On January 16, 2019, Aspen Bermuda entered into a number of standard fixed for floating interest rate swaps with a total notional amount of \$3,318.0 million due to mature between January 18, 2021 and January 18, 2034. The total notional amount as at December 31, 2019 was \$1,800.0 million. Aspen Bermuda entered into the swaps in the ordinary

course of its investment activities to partially mitigate any negative impact of rises in interest rates on the market value of our fixed income portfolio.

Throughout 2019, the Company commenced the execution of its Strategic Asset Allocation program, and has, diversified its investment portfolio which now includes a portfolio of privately-held investments.

Significant progress in strengthening Aspen's global platform. We have promoted strong leaders internally as well as appointing a number of new, highly-regarded, management team members to help contribute to the transformation of the business, including Jonathan Ritz as President of Aspen Insurance Holdings Limited, Mo Kang as Chief People Officer, Andrew Kudera as Group Chief Actuary and Crystal Ottaviano as Group Chief Risk Officer.

We will continue to take decisive actions in 2020 in order to strengthen the business. Our franchise remains strong and we remain focused on enhancing the long-term positioning of our insurance and reinsurance businesses. We continue to hold a significant surplus against our capital requirements and look forward to further seeing the benefits of the action we have taken during 2019 as they flow through.

A. Operating Results

Our consolidated financial statements are prepared in accordance with U.S. GAAP. The discussions that follow include tables and discussions relating to our consolidated income statement and our segmental operating results for the twelve months ended December 31, 2019, 2018 and 2017 and should be read in conjunction with our audited consolidated financial statements and related Notes contained in this report. This discussion contains forward-looking statements that involve risks and uncertainties and that are not historical facts, including statements about our beliefs and expectations. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed below and particularly under the headings "Risk Factors," "Business Overview" and "Cautionary Statement Regarding Forward-Looking Statements" contained in Item 3D and Item 4, and the Explanatory Note of this report, respectively.

Operating highlights

- Gross written premiums of \$3,442.4 million in 2019, a decrease of 0.1% from 2018.
- Combined ratio of 113.9% for 2019, including \$143.2 million, or 6.3 percentage points of pre-tax catastrophe losses, net of reinsurance and \$5.7 million of reinstatement premiums, compared with 110.0% for 2018, which included \$262.9 million or 12.1 percentage points of pre-tax catastrophe losses, net of reinsurance and \$11.8 million of reinstatement premiums, and 125.7% for 2017, which included \$561.9 million, or 24.6 percentage points of pre-tax catastrophe losses, net of reinsurance and \$14.1 million of reinstatement premiums.
- Non-operating costs in 2019 included \$103.4 million of expenses related to the Merger, severance, retention and other costs, and \$22.2 million of expenses related to our operational effectiveness and efficiency program, which includes \$12.3 million of impairment charges related to lease assets as a result of sub-leasing certain office space.
- Interest rate swap losses in 2019 of \$130.2 million (December 31, 2018 — \$Nil) arising on the fixed for floating rate swaps used in the ordinary course of the Company's investments activities to partially mitigate any negative impact of rises in interest rates on the market value of the Company's fixed income portfolio.
- Net adverse development on prior year loss reserves of \$(59.5) million, or (2.6) combined ratio points, for 2019 compared with favorable development of \$111.1 million, or 5.0 combined ratio points, for 2018 and \$105.4 million, or 4.6 combined ratio points, for 2017.
- Net (loss), adjusted for preference share dividends, on average equity of 12.8% for 2019 compared with 7.7% in 2018 and 11.1% in 2017.

Shareholders' equity and financial leverage. Total shareholders' equity increased by \$85.1 million from \$2,640.4 million as at December 31, 2018 to \$2,725.5 million as at December 31, 2019, the most significant movements of which were as follows:

- net proceeds of \$241.6 million, comprising \$250.0 million of total liquidation preference less \$8.4 million of issuance expenses, relating to the issuance of 10,000,000 depository shares, each of which represents 1/1000th interest in a share of the newly designated 5.625% Perpetual Non-Cumulative Preference Shares (the "Depository Shares");
- a decrease of \$276.4 million in retained earnings primarily due to a net loss of \$241.7 million and the payment of \$35.9 million in dividends on our outstanding Preference Shares; and
- an increase of \$130.5 million in other comprehensive income which included \$151.3 million of net unrealized gains on available for sale investments, a \$24.8 million loss in foreign currency translation and a \$4.0 million net gain in the value of hedged foreign exchange contracts.

As at December 31, 2019, our total shareholders' equity included Preference Shares with a total value as measured by their respective liquidation preferences of \$775.0 million less issue costs of \$21.5 million (2018 — \$525.0 million less issue costs of \$13.1 million). Dividends paid on our outstanding Preference Shares in 2019 were \$35.9 million (2018 — \$30.5 million; 2017 — \$36.2 million). The increase in dividends in 2019 compared to 2018 was due to the issuance of the Depositary Shares on August 13, 2019.

Consolidated Income Statement

	Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
(\$ in millions, except for percentages)			
Revenues			
Gross written premiums	\$ 3,442.4	\$ 3,446.9	\$ 3,360.9
Net premiums written	2,427.9	2,082.0	2,212.5
Gross premiums earned	3,422.4	3,534.4	3,209.2
Net premiums earned	2,293.3	2,214.7	2,306.6
Net investment income	197.3	198.2	189.0
Realized and unrealized investment gains	97.1	110.0	148.9
Other income	4.9	9.0	8.9
Total Revenues	2,592.6	2,531.9	2,653.4
Expenses			
Insurance losses and loss adjustment expenses	1,679.7	1,573.0	1,994.7
Amortization of deferred policy acquisition costs	412.7	371.6	400.5
General, administrative and corporate expenses	521.6	491.7	502.2
Interest on long-term debt	20.2	25.9	29.5
Change in fair value of derivatives	144.2	31.8	(27.7)
Change in fair value of loan notes issued by variable interest entities	3.1	4.4	(21.2)
Realized and unrealized investment losses	10.9	174.7	28.4
Realized loss on the debt extinguishment	5.5	8.6	—
Net realized and unrealized exchange losses	11.8	3.5	23.9
Other expenses	1.7	2.7	4.9
Total Expenses	2,811.4	2,687.9	2,935.2
(Loss) from operations before income tax	(218.8)	(156.0)	(281.8)
Income tax (expense) / benefit	(22.9)	10.2	15.4
Net (Loss)	\$ (241.7)	\$ (145.8)	\$ (266.4)
Ratios			
Loss ratio	73.2%	71.0%	86.5%
Expense ratio	40.7%	39.0%	39.2%
Combined ratio	113.9%	110.0%	125.7%

For discussion of 2017 results, refer to our Annual Report on Form 10-K available on the internet site maintained by the SEC at www.sec.gov.

Gross written premiums. The following table sets forth the overall change in gross written premiums for our two business segments in the twelve months ended December 31, 2019, 2018 and 2017:

<u>Business Segment</u>	<u>Gross Written Premiums for the Twelve Months Ended December 31,</u>				
	<u>2019</u>		<u>2018</u>		<u>2017</u>
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>
Reinsurance ⁽¹⁾	\$ 1,485.5	(0.7)%	\$ 1,495.7	(3.4)%	\$ 1,548.5
Insurance	1,956.9	0.3 %	1,951.2	7.7 %	1,812.4
Total	<u>\$ 3,442.4</u>	<u>(0.1)%</u>	<u>\$ 3,446.9</u>	<u>2.6 %</u>	<u>\$ 3,360.9</u>

⁽¹⁾ Includes gross written premium of \$312.5 million related to CGB DS and \$Nil related to AgriLogic (2018 — \$259.7 million (CGB DS) and \$33.1 million (AgriLogic), 2017 — \$269.7 million (AgriLogic)).

Overall gross written premiums decreased by 0.1% in 2019 compared to 2018. Gross written premiums in our reinsurance segment decreased by 0.7% in 2019 compared to 2018 due to reductions in premiums written in casualty reinsurance and property catastrophe reinsurance, partially offset by a modest increase in other property reinsurance and specialty reinsurance. Gross written premiums in our insurance segment increased by 0.3% due to growth in financial and professional lines insurance, offset by reductions in marine, aviation and energy insurance and property and casualty insurance, where we have either previously exited certain lines of business or have placed certain business into runoff following completion of strategic reviews.

Overall gross written premiums in 2018 increased by 2.6% compared to 2017. Gross written premiums in our reinsurance segment decreased by 3.4% in 2018 compared to 2017 due to reductions in premiums written in property catastrophe reinsurance, other property reinsurance and specialty reinsurance, partially offset by a modest increase in premiums written in casualty reinsurance. Gross written premiums in our insurance segment increased by 7.7% in 2018 compared to 2017 due to growth in property and casualty insurance, and financial and professional lines insurance, partially offset by reductions in marine, aviation and energy insurance where we have exited certain lines of business which experienced challenging market conditions.

Ceded written premiums. The following table sets forth the overall change in ceded written premiums for our two business segments in the twelve months ended December 31, 2019, 2018 and 2017:

<u>Business Segment</u>	<u>Ceded Written Premiums for the Twelve Months Ended December 31,</u>				
	<u>2019</u>		<u>2018</u>		<u>2017</u>
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>
Reinsurance	\$ 234.4	(25.1)%	\$ 312.8	4.8%	\$ 298.5
Insurance	780.1	(25.9)%	1,052.1	23.8%	849.9
Total	<u>\$ 1,014.5</u>	<u>(25.7)%</u>	<u>\$ 1,364.9</u>	<u>18.9%</u>	<u>\$ 1,148.4</u>

Total ceded written premiums in 2019 decreased by \$350.4 million compared to 2018. Changes in our reinsurance program increased our retention ratio, which is defined as net written premiums as a percentage of gross written premiums, from 60.4% in 2018 to 70.5% in 2019. Ceded reinsurance premiums decreased for our insurance segment, primarily due to reductions in the proportion of business ceded on our casualty, financial and professional lines and property quota share programs. Ceded reinsurance premiums decreased for our reinsurance segment due to reductions in cessions in property catastrophe reinsurance, other property reinsurance, specialty reinsurance and casualty reinsurance.

Total ceded written premiums in 2018 increased by \$216.5 million compared to 2017, resulting in a decrease in our retention ratio from 65.8% in 2017 to 60.4% in 2018. Ceded reinsurance premiums increased for our insurance segment primarily due to an increase in the proportion of business ceded to our casualty, financial institutions and property quota share programs. Ceded reinsurance premiums increased for our reinsurance segment due to increased ceded reinsurance for our property catastrophe business lines where business previously ceded to Silverton, a consolidated entity, is now ceded to Peregrine, a non-consolidated entity. Ceded reinsurance premiums for our reinsurance segment also increased as a result of the transitional arrangements following the sale of AgriLogic in December 2017.

Net premiums earned. The following table sets forth the overall change in net premiums earned for our two business segments in the twelve months ended December 31, 2019, 2018 and 2017:

<u>Business Segment</u>	<u>Net Premiums Earned for the Twelve Months Ended December 31,</u>					
	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>	
Reinsurance ⁽¹⁾	\$ 1,255.2	(0.1)%	\$ 1,256.4	4.2 %	\$ 1,206.1	
Insurance	1,038.1	8.3 %	958.3	(12.9)%	1,100.5	
Total	<u>\$ 2,293.3</u>	<u>3.5 %</u>	<u>\$ 2,214.7</u>	<u>(4.0)%</u>	<u>\$ 2,306.6</u>	

⁽¹⁾ Includes net earned premium of \$299.5 million related to CGB DS and \$Nil related to AgriLogic (2018 — \$243.6 million (CGG DS) and \$2.8 million (AgriLogic), 2017 — \$198.8 million (AgriLogic)).

Net premiums earned increased by \$78.6 million, or 3.5%, in 2019 compared to 2018 due to a \$190.6 million decrease in ceded earned premiums partially offset by a \$112.0 million decrease in gross earned premiums. Net premiums earned decreased by \$91.9 million, or 4.0%, in 2018 compared to 2017 due to a \$417.1 million increase in ceded earned premiums partially offset by a \$325.2 million increase in gross earned premiums.

Combined ratio. We monitor the ratio of losses and expenses to net earned premium (the “combined ratio”) as a measure of relative performance where a lower ratio represents a better result than a higher ratio. The combined ratios for our two business segments for the twelve months ended December 31, 2019, 2018 and 2017 were as follows:

<u>Business Segment</u>	<u>Combined Ratios for the Twelve Months Ended December 31,</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Reinsurance	103.1%	104.0%	125.1%
Insurance	109.7%	104.0%	117.9%
Total ⁽¹⁾	113.9%	110.0%	125.7%

⁽¹⁾ The total combined ratio includes the impact from corporate expenses and non-operating expenses.

The overall combined ratio for 2019 increased by 3.9 percentage points compared to 2018 due to an increase in the loss ratio and expense ratio. The increase in loss ratio was due primarily to prior year unfavorable reserve development of \$59.5 million and a \$24.6 million increase in large losses. The expense ratio increased by 1.7 percentage points due to lower ceded commission and an increase in non-operating expenses.

The combined ratio for 2018 improved by 15.7 percentage points compared to 2017 due mainly to a decrease in the loss ratio. The improvement in the loss ratio was due primarily to a \$301.3 million decrease in catastrophe losses and a \$38.7 million decrease in large losses, partially offset by a \$91.9 million decrease in net earned premiums. The expense ratio for 2018 decreased by 0.2 percentage points due to a reduction in general, administrative and corporate expenses and a decrease in policy acquisition expenses due to over-rider commissions associated with the increase in ceded reinsurance premiums partially offset by a reduction in net earned premiums.

Losses and loss adjustment expenses. The loss ratio for 2019 of 73.2% increased by 2.2 percentage points compared to 2018 and losses and loss adjustment expenses increased from \$1,573.0 million in 2018 to \$1,679.7 million in 2019. The increase in the loss ratio was largely due to a \$170.6 million unfavorable movement in the level of prior year reserve releases, from releases of \$111.1 million in 2018 to strengthening of \$59.5 million in 2019, primarily from international marine and energy liability products, which we placed in runoff in February 2020. Furthermore, there was an increase in large losses of \$24.6 million, including \$30.4 million of credit reinsurance losses, \$16.4 million fire-related losses and \$47.0 million of other large losses. These movements were partially offset by a \$125.8 million decrease in catastrophe losses, from \$274.7 million in 2018 to \$148.9 million in 2019.

The loss ratio for 2018 of 71.0% increased by 15.5 percentage points compared to 2017 and losses and loss adjustment expenses increased from \$1,994.7 million in 2017 to \$1,573.0 million in 2018. The improvement in the loss ratio was largely due to a \$301.3 million decrease in catastrophe losses and a \$38.7 million decrease in large losses which offset the impact from a \$91.9 million decrease in net earned premiums. Net losses from catastrophes decreased from \$576.0 million in 2017 to \$274.7 million in 2018. Large losses in 2018 included \$39.7 million of fire-related losses, \$19.6 million credit and surety losses, and \$9.9 million in relation to a dam construction.

In the reinsurance segment, the loss ratio for 2019 was 73.1% compared to 73.8% in 2018 largely due to a \$91.4 million decrease in catastrophe losses, partially offset by a \$19.6 million increase in large losses and a \$13.5 million decrease in reserve releases,

and an increase in losses incurred on our U.S. agricultural business together with a change in mix of business written in the segment. In 2019, there were \$130.8 million of catastrophe losses, net of reinsurance recoveries, associated with Typhoons Hagibis and Faxai, Hurricane Dorian, storms in Australia, Indian monsoons and other weather-related events. In 2018, we experienced \$222.2 million of catastrophe losses, net of reinsurance recoveries, associated with Hurricanes Florence and Michael in the U.S., Typhoon Jebi in Japan, Winter Storm Friederike in Europe, wildfires in California, U.K. winter storms and other U.S. and Asian weather-related events.

In the insurance segment, the loss ratio for 2019 was 73.4% compared to 67.4% in 2018 largely due to a \$157.1 million decrease in reserve releases from a \$42.7 million release in 2018 to a \$114.4 million strengthening in 2019, and a \$5.0 million increase in large losses. These movements more than offset the impact from a \$79.8 million increase in net earned premiums and a \$34.4 million decrease in catastrophe losses. In 2019, there were \$18.1 million of catastrophe losses associated with Hurricanes Dorian and other weather-related events. The loss ratio for 2018 was 67.4% compared to 79.8% for 2017 mainly due to a \$56.2 million decrease in catastrophe losses, a \$47.6 million decrease in large losses and a \$19.1 million increase in reserve releases which more than offset the impact from a \$142.2 million decrease in net earned premiums. In 2018, our insurance segment experienced \$52.5 million of catastrophe losses associated with Hurricanes Florence and Michael, wildfires in California, U.K. winter storms and other U.S. and Asian weather-related events.

Overall, prior year reserves were strengthened by \$59.5 million in 2019, a net adverse movement of \$170.6 million compared with a \$111.1 million release in 2018. Reserve releases in the reinsurance segment in 2019 were \$54.9 million compared to \$68.4 million in 2018 and came from property catastrophe reinsurance, other property reinsurance and specialty reinsurance lines, partially offset by unfavorable development on casualty reinsurance. The reinsurance segment experienced favorable reserve development on prior year catastrophe losses including wildfires and other weather-related events, partially offset by reserve strengthening from Typhoon Jebi in Japan. Reserve strengthening in the insurance segment in 2019 was \$114.4 million compared to releases of \$42.7 million in 2018 and came primarily from international marine and energy liability products, which we placed in runoff in February 2020, and unfavorable development on U.S. primary casualty lines.

Overall, prior year reserve releases in 2018 increased by \$5.7 million from \$105.4 million in 2017 to \$111.1 million. Reserve releases in the reinsurance segment in 2018 were \$68.4 million and came from property catastrophe reinsurance, other property reinsurance and specialty reinsurance lines. Reserve releases in the insurance segment in 2018 were \$42.7 million compared to \$23.6 million in 2017 and came from property and casualty, and marine, aviation and energy lines. Further information relating to the release of reserves can be found below under “— Reserves for Losses and Loss Adjustment Expenses — Prior Year Loss Reserves.”

We have presented loss ratios excluding both the impact from catastrophe losses and prior year reserve movements (the accident year loss ratio excluding catastrophes) to aid in the analysis of the underlying performance of the business segments. We have defined major 2019 catastrophe losses as losses associated with Typhoons Faxai and Hagibis, Hurricane Dorian, storms in Australia, Indian monsoons and other weather-related events. We have defined major 2018 catastrophe losses as losses associated with Hurricanes Florence and Michael, Typhoon Jebi in Japan, Winter Storm Friederike in Europe, wildfires in California, U.K. winter storms and other U.S. and Asian weather-related events.

The underlying changes in loss ratios by business segment for the twelve months ended December 31, 2019, 2018 and 2017 are shown in the tables below. The current year adjustments represent catastrophe loss events incurred in those years which reflect net claims and reinstatement premium adjustments.

For the Twelve Months Ended December 31, 2019	Total Loss Ratio	Prior Year Reserve Movements	Current Year Adjustments	Accident Year Loss Ratio Excluding Catastrophes
Reinsurance	73.1%	4.4 %	(10.1)%	67.4%
Insurance	73.4%	(11.0)%	(1.7)%	60.7%
Total	73.2%	(2.6)%	(6.3)%	64.3%

For the Twelve Months Ended December 31, 2018	Total Loss Ratio	Prior Year Reserve Movements	Current Year Adjustments	Accident Year Loss Ratio Excluding Catastrophes
Reinsurance	73.8%	5.5%	(17.1)%	62.2%
Insurance	67.4%	4.5%	(5.5)%	66.4%
Total	71.0%	5.0%	(12.1)%	63.9%

For the Twelve Months Ended December 31, 2017	Total Loss Ratio	Prior Year Reserve Movements	Current Year Adjustments	Accident Year Loss Ratio Excluding Catastrophes
Reinsurance	92.6%	6.9%	(37.7)%	61.8%
Insurance	79.8%	2.1%	(10.4)%	71.5%
Total	86.5%	4.6%	(24.6)%	66.5%

Expenses. We monitor the ratio of expenses to gross earned premium (the “gross expense ratio”) as a measure of the cost effectiveness of our amortization of deferred policy acquisition costs, general, administrative and corporate expenses. The tables below present the contribution of the amortization of deferred policy acquisition costs and general, administrative and corporate expenses to the gross expense ratios and the total net expense ratios for the twelve months ended December 31, 2019, 2018 and 2017. We also present the effect of reinsurance purchased which impacts the reported net expense ratio by expressing the expenses as a proportion of net earned premiums.

Ratios Based on Gross Earned Premium	For the Twelve Months Ended December 31, 2019		
	Reinsurance	Insurance	Total
Gross policy acquisition expense ratio	19.4%	20.0 %	19.8 %
Effect of ceded reinsurance	1.7%	(5.8)%	(1.8)%
Net policy acquisition expense ratio	21.1%	14.2 %	18.0 %
Gross general, administrative and corporate expense ratio ⁽¹⁾	7.5%	11.9 %	15.2 %
Effect of ceded reinsurance premiums	1.4%	10.2 %	7.5 %
Net general and administrative expense ratio	8.9%	22.1 %	22.7 %
Total net expense ratio	30.0%	36.3 %	40.7 %

Ratios Based on Gross Earned Premium	For the Twelve Months Ended December 31, 2018		
	Reinsurance	Insurance	Total
Gross policy acquisition expense ratio	19.1%	19.1 %	19.1 %
Effect of ceded reinsurance	1.7%	(7.5)%	(2.3)%
Net policy acquisition expense ratio	20.8%	11.6 %	16.8 %
Gross general, administrative and corporate expense ratio ⁽¹⁾	7.4%	12.3 %	13.9 %
Effect of ceded reinsurance premiums	2.0%	12.7 %	8.3 %
Net general, administrative and corporate expense ratio	9.4%	25.0 %	22.2 %
Total net expense ratio	30.2%	36.6 %	39.0 %

Ratios Based on Gross Earned Premium	For the Twelve Months Ended December 31, 2017		
	Reinsurance	Insurance	Total
Gross policy acquisition expense ratio	18.6%	18.5 %	18.6 %
Effect of ceded reinsurance	0.9%	(3.5)%	(1.2)%
Net policy acquisition expense ratio	19.5%	15.0 %	17.4 %
Gross general, administrative and corporate expense ratio ⁽¹⁾	10.8%	14.4 %	15.6 %
Effect of ceded reinsurance premiums	2.2%	8.7 %	6.2 %
Net general, administrative and corporate expense ratio	13.0%	23.1 %	21.8 %
Total net expense ratio	32.5%	38.1 %	39.2 %

⁽¹⁾ The total group general and administrative expense ratio includes corporate and non-operating expenses.

Net policy acquisition expenses increased by \$41.1 million in 2019 compared to 2018 and by \$28.9 million in 2018 compared to 2017 primarily due to a decrease in ceded commissions from quota share contracts.

The increase in the gross policy acquisition expense ratio from 19.1% in 2018 to 19.8% in 2019 was due to a change in the mix of business written in the insurance segment, and increased profit commission on certain contracts within the reinsurance segment.

General, administrative, corporate and non-operating expenses increased by \$29.9 million from \$491.7 million in 2018 to \$521.6 million in 2019. The gross general, administrative and corporate expense ratio in 2019 increased by 1.3 percentage points compared to the prior period primarily due to a \$48.4 million increase in other non-operating costs, partially offset by reductions in operating expenses following the implementation of our operating effectiveness and efficiency program.

Non-operating costs in 2019 include \$103.4 million of expenses related to the Merger, severance, retention and other costs, and \$22.2 million of expenses related to our operational effectiveness and efficiency program, which includes \$12.3 million of impairment charges related to lease assets as a result of sub-leasing certain office space.

Non-operating costs in 2018 include the recognition of \$39.0 million of advisor fees related to the Merger, \$37.5 million of costs associated with our operational effectiveness and efficiency program and \$11.3 million of retention costs, partially offset by the write back of a \$14.1 million buy-out provision which was no longer exercisable.

Investment gains. Total net realized and unrealized investment gains for the twelve months ended December 31, 2019 were \$86.2 million (2018 — losses of \$64.7 million), driven primarily by mark to market gains in our fixed income portfolios. For more details, refer to Item 18, Note 4 of our consolidated financial statements, “Investments.”

Net investment income. In 2019, we generated net investment income of \$197.3 million, a decrease of 0.5% from the prior year (2018 — \$198.2 million).

Foreign exchange contracts. We use foreign exchange contracts to manage foreign currency risk. A foreign exchange contract involves an obligation to purchase or sell a specified currency at a future date at a price set at the time of the contract. Foreign exchange contracts will not eliminate fluctuations in the value of our assets and liabilities denominated in foreign currencies, but rather allow us to establish a rate of exchange for a future point in time.

As at December 31, 2019, we held foreign exchange contracts that were not designated as hedging under ASC 815 - “*Derivatives and Hedging*” with a notional amount of \$1,696.3 million (2018 — \$1,257.3 million). The foreign exchange contracts are recorded as derivatives at fair value in the balance sheet with changes recorded as a change in fair value of derivatives in the statement of operations. For the twelve months ended December 31, 2019, the impact of foreign exchange contracts on net income was a loss of \$14.0 million (December 31, 2018 — loss of \$31.8 million).

As at December 31, 2019, we held foreign exchange contracts that were designated as hedging under ASC 815 with a notional amount of \$85.5 million (2018 — \$94.3 million). The foreign exchange contracts are recorded as derivatives at fair value with the effective portion recorded in other comprehensive income and the ineffective portion recorded as a change in fair value of derivatives in the statement of operations. The contracts are considered to be effective and therefore the movement in other comprehensive income representing the effective portion was reflected as a gain of \$4.8 million for the twelve months ended December 31, 2019 (December 31, 2018 — loss of \$2.1 million).

As the foreign exchange contracts settle, the realized gain or loss is reclassified from other comprehensive income into general, administration and corporate expenses of the statement of operations and other comprehensive income. For the twelve

months ended December 31, 2019, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$0.9 million (December 31, 2018 — loss of \$1.2 million recognized within general, administration and corporate expenses).

Interest rate swaps. In the first quarter of 2019, the Company entered into fixed for floating interest rate swaps with a total notional amount of \$3,318.0 million due to mature between January 18, 2021 and January 18, 2034. The total notional amount as at December 31, 2019 was \$1,800.0 million. The interest rate swaps are used in the ordinary course of the Company's investments activities to partially mitigate the negative impact of rises in interest rates on the market value of the Company's fixed income portfolio. For the twelve months ended December 31, 2019, there was a loss of \$130.2 million (December 31, 2018 — \$Nil).

As at December 31, 2019, initial and variation margin with a fair value of \$111.1 million was posted to a Futures Commission Merchant to support the current valuation of the interest rate swaps (December 31, 2018 — \$Nil). As at December 31, 2019, no non-cash collateral was transferred to the Company by its counterparties (December 31, 2018 — \$Nil). Transfers of margin are recorded on the consolidated balance sheet within Derivatives at Fair Value, while transfers in respect of non-cash collateral are disclosed but not recorded. As at December 31, 2019, no amount was recorded in the consolidated balance sheet for the pledged assets.

Interest on long-term debt. Interest on long-term debt of \$20.2 million is the interest due on the 2023 Senior Notes. The reduction in the interest charge in the twelve months ended December 31, 2019 was due to the redemption, on September 30, 2019, of \$125.0 million of our 6.00% Senior Notes due 2020.

Income (loss) before tax. In the twelve months ended December 31, 2019, loss before tax was \$218.8 million (2018 — loss of \$156.0 million), consisting of the amounts set out in the table below:

	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Underwriting income (loss)	\$ (140.6)	\$ (87.6)	\$ (499.8)
Corporate expenses	(54.5)	(56.8)	(58.3)
Non-operating expenses	(125.6)	(77.2)	(32.7)
Net other income	3.2	6.3	4.0
Net investment income	197.3	198.2	189.0
Change in fair value of derivatives	(144.2)	(31.8)	27.7
Change in fair value of loan notes issued by variable interest entities	(3.1)	(4.4)	21.2
Realized and unrealized investment gains	97.1	110.0	148.9
Realized and unrealized investment losses	(10.9)	(174.7)	(28.4)
Realized loss on the debt extinguishment	(5.5)	(8.6)	—
Net realized and unrealized foreign exchange (losses)	(11.8)	(3.5)	(23.9)
Interest expense	(20.2)	(25.9)	(29.5)
(Loss) before tax	<u>\$ (218.8)</u>	<u>\$ (156.0)</u>	<u>\$ (281.8)</u>

The decrease in underwriting result in 2019 compared to 2018 was due to an increase in large losses and prior year reserve development. The improvement in underwriting income in 2018 compared to 2017 was due to lower catastrophe losses, a decrease in large losses and a modest increase in reserve releases.

The increase in corporate and non-operating expenses in 2019 compared to 2018 was due to a \$34.3 million increase in other non-operating costs. Non-operating costs recognized in 2019 include \$103.4 million of expenses related to the Merger, severance, retention and other costs, and \$22.2 million of expenses related to our operational effectiveness and efficiency program, which includes \$12.3 million of impairment charges related to lease assets as a result of sub-leasing certain office space.

The increase in corporate and non-operating expenses in 2018 compared to 2017 was largely due to a \$44.5 million increase in non-operating expenses, which included \$39.0 million of advisor fees related to the Merger, a \$37.5 million increase in costs associated with our operational effectiveness and efficiency program, partially offset by the write back of a \$14.1 million buy-out provision.

Realized loss on debt extinguishment. On September 30, 2019, we redeemed the remaining \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment of \$5.5 million.

As at December 31, 2019, the only material debt issued by Aspen Holdings totaling \$299.8 million was our \$300 million 4.650% Senior Notes due 2023 (the “2023 Senior Notes”).

On June 18, 2018, we elected to redeem \$125.0 million in aggregate principal amount of the 2020 Senior Notes which resulted in a realized loss, or make-whole payment, of \$8.6 million.

As at December 31, 2019 we had no loan notes outstanding with Silverton as a final payment was made to noteholders after the commutation of the reinsurance agreement on July 1, 2019 (2018 — \$4.6 million). For further information on Silverton, refer to Item 18, Note 5 of our consolidated financial statements, “Variable Interest Entities.”

Change in fair value of derivatives. The change in fair value of derivatives in 2019 was attributable to foreign exchange contracts that had a loss of \$14.0 million compared to a loss of \$31.8 million in 2018 and a loss of \$27.7 million in 2017, in addition to a loss of \$130.2 million attributable to fixed for floating interest rate swaps (2018 — \$Nil).

The \$3.1 million change in fair value of loan notes issued by variable interest entities represents the proportion of profit generated by Silverton attributable to third-party investors. The \$4.4 million change in the value of the loan notes in 2018 represents the proportion of profit generated by Silverton attributable to third-party investors.

Income tax expense. There was an income tax expense for the twelve months ended December 31, 2019 of \$22.9 million compared to an income tax benefit of \$10.2 million in 2018. The effective tax rate (defined as the tax charge or credit, divided by the profit or loss before tax), for the twelve months ended December 31, 2019 on our loss before tax was 10.5% negative (2018 — 6.5% positive).

The change in the tax rate, (defined as the tax charge or credit, divided by the profit or loss before tax) for 2019 was principally due to a tax charge of \$42.6 million arising from creation of a valuation allowance against deferred tax assets on operating losses incurred in the U.S., U.K. and Lloyd’s businesses.

The effective tax rate is subject to revision in future periods if circumstances change and depends on the relative profitability of the business underwritten in Bermuda (where the rate of tax on corporate profits is zero), the United Kingdom (where the corporation tax rate is 19% and will be reduced to 17% effective April 1, 2020) and the United States (where the federal income tax rate was previously 34% and was reduced to 21% effective January 1, 2018). The tax in each of the years is representative of the geographic spread of our business between taxable and non-taxable jurisdictions in such years.

Net income after tax. We reported a net loss after taxes of \$241.7 million in 2019 compared to a net loss of \$145.8 million in 2018. The difference in net loss was primarily due to a \$170.6 million unfavorable movement in the level of prior year reserve releases, the \$53.0 million decrease in underwriting income and a \$24.6 million increase in large losses, partially offset by a \$125.8 million decrease in catastrophe losses. The net loss of \$145.8 million in 2018 compared to the net loss of \$266.4 million in 2017 was primarily as a result of an improvement in the underwriting result due to lower catastrophe losses, a decrease in large losses, and a modest increase in reserve releases.

Other comprehensive income. Total other comprehensive income increased by \$130.5 million (2018 — \$66.0 million decrease), net of taxes, for the twelve months ended December 31, 2019. The increase in total other comprehensive income includes a net unrealized gain of \$158.1 million in the available for sale investment portfolio (2018 — \$81.0 million net unrealized loss) largely attributable to the impact of falling interest rates on our bond portfolios, a \$6.8 million reclassification of net realized gains to net income (2018 — \$4.5 million reclassified realized loss), a \$4.0 million unrealized gain (2018 — \$1.8 million unrealized loss) on the hedged derivative contracts and an unrealized loss in foreign currency translation of \$24.8 million (2018 — \$12.3 million unrealized gain) largely attributable to the impact from the continued strengthening of the U.S. dollar.

Underwriting Results by Business Segment

We are organized into two business segments, namely reinsurance and insurance. We have determined our reportable segments, Aspen Re (“Reinsurance”) and Aspen Insurance (“Insurance”), by taking into account the manner in which management makes operating decisions and assesses operating performance. Profit or loss for each of the business segments is measured by underwriting profit or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, amortization of deferred policy acquisition costs and general and administrative expenses. Underwriting profit or loss provides a basis for management to evaluate the segment’s underwriting performance.

Management measures segment results on the basis of the combined ratio, which is obtained by dividing the sum of the losses and loss expenses, amortization of deferred policy acquisition costs and operating and administrative expenses by net premiums earned. Other than corporate expenses, indirect operating and administrative expenses are allocated to business segments predominantly based on each segment’s proportional share of gross earned premiums.

Non-underwriting disclosures. We provide additional disclosures for corporate and other (non-underwriting) income and expenses. Corporate and other income and expenses include net investment income, net realized and unrealized investment gains or losses, expenses associated with managing the Aspen Group, certain strategic and non-recurring costs, changes in fair value of derivatives and changes in fair value of loan notes issued by variable interest entities, interest expense, net realized and unrealized foreign exchange gains or losses and income taxes, which are not allocated to the business segments. Corporate expenses are not allocated to our business segments as they typically do not fluctuate with the levels of premiums written and are not directly related to our segment operations.

We do not allocate our assets by business segment as we evaluate underwriting results of each segment separately from the results of our investment portfolio. Segment profit or loss for each of our business segments is measured by underwriting profit or loss. Refer to Item 18, Note 3 of our consolidated financial statements, “Segment Reporting” for information on gross and net premiums written and earned, underwriting results, and combined ratios and reserves for each of our business segments.

Reinsurance

Our reinsurance segment consists of property catastrophe reinsurance, other property reinsurance, casualty reinsurance and specialty reinsurance. For a more detailed description of this segment, refer to Item 4, “Business Overview — Business Segments — Reinsurance” and Item 18, Note 3 of our consolidated financial statements, “Segment Reporting.”

Gross written premiums. The table below shows our gross written premiums for each line of business in our reinsurance segment for the twelve months ended December 31, 2019, 2018 and 2017 and the percentage change in gross written premiums for each line of business:

<u>Lines of Business</u>	For the Twelve Months Ended December 31,					
	2019		2018		2017	
	(\$ in millions)	% change	(\$ in millions)	% change	(\$ in millions)	
Property catastrophe reinsurance	\$ 249.6	(5.0)%	\$ 262.8	(5.9)%	\$ 279.3	
Other property reinsurance	356.9	3.2 %	346.0	(1.2)%	350.3	
Casualty reinsurance	294.7	(10.2)%	328.1	2.9 %	319.0	
Specialty reinsurance	584.3	4.6 %	558.8	(6.9)%	599.9	
Total	<u>\$ 1,485.5</u>	<u>(0.7)%</u>	<u>\$ 1,495.7</u>	<u>(3.4)%</u>	<u>\$ 1,548.5</u>	

The decrease in gross written premiums in 2019 compared to 2018 in property catastrophe reinsurance was primarily due to portfolio optimization. The increase in gross written premiums in other property reinsurance was due to an increase in property facultative and pro rata premiums. The decrease in gross written premiums in casualty reinsurance was due to reductions in U.S. casualty reinsurance premiums. The increase in gross written premiums in specialty reinsurance was largely due to increases in mortgage and U.S. agricultural reinsurance business, partially offset in a reduction in credit and surety reinsurance business, which during 2019 we exited after selling our renewal rights to a third party.

The decrease in gross written premiums in property catastrophe reinsurance was primarily due to the recognition of \$22.2 million of reinstatement premiums associated with the catastrophe events which occurred in 2017 compared with \$12.6 million of reinstatement premiums associated with the catastrophe losses that occurred in 2018. The decrease in gross written premiums in other property reinsurance was due to a reduction in risk excess and pro rata premiums. The increase in gross written premiums in casualty reinsurance was due to favorable adjustments to prior year premium estimates. The decrease in gross written premiums in specialty reinsurance was largely due to reductions in engineering and mortgage business which offset growth in agriculture reinsurance business.

Ceded written premiums. Total ceded written premiums in 2019 were \$234.4 million, a decrease of \$78.4 million compared to 2018. The decrease in ceded written premiums is due to reductions in cessions in property catastrophe reinsurance, other property reinsurance, specialty reinsurance and casualty reinsurance.

Total ceded written premiums in 2018 were \$312.8 million, an increase of \$14.3 million compared to \$298.5 million in 2017. The increase in ceded written premiums in property catastrophe reinsurance was due to ceding business to Peregrine, a non-consolidated entity, which business had previously been ceded to Silverton, a consolidated entity. The decrease in ceded written premiums in specialty reinsurance was due to a reduction in retrocession costs for our agriculture business.

Net premiums earned. Net premiums earned decreased by \$1.2 million, or 0.1%, in 2019 compared to 2018 largely due to the decreased gross earned premiums from our specialty reinsurance and property catastrophe business lines, offset by decreased ceded costs. Net premiums earned increased by \$50.3 million, or 4.2%, in 2018 compared to 2017 largely due to increased gross earned premiums from credit and surety business written in our specialty reinsurance business line, partially offset by increased ceded costs.

Losses and loss adjustment expenses. The loss ratio was 73.1% in 2019, a decrease of 0.7 percentage points compared to 73.8% in 2018. The decrease in the loss ratio was mainly due to a \$91.4 million decrease in catastrophe losses, partially offset by a \$19.6 million increase in large losses and a \$13.5 million decrease in reserve releases, and an increase in losses incurred on our U.S. agricultural business together with a change in mix of business written in the segment. In 2019, our reinsurance segment experienced \$130.8 million of catastrophe losses, net of reinsurance recoveries, including \$42.2 million from Typhoon Hagibis, \$33.5 million from Typhoon Faxai, \$8.6 million from Hurricane Dorian, \$4.6 million from storms in Australia, \$3.4 million from Indian monsoons, and \$38.5 million from other weather-related events. Large losses experienced in our reinsurance segment during 2019 were \$69.2 million, comprised of \$30.4 million of credit reinsurance losses, \$16.4 million of fire-related losses, \$7.8 million of aviation losses, \$8.3 million of satellite-related losses and \$6.3 million of bloodstock losses.

The loss ratio in 2018 decreased to 73.8% compared to 92.6% in 2017. The decrease in the loss ratio was mainly due to a \$245.1 million decrease in catastrophe losses which offset a \$24.3 million increase in large losses and a \$13.4 million decrease in reserve releases. In 2018, our reinsurance segment experienced \$222.2 million of catastrophe losses, net of reinsurance recoveries, including \$49.3 million from Typhoon Jebi, \$15.3 million from Hurricane Florence, \$2.9 million from Winter Storm Friederike, \$28.7 million from Hurricane Michael, \$70.5 million from the wildfires in California, \$6.4 million from Typhoon Trami and \$49.1 million from other U.S. and Asian weather-related events. Large losses experienced during 2018 included \$13.0 million of credit and surety losses, \$26.7 million of fire-related losses, and \$9.9 million in relation to the construction of a dam, compared with \$25.3 million of fire-related losses in 2017.

The \$13.5 million reduction in prior year reserve releases from \$68.4 million in the twelve months ended December 31, 2018 to \$54.9 million in the current period was primarily due to a reduction in reserve releases in our property catastrophe reinsurance, strengthening in casualty reinsurance business lines, partially offset by an increase in prior year reserve releases on specialty reinsurance business lines. The reinsurance segment experienced favorable reserve development on prior year catastrophe losses including wildfires and other weather-related events, partially offset by reserve strengthening from Typhoon Jebi in Japan. The reserve releases in 2018 was primarily due to a reduction in reserve releases in our casualty reinsurance and specialty reinsurance business lines. The \$13.4 million decrease in prior year reserve releases from \$81.8 million in the twelve months ended December 31, 2017 included a \$13.1 million reinsurance recovery in respect of an offshore energy-related loss that occurred in Africa and adverse development of \$12.8 million in casualty reinsurance due to the U.K. Ministry of Justice decision to increase the discount rate used to calculate lump sum awards in U.K. bodily injury cases, known as the Ogden rate. Prior year reserve releases are further discussed below under “Reserves for Losses and Loss Adjustment Expenses.”

Policy acquisition, general and administrative expenses. Amortization of deferred policy acquisition costs were \$264.9 million for the twelve months ended December 31, 2019, equivalent to 21.1% of net premiums earned (2018 — \$260.9 million or 20.8% of net premiums earned; 2017 — \$235.5 million or 19.5% of net premiums earned). The increase in the acquisition ratio was due to an increase in profit commission on certain contracts within the reinsurance segment together with reductions in ceded over-rider commissions. The increase in policy acquisition expense ratio in 2018 compared with 2017 was due predominantly to the impact on net earned premiums from ceding a greater proportion of written premiums to third parties as well as an increase of commission expense for crop business in the reinsurance segment following the sale of AgriLogic.

Our general and administrative expenses decreased by \$6.8 million from \$118.5 million in 2018 to \$111.7 million in 2019. Our general and administrative expense ratio was 8.9% in 2019 compared to 9.4% in 2018 due to cost saving arising from our previous operating effectiveness and efficiency initiative. Our general and administrative expense ratio of 9.4% in 2018 decreased from 13.0% in 2017 due primarily to a reduction in administration costs following the sale of AgriLogic and lower provisions for performance-related remuneration.

Insurance

Our insurance segment consists of property and casualty insurance, marine, aviation and energy insurance, and financial and professional lines insurance. For a more detailed description of this segment, refer to Item 4, “Business Overview — Business Segments — Insurance” and Item 18, Note 3 of our consolidated financial statements, “Segment Reporting.”

Gross written premiums. The table below shows our gross written premiums for each line of business for the twelve months ended December 31, 2019, 2018 and 2017 and the percentage change in gross written premiums for each line:

<u>Lines of Business</u>	For the Twelve Months Ended December 31,					
	2019		2018		2017	
	(\$ in millions)	% change	(\$ in millions)	% change	(\$ in millions)	
Property and casualty insurance	\$ 861.2	(4.7)%	\$ 903.9	5.5 %	\$ 856.9	
Marine, aviation and energy insurance	301.7	(18.1)%	368.4	(4.4)%	385.3	
Financial and professional lines insurance	794.0	17.0 %	678.9	19.1 %	570.2	
Total	<u>\$ 1,956.9</u>	0.3 %	<u>\$ 1,951.2</u>	7.7 %	<u>\$ 1,812.4</u>	

The decrease in gross written premiums in 2019 compared to 2018 in property and casualty insurance was largely attributable to reductions in our U.K. regional and U.S. property business lines, partially offset by growth in our U.K. construction, liability, and U.S. excess casualty business. The decrease in gross written premiums in marine, aviation and energy insurance was largely attributable to reductions in aviation and Lloyd’s marine hull following the decision to exit these lines in the third quarter of 2018. These reductions were partially offset by growth in U.S. inland marine and U.S. ocean marine business lines. The increase in gross written premiums in financial and professional lines insurance was largely attributable to growth in U.S. professional lines, management liability, accident and health, and credit and political risk business lines.

The increase in gross written premiums in 2018 compared to 2017 in property and casualty insurance was largely attributable to growth in our U.K. regional and U.S. excess casualty business lines. The decrease in gross written premiums in marine, aviation and energy insurance was largely attributable to reductions in aviation and Lloyd’s marine hull following the decision to exit these lines in the third quarter of 2018. These reductions were partially offset by growth in U.S. inland marine, marine and energy liability and U.S. ocean marine business lines. The increase in gross written premiums in financial and professional lines insurance was largely attributable to growth in U.S. professional lines, management liability, accident and health, and credit and political risk business lines.

Ceded written premiums. Total ceded written premiums for 2019 was \$780.1 million, a decrease of \$272.0 million from 2018. Ceded written premiums decreased primarily due to reductions in the proportion of business ceded to our casualty, financial institutions and property quota share programs.

Ceded reinsurance for 2018 was \$1,052.1 million, an increase of \$202.2 million from 2017. Ceded written premiums increased primarily due to an increase in the proportion of business ceded to our casualty, financial institutions and property quota share programs.

Net premiums earned. Net premiums earned increased by \$79.8 million, or 8.3%, in 2019 compared to 2018 due to the impact from the reduction in the proportion of business ceded to our quota share treaties. Net premiums earned decreased by \$142.2 million, or 12.9%, in 2018 compared to 2017 due to the impact from the increase in the proportion of business ceded to our quota share treaties.

Losses and loss adjustment expenses. The loss ratio in 2019 was 73.4% compared to 67.4% in 2018. The increase in the loss ratio in 2019 was primarily due to a \$157.1 million decrease in reserve releases, from \$42.7 million releases in 2018 to \$114.4 million strengthening in 2019, and a \$5.0 million increase in large losses. These movements more than offset the impact from a \$79.8 million increase in net earned premiums and a \$34.4 million decrease in catastrophe losses. The loss ratio in 2018 of 67.4% decreased from 79.8% in 2017 due primarily to a \$56.2 million decrease in catastrophe losses, a \$47.6 million decrease in large losses and a \$19.1 million increase in prior year reserve releases which offset the impact from a decrease in net earned premiums.

In 2019, the insurance segment experienced \$18.1 million of catastrophe losses, net of reinsurance recoverables, due to \$2.1 million from Hurricane Dorian, and \$16.0 million from other weather-related events. Large losses experienced during 2019 included \$24.6 million of U.S. and other weather-related events.

In 2018, the insurance segment experienced \$52.5 million of catastrophe losses, net of reinsurance recoverables, due to \$4.7 million from U.K. winter storms, \$5.8 million from Hurricane Florence, \$14.5 million from wildfires in California, \$9.6 million from Hurricane Michael, \$1.3 million from an Alaskan Earthquake and \$16.6 million from other U.S. and Asian weather-related events. Large losses experienced during 2018 included \$6.6 million trade credit loss and \$13.0 million of fire-related losses.

In 2017, the insurance segment experienced \$108.7 million of catastrophe losses, consisting of due to \$22.4 million from Hurricane Harvey, \$20.6 million from Hurricane Irma, \$13.2 million from Hurricane Maria, \$10.2 million from wildfires in California and \$42.3 million associated with U.S. weather-related events. Large losses experienced during 2017 included \$38.7 million of fire-related losses, a \$12.6 million surety loss, an \$11.1 million loss related to cyber and terrorism and a \$4.8 million refinery explosion.

In 2019, there was reserve strengthening of \$114.4 million compared to \$42.7 million of reserve releases in 2018. The reserve strengthening was primarily from international marine and energy liability products, which were exited in February 2020, and unfavorable development on U.S. primary casualty lines. The reserve releases in 2018 were principally from our property and casualty and marine, aviation and energy lines. The reserve releases in 2017 were predominantly from our marine, aviation and energy business lines which included an additional \$15.4 million reinsurance recovery in respect of an offshore energy-related loss that occurred in Africa which offset adverse development in property and casualty insurance and financial and professional lines insurance. Prior year reserve releases are further discussed under “Reserves for Losses and Loss Adjustment Expenses” below.

Policy acquisition, general and administrative expenses. Amortization of deferred policy acquisition costs were \$147.8 million in 2019, equivalent to 14.2% of net premiums earned (2018 — \$110.7 million or 11.6% of net premiums earned; 2017 — \$165.0 million or 15.0% of net earned premium). The increase in the acquisition expense ratio in 2019 compared with 2018 was largely due to a change in the mix of business written in the insurance segment. The decrease in the acquisition expense ratio in 2018 compared with 2017 was due to an increase in over-rider commissions associated with an increase in ceded reinsurance.

Our general and administrative expenses decreased by \$9.4 million to \$229.8 million in 2019 from \$239.2 million in 2018 (2017 — \$253.9 million). Our general and administrative expense ratio was 22.1% in 2019 compared to 25.0% in 2018 due to cost saving arising from our previous operating effectiveness and efficiency initiative. The general and administrative expense ratio was 25.0% in 2018 compared to 23.1% in 2017 as although there was a reduction in direct costs including accruals for performance-related pay this was less significant than the reduction in net earned premiums due to the increase in ceded costs.

Recent Developments

Adverse Development Cover Reinsurance Agreement:

On March 2, 2020, the Company announced that certain subsidiaries of the Company have entered into an adverse development cover reinsurance agreement with a subsidiary of Enstar Group Limited (“Enstar”), pursuant to which Enstar's subsidiary will reinsure losses incurred on or prior to December 31, 2019. Enstar’s subsidiary will provide \$770.0 million of cover in excess of \$3.805 billion retention, and an additional \$250.0 million of cover in excess above \$4.815 billion. Completion of the transaction is subject to regulatory approvals and satisfaction of various other closing conditions. The transaction is expected to close in the first half of 2020.

COVID-19:

We continue to closely monitor developments related to the outbreak of COVID-19, also known as coronavirus, to assess any potential impact on our business. Like many property and casualty (re)insurers, we have possible exposure to the contingency market and cancellation losses stemming from the COVID-19 outbreak and could also face COVID-19 related claims from credit and surety lines and potential exposure from business interruption. Whether the virus could trigger coverage is dependent on specific policy language, terms and exclusions. There is a risk, however, that legislative, regulatory, judicial or social influences may extend coverage beyond our intended contractual obligations or result in an increase in the frequency or severity of claims beyond expected levels. The volatility in the financial markets resulting from the outbreak may also impact our investment portfolio. Our investment portfolio comprises primarily government and other fixed income securities and we are not significantly exposed to equity markets. However, our corporate bond portfolio could be subject to default risk in the event of extended disruption to trade, and our strategic asset allocation includes middle market loans, commercial and other mortgage loan arrangements which may be adversely affected by the outbreak. In addition, existing and potential future travel bans, preventative or government mandated closures of our offices or the offices of our outsource providers may affect our ability to conduct our business. A prolonged period of commercial disruption, reduced economic activity and other consequences of the outbreak could have a material impact on our results of operations, financial condition or liquidity. Because this is an evolving and highly uncertain situation it is not possible to provide an estimate of potential insurance, reinsurance or investment exposure or any other indirect effects the outbreak may have on our results of operations, financial condition or liquidity.

Recent Changes to Ratings:

On March 26, 2020, S&P downgraded the financial strength and issuer credit ratings of Aspen Bermuda and Aspen U.K. to “A-” (Strong) from “A” (Strong). The long term issuer credit rating of Aspen Holdings was downgraded to “BBB” from “BBB+”. The outlook assigned to all these ratings is stable.

Our U.S. Operating subsidiaries, AAIC and Aspen Specialty, are not currently rated by S&P and have a financial strength rating of “A” (Excellent) by A.M. Best with a negative outlook. On April 1, 2020 A.M. Best affirmed the financial strength rating of “A” (Excellent) for Aspen Bermuda, Aspen U.K. Aspen Specialty and AAIC but revised its outlook to negative from stable. Our Lloyd’s operations benefit from the Lloyd’s market financial strength rating of “A” (Excellent) with a stable outlook by A.M. Best and “A+” (Strong) with a stable outlook by S&P.

Although the Company is still assessing the impact of this recent downgrade by S&P, we do not believe that this change in rating will significantly impact where the Company conducts its business operations. However, the downgrade may impair our ability to sell insurance policies and could materially and adversely affect our competitive position in the insurance industry, future financial condition and operating results.

Critical Accounting Policies

Our consolidated financial statements contain certain amounts that are inherently subjective in nature and require management to make assumptions and best estimates to determine the reported values. We believe that the following critical accounting policies affect the more significant estimates used in the preparation of our consolidated financial statements. A statement of all the significant accounting policies we use to prepare our financial statements is included in the Notes to the consolidated financial statements. If factors such as those described in Item 3D, “Risk Factors” cause actual events to differ from the assumptions used in applying the accounting policies and calculating financial results, there could be a material adverse effect on our operating results, financial condition and liquidity.

Written Premiums

Written premiums comprise the estimated premiums on contracts of insurance and reinsurance entered into in the reporting period, except in the case of proportional reinsurance contracts, where written premiums relate only to our estimated proportional share of premiums due on contracts entered into by the ceding company prior to the end of the reporting period.

All premium estimates are reviewed regularly, comparing actual reported premiums to expected ultimate premiums along with a review of the collectability of premiums receivable. Based on management’s review, the appropriateness of the premium estimates is evaluated, and any adjustments to these estimates are recorded in the periods in which they become known. Adjustments to original premium estimates could be material and these adjustments may directly and significantly impact earnings in the period they are determined because the subject premium may be fully or substantially earned.

We refer to premiums receivable which are not fixed at the inception of the contract as adjustment premiums. The proportion of adjustment premiums included in the premium estimates varies between business lines with the largest adjustment premiums associated with property and casualty reinsurance business and the smallest with property and liability insurance lines.

Adjustment premiums are most significant in relation to reinsurance contracts. Different considerations apply to non-proportional and proportional treaties as follows:

Non-proportional treaties. A large number of the reinsurance contracts we write are written on a non-proportional or excess of loss treaty basis. As the ultimate level of business written by each cedant can only be estimated at the time the reinsurance is placed, the reinsurance contracts generally stipulate a minimum and deposit premium payable under the contract with an adjustable premium determined by variables such as the number of contracts covered by the reinsurance, the total premium received by the cedant and the nature of the exposures assumed. Minimum and deposit premiums generally cover the majority of premiums due under such treaty reinsurance contracts and the adjustable portion of the premium is usually a small portion of the total premium receivable. For excess of loss contracts, the minimum and deposit premium, as defined in the contract, is generally considered to be the best estimate of the contract’s written premium at inception. Accordingly, this is the amount we generally record as written premium in the period the underlying risks incept.

During the life of a contract, notifications from cedants and brokers may affect the estimate of ultimate premium and result in either increases or reductions in reported revenue. Changes in estimated adjustable premiums do not generally have a significant impact on short-term liquidity as the payment of adjustment premiums generally occurs after the expiration of a contract.

Many non-proportional treaties also include a provision for the payment to us by the cedant of reinstatement premiums based on loss experience under such contracts. Reinstatement premiums are the premiums charged for the restoration of the reinsurance limit of an excess of loss contract to its full amount after payment by the reinsurer of losses as a result of an occurrence. These

premiums relate to the future coverage obtained during the remainder of the initial policy term and are included in revenue in the same period as the corresponding losses.

Proportional treaties (“treaty pro rata”). Estimates of premiums assumed under treaty pro rata reinsurance contracts are recorded in the period in which the underlying risks are expected to incept and are based on information provided by brokers and ceding companies and estimates of the underlying economic conditions at the time the risk is underwritten. We estimate premiums receivable initially and update our premium estimates regularly throughout the contract term based on treaty statements received from the ceding company.

The reported gross written premiums for treaty pro rata business include estimates of premiums due to us but not yet reported by the cedant because of time delays between contracts being written by our cedants and their submission of treaty statements to us. This additional premium is normally described as pipeline premium. Treaty statements disclose information on the underlying contracts of insurance written by our cedants and are generally submitted on a monthly or quarterly basis, from 30 to 90 days in arrears. In order to report all risks incepting prior to a period end, we estimate the premiums written between the last submitted treaty statement and the period end. Treaty pro rata premiums are written predominantly in our other property, specialty and casualty reinsurance lines of business.

Property treaty pro rata contributed significantly to our reinsurance segment where we wrote \$251.4 million in gross written premium in 2019 (2018 — \$182.0 million), or 16.9% of the gross written premiums in our reinsurance segment, of which \$36.9 million was estimated (2018 — \$106.1 million) and \$214.5 million was reported by the cedants (2018 — \$75.9 million). Excluding the impact of costs, such as reinsurance premiums and operating expenses, we estimate that the impact of a \$1.0 million increase/decrease in our estimated gross written premiums in our property treaty pro rata business would increase/decrease net income before tax by approximately \$0.1 million for the year ended December 31, 2019 (2018 — \$0.1 million increase/decrease).

The most likely drivers of change in our premium estimates in decreasing order of magnitude are:

- changes in renewal rate or rate of new business acceptances by cedant insurance companies leading to lower or greater volumes of ceded premiums than our estimate, which could result from changes in the relevant primary market that could affect more than one of our cedants or could be a consequence of changes in marketing strategy or risk appetite by a particular cedant;
- changes in the rates being charged by cedants; and
- differences between the pattern of inception dates assumed in our estimate and the actual pattern of inception dates.

We anticipate that ultimate premiums might reasonably be expected to vary by up to 5% as a result of variations in one or more of the assumptions described above, although larger variations are possible. Based on gross written premiums of \$251.4 million (2018 — \$182.0 million) in our property reinsurance treaty pro rata account as at December 31, 2019, a variation of 5% could increase or reduce net income before tax by approximately \$0.1 million (2018 — \$0.7 million).

Earned premiums. Premiums are recognized as earned over the policy exposure periods. The premium related to the unexpired portion of each policy at the end of the reporting period is included in the balance sheet as unearned premiums.

Reserving Approach

We are required by U.S. GAAP to establish loss reserves for the estimated unpaid portion of the ultimate liability for losses and loss expenses (“ultimate losses”) under the terms of our policies and agreements with our insured and reinsured customers. Our loss reserves comprise the following components:

- the cost of claims reported to us but not yet paid known as case reserves (“case reserves”);
- Reserves to cover the anticipated cost of claims incurred but not reported (“IBNR”). Within this, we also include the potential development of reported claims; and
- the expenses associated with settling claims, including legal and other fees and the general expenses of administering the claims adjustment process, known as the loss adjustment expenses (“LAE”).

Prior to the selection of the reserves to be included in our financial statements, our actuarial team employs a number of techniques to establish a range of estimates from which they consider it reasonable for management to select a ‘best estimate’ (the “actuarial range”).

Case Reserves. For reported claims, reserves are established on a case-by-case basis within the parameters of coverage provided in the insurance policy or reinsurance agreement. The method of establishing case reserves for reported claims differs among our operations. With respect to our insurance operations, we are advised of potential insured losses and our claims handlers’ record

reserves for the estimated amount of the expected indemnity settlement, loss adjustment expenses and cost of defense where appropriate. The reserve estimate reflects the judgment of the claims personnel and is based on claim information obtained to date, general reserving practices, the experience and knowledge of the claims personnel regarding the nature of the specific claim and where appropriate and available, advice from legal counsel, loss adjusters and other claims experts.

With respect to our reinsurance claims operations, claims handlers set case reserves for reported claims generally based on the claims reports received from our ceding companies and take into consideration our cedants' own reserve recommendations and our prior loss experience with the cedant. Additional case reserves ("ACR"), in addition to the cedants' own recommended reserves, may be established by us to reflect our estimated ultimate cost of a loss. ACRs are generally the result of either a claims handler's own experience and knowledge of handling similar claims, general reserving practices or the result of reserve recommendations following an audit of cedants' reserves.

Case reserves are based on a subjective judgment of facts and circumstances and are established for the purposes of internal reserving only. Accordingly, they do not represent a commitment to any course of conduct or admission of liability on our behalf in relation to any specific claim.

IBNR Reserves. The need for IBNR reserves arises from time lags between when a loss occurs and when it is actually reported and settled. By definition, we do not have specific information on IBNR claims so they need to be estimated by actuarial methodologies. IBNR reserves are therefore generally calculated at an aggregate level and cannot generally be identified as reserves for a particular loss or contract. We calculate IBNR reserves by class of business within each line of business. Where appropriate, analyses may be conducted on sub-sets of a class of business. IBNR reserves are calculated by projecting our ultimate losses on each class of business and subtracting paid losses and case reserves. IBNR reserves also cover the anticipated cost of claims incurred but not reported, within this we also include any potential development of reported claims. Over recent years, we have begun to place greater reliance on our actual actuarial experience for our long-tail lines of business that we have written since our inception in 2002. We believe that our earliest accident years are now capable of providing us with meaningful actuarial indications. Estimates and judgments for new insurance and reinsurance lines of business are more difficult to make than those made for more mature lines of business because we have more limited historical information through December 31, 2019.

Sources of Information. Claims information received typically includes the loss date, details of the claim, the recommended reserve and reports from the loss adjusters dealing with the claim. In respect of pro rata treaties and any business written through managing general agents, we receive regular statements (bordereaux) which provide paid and outstanding claims information, often with large losses separately identified. Following widely reported loss events, such as catastrophes, we adopt a proactive approach to establish our likely exposure to claims by reviewing policy listings and contacting brokers and policyholders as appropriate.

Actuarial Methodologies. The main projection methodologies that are used by our actuaries are as follows:

- *Initial expected loss ratio ("IELR") method:* This method calculates an estimate of ultimate losses by applying an estimated loss ratio to an estimate of ultimate earned premium for each accident year. The estimated loss ratio may be based on pricing information and/or industry data and/or historical claims experience revalued to the year under review.
- *Bornhuetter-Ferguson ("BF") method:* The BF method uses as a starting point an assumed IELR and blends in the loss ratio, which is implied by the claims experience to date using benchmark loss development patterns on paid claims data ("Paid BF") or reported claims data ("Reported BF"). Although the method tends to provide less volatile indications at early stages of development and reflects changes in the external environment, it can be slow to react to emerging loss development and can, if the IELR proves to be inaccurate, produce loss estimates which take longer to converge with the final settlement value of loss.
- *Loss development ("Chain Ladder") method:* This method uses actual loss data and the historical development profiles on older accident years to project more recent, less developed years to their ultimate position.
- *Exposure-based method:* This method is typically used for specific large catastrophic events such as a major hurricane. All exposure is identified and we work with known market information and information from our cedants to determine a percentage of the exposure to be taken as the ultimate loss.

In addition to these methodologies, our actuaries may use other approaches depending upon the characteristics of the class of business and available data.

In general terms, the IELR method is most appropriate for classes of business and/or accident years where the actual paid or reported loss experience is not yet mature enough to modify our initial expectations of the ultimate loss ratios. Typical examples would be recent accident years for classes of business in casualty reinsurance. The BF method is generally appropriate where there are few reported claims and a relatively less stable pattern of reported losses. Typical examples would be our treaty risk excess class of business in our reinsurance segment and marine hull class of business in our insurance segment. The Chain Ladder method

is appropriate when there are relatively stable patterns of loss emergence and a relatively large number of reported claims. Typical examples are the U.K. commercial property and U.K. commercial liability classes of business in our international insurance business.

Reserving Procedures and Process. Our actuaries calculate the IELR, BF and Chain Ladder and, if appropriate, other methods for each class of business and each accident year. They then calculate a single point actuarial mean best estimate (“ultimate”) for each class of business and provide a stochastic distribution around the mean for each line of business. The actuarial methodologies involve significant subjective judgments reflecting many factors, including but not limited to, changes in legislative conditions, changes in judicial interpretation of legal liability policy coverages and inflation. Our actuaries collaborate with our underwriting, claims, legal and finance teams in identifying factors which are incorporated in their range of ultimates in which management’s best estimate is most likely to fall. The actuarial stochastic distribution is designed to provide management with a range from which it is reasonable to select a single management best estimate for inclusion in our financial statements.

There are no differences between our year-end and our quarterly internal reserving procedures and processes because our actuaries perform the basic projections and analyses described above for each class of business quarterly.

Selection of Reported Gross Reserves. Management, through its Reserve Committees, reviews the actuarial stochastic distribution and any other evidence before selecting its management best estimate of reserves for each line of business. Management selects the “management best estimate” by considering all the information provided to them and the risks and uncertainties associated with the actuarial mean best estimate. Management has to date selected its best estimate above that of the actuarial mean best estimate and within the range of the actuarial stochastic distribution. The management mean best estimate provides the basis for management’s recommendation to the Audit Committee and the Board regarding the reserve amounts and related disclosures to be recorded in our financial statements.

There are three Reserve Committees, one for each of the insurance and reinsurance segments and a “core” committee that makes final reserving recommendations. The “core” Reserve Committee currently consists of the Group Chief Risk Officer (the chair), the Group Chief Financial Officer, the Group Head of Capital Management, the Group Chief Accounting Officer, the President and Chief Underwriting Officer of Aspen Re, the President and Chief Underwriting Officer of Aspen Insurance and the Executive Vice President of Global Business Performance and Strategy of Aspen Insurance. Senior members of the insurance and reinsurance segment underwriting and claims staff comprise the remaining members of each of the insurance and reinsurance reserve committees, respectively.

Each class of business is reviewed in detail by management through its Reserve Committee at least once a year. The timing of such reviews varies throughout the year. Additionally, we review the emergence of actual losses relative to expectations every fiscal quarter for all classes of business. If warranted from this analysis, we may accelerate the timing of our detailed actuarial reviews.

Uncertainties. While the management selected reserves make a reasonable provision for unpaid loss and loss adjustment expense obligations, we note that the process of estimating required reserves, by its very nature, involves uncertainty and therefore the ultimate claims may fall outside the actuarial range. The level of uncertainty can be influenced by such factors as the existence of coverage with long duration reporting patterns and changes in claims handling practices, as well as the other factors described above.

Given many of the coverages underwritten involve claims that may not be ultimately settled for many years after they are incurred, subjective judgments as to the ultimate exposure to losses are an integral and necessary component of the loss reserving process. We review our reserves regularly, using a variety of statistical and actuarial techniques to analyze current claims costs, frequency and severity data, and prevailing economic, social and legal factors. Reserves established in prior periods are adjusted as claims experience develops and new information becomes available.

Estimates of IBNR are generally subject to a greater degree of uncertainty than estimates of the cost of settling claims already notified to us, where more information about the claim event is generally available. IBNR claims often may not be apparent to the insured until many years after the event giving rise to the claims has happened. Classes of business where the IBNR proportion of the total reserve is high, such as casualty insurance, will typically display greater variations between initial estimates and final outcomes because of the greater degree of difficulty of estimating these reserves.

Classes of business where claims are typically reported relatively quickly after the claim event tend to display lower levels of volatility between initial estimates and final outcomes. Reinsurance claims are subject to a longer time lag both in their reporting and in their time to final settlement. The time lag is a factor which is included in the projections to ultimate claims within the actuarial analyses and helps to explain why in general a higher proportion of the initial reinsurance reserves are represented by IBNR than for insurance reserves for business in the same class. Delays in receiving information from cedants are an expected part of normal business operations and are included within the statistical estimate of IBNR to the extent that current levels of

backlog are consistent with historical data. Currently, there are no processing backlogs which would materially affect our financial statements.

Allowance is made, however, for changes or uncertainties which may create distortions in the underlying statistics or which might cause the cost of unsettled claims to increase or reduce when compared with the cost of previously settled claims, including:

- changes in our processes which might accelerate or slow down the development and/or recording of paid or incurred claims;
- changes in the legal environment (including challenges to tort reform);
- the effects of inflation;
- changes in the mix of business;
- the impact of large losses; and
- changes in our cedants' reserving methodologies.

These factors are incorporated in the recommended reserve range from which management selects its best point estimate. We take all reasonable steps to ensure that we utilize all appropriate information and actuarial techniques in establishing our IBNR reserves. However, given the uncertainty in establishing claims liabilities, it is likely that the final outcome will prove to be different from the original provision established at the balance sheet date. Changes to our previous estimates of prior period loss reserves impact the reported calendar year underwriting results by worsening our reported results if the prior year reserves prove to be deficient or improving our reported results if the prior year reserves prove to be redundant. As at December 31, 2019, a 5% change in the gross reserve for IBNR losses would have equated to a change of approximately \$184.1 million in loss reserves which would represent 84.1% of loss before income tax for the twelve months ended December 31, 2019. As at December 31, 2018, a 5% change in the gross reserve for IBNR losses would have equated to a change of approximately \$196.9 million in loss reserves which would represent 126.2% of income before income tax for the twelve months ended December 31, 2018. A 5% change in our net loss reserves equates to \$231.6 million and represents 8.5% of shareholders' equity as at December 31, 2019.

There are specific areas of our selected reserves which have additional uncertainty associated with them. Refer to Item 3D, "Risk Factors—Insurance Risks—Our financial condition and operating results may be adversely affected if actual claims exceed our loss reserves" for a discussion of the specific areas of our selected reserves which have additional uncertainty. In each case, management believes they have selected an appropriate best estimate based on current information and current analyses.

Loss Reserving Sensitivity Analysis. The most significant key assumptions identified in the reserving process are that (i) the historic loss development and trend experience is assumed to be indicative of future loss development and trends, (ii) the information developed from internal and independent external sources can be used to develop meaningful estimates of the initial expected ultimate loss ratios, and (iii) no significant losses or types of losses will emerge that are not represented in either the initial expected loss ratios or the historical development patterns.

We believe that there is potentially significant risk in estimating loss reserves for long-tail lines of business and for immature accident years that may not be adequately captured through traditional actuarial projection methodologies. As discussed above, these methodologies usually rely heavily on projections of prior year trends into the future. In selecting our best estimate of future liabilities, we consider both the results of actuarial point estimates of loss reserves in addition to the stochastic distribution of reserves. In determining the appropriate best estimate, we review (i) the position of overall reserves within the actuarial distribution, (ii) the result of bottom up analysis by accident year reflecting the impact of parameter uncertainty in actuarial calculations, and (iii) specific qualitative information on events that may have an effect on future claims but which may not have been adequately reflected in actuarial best estimates, such as the potential for outstanding litigation or claims practices of cedants to have an adverse impact.

Effect if Actual Results Differ From Assumptions. Given the risks and uncertainties associated with the process for estimating reserves for losses and loss expenses, management has performed an evaluation of the potential variability in loss reserves and the impact this variability may have on reported results, financial condition and liquidity. 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 year reserves in the last several years. However, there is no assurance that this will occur in future periods.

Management's best estimate of the net reserve for losses and loss expenses as at December 31, 2019 was \$4,632.0 million. The following tables show the effect on estimated net reserves for losses and loss expenses as at December 31, 2019 of a change in two of the most critical assumptions in establishing reserves: (i) loss emergence patterns, accelerated or decelerated by three and six months; and (ii) expected loss ratios varied by plus or minus five and ten percent. Management believes that these scenarios

present a reasonable range of variability around the booked reserves using standard actuarial techniques. Loss reserves may vary beyond these scenarios in periods of heightened or reduced claim activity. The reserves resulting from the changes in the assumptions are not additive and should be considered separately. The following tables vary the assumptions employed therein independently. In addition, the tables below do not adjust any parameters other than the ones described above.

Net reserve for losses and loss expenses as at December 31, 2019 — Sensitivity to loss emergence patterns

Change in assumption	Reserve for losses and loss expenses
	(\$ in millions)
Six month acceleration	\$ 4,362.8
Three month acceleration	\$ 4,496.1
No change (selected)	4,632.0
Three month deceleration	\$ 4,771.9
Six month deceleration	\$ 4,906.0

Net reserve for losses and loss expenses as at December 31, 2019 — Sensitivity to expected loss ratios

Change in assumption	Reserve for losses and loss expenses
	(\$ in millions)
10% favorable	\$ 4,444.9
5% favorable	\$ 4,532.6
No change (selected)	4,632.0
5% unfavorable	\$ 4,746.6
10% unfavorable	\$ 4,902.2

The most significant variance in the above scenarios (i.e., a six month deceleration of loss emergence patterns) would have the effect of increasing losses and loss expenses by \$274.0 million.

Management believes that the reserve for losses and loss expenses are sufficient to cover expected claims incurred before the reporting date on the basis of the methodologies and judgments used to support its estimates. However, there can be no assurance that actual payments will not vary significantly from total reserves. The reserve for losses and loss expenses and the methodology of estimating such reserve are regularly reviewed and updated as new information becomes known. Any resulting adjustments are reflected in income in the period in which they become known.

Balance Sheet***Total cash and investments***

As at December 31, 2019 and December 31, 2018, total cash and investments, including accrued interest receivable were \$7.8 billion and \$7.9 billion, respectively. Total cash and investments remain broadly unchanged year on year, mainly as a result of reduced payments associated with the reduction in ceded written premiums offset by increased claims payments during 2019 associated with catastrophe losses in 2018 and large losses in 2019. Our investment strategy is focused on delivering stable investment income and total return through all market cycles while maintaining appropriate portfolio liquidity and credit quality to meet the requirements of our customers, rating agencies and regulators.

As of December 31, 2019, our investments consisted of a diversified portfolio of fixed income securities including U.S. Dollar BBB Emerging Market Debt, investment grade CLOs, privately-held investments and money market funds. Our overall portfolio strategy remains focused on high quality fixed income investments. In the first quarter of 2018, we took advantage of rising equity markets and sold our remaining equity portfolio. Proceeds from the sales were reinvested into a core fixed income strategy. As at December 31, 2019, the Company had a 3.2% position in U.S. Dollar BBB Emerging Market Debt, a 1.4% position in a real estate fund and a 3.6% position in MML and CML, representing in total 8.2% of our total cash and investments, excluding catastrophe bonds and funds held by variable interest entities (the “Managed Portfolio”). As at December 31, 2018, the Company had a 4.5% position in U.S. Dollar BBB Emerging Market Debt and a 1.3% position in a real estate fund representing in total 5.8% of our Managed Portfolio.

Book yield for the year ended December 31, 2019 on the fixed income portfolio was 2.74%, an increase of 5 basis points from 2.69% at December 31, 2018. Our fixed income portfolio duration as at December 31, 2019 was 3.2 years compared to 3.5 years as at December 31, 2018. As at December 31, 2019, the average credit quality of our fixed income portfolio was “AA-,” with 87.9% of the portfolio being rated “A” or higher. The average rating of our mortgage-backed securities was AA+. As at December 31, 2018, the average credit quality of our fixed income portfolio was “AA-,” with 88.3% of the portfolio being rated “A” or higher. Where the credit ratings were split between the two main rating agencies, S&P and Moody’s, the lowest rating was used.

Unrealized gains in the available for sale investment portfolio, net of taxes, were \$84.5 million as at December 31, 2019, an increase of \$151.3 million from the net \$66.8 million unrealized loss as at December 31, 2018.

As at December 31, 2019, we had investments in four entities classified as other investments, equity method: a micro-insurance incubator (“MVI”), Bene Assicurazioni (“Bene”), Digital Risk Resources, LLC (“Digital Re”) and Crop Re Services LLC (“Crop Re”). For further information regarding these investments, refer to Item 18, Note 4 of our consolidated financial statements, “Investments.”

On December 20, 2017, the Company committed to, and during 2018 invested \$100.0 million as a limited partner to a real estate fund, classified as other investments. The investment objective of the fund is to achieve attractive risk-adjusted returns through the acquisition of income producing, high quality assets in gateway cities located in the U.S. and Canada in the office, retail, industrial and multifamily sectors of the real estate market. On May 1, 2018, the Company received a demand for an initial capital call of \$86.2 million and paid the capital call on May 10, 2018. On September 19, 2018, the Company received a demand for the final capital call of \$13.8 million and paid the capital on September 28, 2018.

On December 23, 2019, the Company committed \$5.0 million as an equity investment in the holding company of a multi-line reinsurer. The strategy for the multi-line reinsurer is to combine a diversified reinsurance business, focused primarily on long-tailed lines of property and casualty business and, potentially to a lesser extent, life business, with a diversified investment strategy. On December 27, 2019, the Company received a demand for an initial capital call of \$0.2 million and paid the capital on January 15, 2020.

The composition of our cash and investments as at December 31, 2019 and 2018 is summarized below:

	As at December 31, 2019		As at December 31, 2018	
	Estimated Fair Value	Percentage of Total Cash and Investments	Estimated Fair Value	Percentage of Total Cash and Investments
(\$ in millions except for percentages)				
Fixed Income Securities — Available for Sale				
U.S. government	\$ 1,413.1	18.1%	\$ 1,404.2	17.9%
U.S. agency	39.6	0.5	47.4	0.6
Municipal	50.7	0.6	47.2	0.6
Corporate	1,959.8	25.2	2,206.2	28.3
Non-U.S. government-backed corporate	86.5	1.1	93.2	1.2
Foreign government	328.8	4.2	402.6	5.1
Asset-backed	0.2	—	17.3	0.2
Non-agency commercial mortgage-backed	6.5	0.1	—	—
Agency mortgage-backed	1,073.0	13.9	1,012.6	12.9
Total Fixed Income Securities — Available for Sale	\$ 4,958.2	63.7%	\$ 5,230.7	66.8%
Fixed Income Securities — Trading				
U.S. government	185.0	2.4%	147.7	1.9%
Municipal	3.2	—	2.7	—
Corporate	243.2	3.1	720.2	9.2
Non-U.S. government-backed corporate	—	—	—	—
Foreign government	151.2	1.9	265.4	3.4
Asset-backed	492.4	6.3	2.4	—
Agency mortgage-backed securities	53.8	0.7	49.4	0.6
Total Fixed Income Securities — Trading	\$ 1,128.8	14.4%	\$ 1,187.8	15.1%
Total other investments, equity method	67.9	0.9	67.1	0.9
Total other investments ⁽¹⁾	111.4	1.4	102.5	1.3
Total catastrophe bonds — trading	28.6	0.4	36.2	0.5
Privately-held investments — Trading				
Commercial mortgage loans	156.6	2.0	—	—
Middle market loans	111.7	1.4	—	—
Asset-backed securities	8.7	0.1	—	—
Equity securities	2.7	—	—	—
Total privately-held investments — Trading	\$ 279.7	3.5%	\$ —	—%
Total short-term investments — available for sale	117.6	1.5	105.6	1.3
Total short-term investments — trading	79.2	1.0	9.5	0.1
Total cash and cash equivalents	1,030.5	13.2	1,083.7	14.0
Total Cash and Investments	\$ 7,801.9	100.0%	\$ 7,823.1	100.0%
Net receivable/(payable) for securities sold/(purchased)	\$ 2.9		\$ 2.5	
Accrued interest receivable	39.6		42.7	
Total Investable Assets	\$ 7,844.4		\$ 7,868.3	

⁽¹⁾ Total other investments represents our investment in a real estate fund. For further information refer to Item 18, Note 4 our consolidated financial statements, “Investments.”

Our mortgage-backed portfolio is supported by loans diversified across a number of geographic and economic sectors. The following table summarizes the fair value of our mortgage-backed securities by rating and class as at December 31, 2019:

	AAA	AA and Below	Total
	(\$ in millions)		
Agency	\$ —	\$ 1,126.8	\$ 1,126.8
Non-agency commercial	—	6.5	6.5
Total mortgage-backed securities	\$ —	\$ 1,133.3	\$ 1,133.3

The average rating of our mortgage-backed portfolio was AA+.

Sub-prime securities. We define sub-prime related investments as those supported by, or containing, sub-prime collateral based on creditworthiness. We do not invest directly in sub-prime related securities.

Equity securities. Equity securities previously consisted of U.S. and foreign equity securities and after rebalancing equity investments across subsidiary company balance sheets in 2015 were all classified as trading. In the first quarter of 2018, we sold the remainder of our equity portfolio.

As at December 31, 2019, the Company had invested \$2.7 million in equity securities in privately-held investments, as part of the Company's strategic asset allocation. We had no other investments in equity securities as at December 31, 2019.

The total investment return from trading equity portfolios for the twelve months ended December 31, 2019, 2018 and 2017 were as follows:

	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Trading Equity Portfolio			
Dividend income	\$ —	\$ 2.1	\$ 13.6
Realized investment gains	—	69.5	47.0
Change in net unrealized gains, gross of tax	—	(75.7)	21.2
Realized foreign exchange gains/(losses)	—	4.9	(1.7)
Net unrealized foreign exchange (losses)/gains	—	(0.6)	24.8
Total investment return from the trading equity portfolio	\$ —	\$ 0.2	\$ 104.9

Valuation of Investments

Fair Value Measurements. Our estimates of fair value for financial assets and liabilities are based on the framework established in the fair value accounting guidance included in ASC Topic 820, *Fair Value Measurements and Disclosures*. For a description of the framework, refer to Item 18, Note 6 of our consolidated financial statements, "Fair Value Measurements."

Valuation of Investments, Equity Method. The value of our investments in MVI, Chaspark, Bene, Digital Re and Crop Re are based on our share of the capital position of the entities which includes income and expenses reported in quarterly management accounts. Each of MVI, Chaspark, Bene, Digital Re and Crop Re is subject to annual audit evaluating the financial statements of the entities. We periodically review the management accounts of MVI, Chaspark, Bene, Digital Re and Crop Re and evaluate the reasonableness of the valuation of our investment.

Valuation of Other Investments. The Company's other investments represent our investment in a real estate fund. Adjustments to the fair value are made based on the net asset value of the investment. The net valuation criteria established by the manager of such investments are established in accordance with the governing documents and the asset manager's valuation guidelines, which consider a two part approach: the discounted cash flows approach and the performance multiple approach, which uses a multiple/capitalization rate derived from market metrics from comparable companies or assets to produce operating performance metrics. Alternative valuation methodologies may be employed for investments with unusual characteristics.

Valuation of Privately-held Investments. Privately-held investments are initially valued at cost or transaction value which approximates fair value. In subsequent measurement periods, the fair values of these securities are determined using internally developed discounted cash flow models. These models include inputs that are specific to each investment. The inputs used in the fair value measurements include dividend or interest rates and appropriate discount rates. The selection of an appropriate discount rate is judgmental and is the most significant unobservable input used in the valuation of these securities. A significant increase

(decrease) in this input in isolation could result in significantly lower (higher) fair value measurement for other privately-held investments. In order to assess the reasonableness of the inputs the Company uses in the discounted cash flow models, the Company maintains an understanding of current market conditions, issuer specific information that may impact future cash flows as well as collaboration with independent vendors for most securities to assess the reasonableness of the discount rate being used.

Other-than-temporary Impairment of Investments. We review all our available for sale fixed income on an individual security basis for potential OTTI each quarter based on criteria including issuer-specific circumstances, credit ratings actions and general macro-economic conditions. There was a \$Nil OTTI charge for the twelve months ended December 31, 2019 (2018 —\$Nil).

For further discussion, refer to Item 18, Note 2(c) of our consolidated financial statements, “Basis of Preparation and Significant Accounting Policies — Accounting for Investments, Cash and Cash Equivalents.”

Reserves for Losses and Loss Adjustment Expenses

Provision is made at the end of each year for the estimated ultimate cost of claims incurred but not settled at the balance sheet date, including the cost of IBNR claims and development of existing reported claims. The estimated cost of claims includes expenses to be incurred in settling claims and a deduction for the expected value of salvage and other recoveries. Estimated amounts recoverable from reinsurers on unpaid losses and loss adjustment expenses are calculated to arrive at a net claims reserve.

Reserves by segment. As at December 31, 2019, we had total net loss and loss adjustment expense reserves of \$4,632.0 million (December 31, 2018 — \$4,996.6 million). This amount represented our best estimate of the ultimate liability for payment of losses and loss adjustment expenses. Of the total gross reserves for unpaid losses of \$6,951.8 million at the balance sheet date of December 31, 2019, a total of \$3,682.8 million, or 53.0%, represented IBNR claims (December 31, 2018 — \$3,937.9 million and 55.7%, respectively). The following tables analyze gross and net loss and loss adjustment expense reserves by business segment as at December 31, 2019 and 2018, respectively:

<u>Business Segment</u>	As at December 31, 2019		
	Gross	Reinsurance Recoverable	Net
	(\$ in millions)		
Reinsurance	\$ 3,152.9	\$ (547.0)	\$ 2,605.9
Insurance	3,798.9	(1,772.8)	2,026.1
Total losses and loss expense reserves	<u>\$ 6,951.8</u>	<u>\$ (2,319.8)</u>	<u>\$ 4,632.0</u>

<u>Business Segment</u>	At December 31, 2018		
	Gross	Reinsurance Recoverable	Net
	(\$ in millions)		
Reinsurance	\$ 3,309.8	\$ (466.2)	\$ 2,843.6
Insurance	3,764.4	(1,611.4)	2,153.0
Total losses and loss expense reserves	<u>\$ 7,074.2</u>	<u>\$ (2,077.6)</u>	<u>\$ 4,996.6</u>

The increase in reinsurance recoverables in 2019 was due predominantly to additional reinsurance having been previously purchased to reduce earnings volatility. The recoveries in the reinsurance segment are generally associated with catastrophes and levels of recoveries fluctuate based on the type of catastrophe.

The gross reserves may be further analyzed between outstanding claims and IBNR as at December 31, 2019 and 2018 as follows:

	As at December 31, 2019			
	Gross Outstandings	Gross IBNR	Gross Reserve	% IBNR
	(\$ in millions, except for percentages)			
Reinsurance	\$ 1,535.8	\$ 1,617.1	\$ 3,152.9	51.3%
Insurance	1,733.2	2,065.7	3,798.9	54.4%
Total losses and loss expense reserves	<u>\$ 3,269.0</u>	<u>\$ 3,682.8</u>	<u>\$ 6,951.8</u>	<u>53.0%</u>

	As at December 31, 2018			
	Gross Outstandings	Gross IBNR	Gross Reserve	% IBNR
	(\$ in millions, except for percentages)			
Reinsurance	\$ 1,349.9	\$ 1,959.9	\$ 3,309.8	59.2%
Insurance	1,786.4	1,978.0	3,764.4	52.5%
Total losses and loss expense reserves	\$ 3,136.3	\$ 3,937.9	\$ 7,074.2	55.7%

Prior year loss reserves. For the twelve months ended December 31, 2019, there was an overall increase in our estimate of ultimate net claims to be paid in respect of prior accident years. An analysis of this reduction by business segment is as follows for each of the twelve months ended December 31, 2019, 2018 and 2017:

<u>Business Segment</u>	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Reinsurance	\$ 54.9	\$ 68.4	\$ 81.8
Insurance	(114.4)	42.7	23.6
Total losses and loss expense reserves reductions	\$ (59.5)	\$ 111.1	\$ 105.4

For the twelve months ended December 31, 2019. The analysis of the development by each segment is as follows:

Reinsurance. Net reserve releases of \$54.9 million in 2019 were mainly as a result of favorable development in property catastrophe reinsurance, other property reinsurance and specialty reinsurance lines. The property catastrophe and other property reinsurance business lines reported favorable development due to reductions in estimated losses from 2018 catastrophes. The specialty reinsurance business lines reported net reserve releases due primarily to favorable development on marine reinsurance lines. The casualty reinsurance business lines reported net reserve strengthening due primarily to unfavorable development on U.S. casualty lines.

Insurance. Net reserve strengthening of \$114.4 million in 2019 were mainly as a result of unfavorable development in property and casualty and marine, aviation and energy lines partially offset by modest reserves releases for financial and professional lines. The property and casualty business lines reported unfavorable development due primarily to unfavorable development on U.S. primary casualty lines. The marine, aviation and energy business lines reported net reserve strengthening due primarily to unfavorable development on international marine and energy liability products, which were exited in February 2020.

For the twelve months ended December 31, 2018. The analysis of the development by each segment is as follows:

Reinsurance. Net reserve releases of \$68.4 million in 2018 were mainly as a result of favorable development in property catastrophe reinsurance, other property reinsurance and specialty reinsurance lines. The property catastrophe and other property reinsurance business lines reported favorable development due to reductions in estimated losses from 2017 catastrophes. The specialty reinsurance business lines reported net reserve releases due primarily to favorable development on marine reinsurance lines.

Insurance. Net reserve releases of \$42.7 million in 2018 were mainly as a result of favorable development in property and casualty and marine, aviation and energy lines with only modest reserves releases for financial and professional lines. The property and casualty business lines reported favorable development due to reductions in estimated losses from 2017 catastrophes. The marine, aviation and energy business lines reported net reserve releases due primarily to favorable development on U.S. energy lines.

We did not make any significant changes in methodologies used in our reserving process.

B. Liquidity and Capital Resources

Liquidity

Liquidity is a measure of a company's ability to generate cash flows sufficient to meet short-term and long-term cash requirements of its business operations. Management monitors the liquidity of Aspen Holdings and of each of its Operating Subsidiaries and arranges credit facilities to enhance short-term liquidity resources on a stand-by basis. As a holding company, Aspen Holdings

relies on dividends and other distributions from its Operating Subsidiaries to provide cash flow to meet ongoing cash requirements, including any future debt service payments and other expenses, and to pay dividends, if any, to our preference and ordinary shareholders.

During the year ended December 31, 2019, Aspen Holdings received dividends of \$270.0 million (2018 — \$338.2 million) from Aspen Bermuda and \$Nil (2018 — \$2.1 million) from Aspen Managing Agency Limited.

As at December 31, 2019, Aspen Holdings held \$117.6 million (December 31, 2018 — \$59.3 million) of cash, cash equivalents and investments. Management considers the current cash and cash equivalents, together with dividends declared or expected to be declared by subsidiary companies and our credit facilities, sufficient to appropriately satisfy the liquidity requirements of Aspen Holdings. Aspen Holdings' liquidity depends on dividends, capital distributions and interest payments from our Operating Subsidiaries. Aspen Holdings also has recourse to the credit facility described under "Letter of Credit Facilities" below.

The ability of our Operating Subsidiaries to pay us dividends or other distributions is subject to the laws and regulations applicable to each jurisdiction, as well as the Operating Subsidiaries' need to maintain capital requirements adequate to maintain their insurance and reinsurance operations and their financial strength ratings issued by independent rating agencies. In line with common market practice for regulated institutions, the PRA previously requested that it be afforded with the opportunity to provide a "non-objection" prior to all future dividend payments made by Aspen U.K. In 2017, the PRA stated that they no longer routinely require Aspen U.K. to apply for a non-objection to dividends provided that such dividend payment and Aspen U.K.'s subsequent capital position are within Aspen U.K.'s board-approved solvency capital risk appetite. We do not expect to suffer tax on foreign earnings since our significant source of earnings outside of Bermuda is the U.K. and no taxes are imposed on profits repatriated from the U.K. to Bermuda. For a further discussion of the various restrictions on our ability and our Operating Subsidiaries' ability to pay dividends, refer to Item 4, "Business Overview — Regulatory Matters." For a discussion of the volatility and liquidity of our other investments, refer to Item 3D, "Risk Factors — Market and Liquidity Risks," and for a discussion of the impact of insurance losses on our liquidity, refer to Item 3D, "Risk Factors — Insurance Risks" and Item 18, Note 15 of our consolidated financial statements, "Statutory Requirements and Dividend Restrictions."

Operating Subsidiaries. As at December 31, 2019, the Operating Subsidiaries held \$1,062.7 million (December 31, 2018 — \$930.4 million) in cash and short-term investments that are readily realizable securities. Management monitors the value, currency and duration of cash and investments held by the Operating Subsidiaries to ensure they are able to meet their insurance and other liabilities as they become due and was satisfied that there was a comfortable margin of liquidity as at December 31, 2019 and for the foreseeable future.

On an ongoing basis, our Operating Subsidiaries' sources of funds primarily consist of premiums written, investment income and proceeds from sales and redemptions of investments. Cash is used primarily to pay reinsurance premiums, losses and loss adjustment expenses, brokerage commissions, general and administrative expenses, taxes, interest and dividends and to purchase new investments. The potential for individual large claims and for accumulations of claims from single events means that substantial and unpredictable payments may need to be made within relatively short periods of time.

For all material currencies in which our underwriting activities are written we ensure that sufficient cash and short-term investments are held in such currencies to enable us to meet potential claims without liquidating long-term investments and adversely affecting our investment return. This follows the matching principle which matches our assets and liabilities in currency to mitigate foreign currency risk whenever possible.

We manage these risks by making regular forecasts of the timing and amount of expected cash outflows and ensuring that we maintain sufficient balances in cash and short-term investments to meet these estimates. Notwithstanding this policy, if these cash flow forecasts are incorrect, we could be forced to liquidate investments prior to maturity, potentially at a significant loss. Historically, we have not had to liquidate investments at a significant loss to maintain sufficient levels of liquidity.

Where we incur losses in currencies which are not normally held we will convert funds into the appropriate currencies to mitigate our currency risk and also make funds available to settle claims in local currencies as and when they become due. Recent examples of this have been where we have converted funds to Mexican Peso, Chilean Peso and Chinese Yuan to cover earthquake and other losses in these countries. For local regulatory reasons, we hold assets in trusts which limits our liquidity to some degree. The process of matching assets with liabilities in currency means, however, that at any one time we will hold cash and short-term assets in all major currencies which are available to settle claims.

The liquidity of our Operating Subsidiaries is also affected by the terms of our contractual obligations to policyholders and by undertakings to certain regulatory authorities to facilitate the issue of letters of credit or maintain certain balances in trust funds for the benefit of policyholders, or restricted for other reasons. The following table shows the forms of collateral or other security provided in respect of these obligations and undertakings as at December 31, 2019 and December 31, 2018:

	As at December 31, 2019	At December 31, 2018
	(\$ in millions, except percentages)	
Regulatory trusts and deposits:		
Affiliated transactions	\$ 754.9	\$ 1,033.9
Third party	2,766.6	2,511.7
Letters of credit / guarantees	635.4	771.1
Other investments — real estate fund	\$ 111.4	\$ 102.5
Total restricted assets	\$ 4,268.3	\$ 4,419.2
Total as percent of investable assets	54.4%	56.4%

Refer to Item 18, Note 20(a), “Commitments and Contingencies — Restricted Assets” of our consolidated financial statements for further detail on our trust fund balances which we are required to maintain in accordance with contractual obligations to policyholders and in compliance with regulatory requirements.

Consolidated cash flows for the twelve months ended December 31, 2019. Total net cash flow used in operations for the twelve months ended December 31, 2019 was \$337.8 million, a \$33.3 million increase in cash used from the equivalent period in 2018. The increase in cash used in operations for the twelve months ended December 31, 2019 is mainly attributable an increase in paid claims. For the twelve months ended December 31, 2019, the cash flow used in operations required funds to be realized from the investment portfolio. We paid net claims of \$2,122.6 million in 2019 and generated cash inflows of \$218.3 million from investing and net purchases and sales of equipment during the period.

We issued preference shares net of issuance costs of \$241.6 million and redeemed the remaining \$125.0 million of our 6.00% Senior Notes due 2020. We also paid preference share dividends of \$35.9 million. At December 31, 2019, we had a balance of cash and cash equivalents of \$1,030.5 million.

Consolidated cash flows for the twelve months ended December 31, 2018. Total net cash flow used in operations for the twelve months ended December 31, 2018 was \$304.5 million, an increase of \$193.0 million from the equivalent period in 2017. The increase in cash used in operations for the twelve months ended December 31, 2018 was mainly attributable to ceded reinsurance costs, an increase in paid claims and payments of accrued expenses. For the twelve months ended December 31, 2018, the cash flows used in operations required funds to be realized from the investment portfolio. We paid net claims of \$1,726.7 million in 2018, and generated cash inflows of \$657.3 million from investing and net purchases and sales of equipment during the period. We paid ordinary and preference share dividends of \$73.4 million, and \$125.0 million was used was used to redeem a portion of our 6.00% Senior Notes due 2020. At December 31, 2018, we had a balance of cash and cash equivalents of \$1,083.7 million.

Capital Resources

We maintain our capital at an appropriate level as determined by our internal risk appetite and the financial strength required by our customers, regulators and rating agencies. We monitor and review our group and operating entities’ capital and liquidity positions on an ongoing basis. The following table shows our capital structures as at December 31, 2019 compared to December 31, 2018:

	As at December 31, 2019	At December 31, 2018
	(\$ in millions)	
Share capital, additional paid-in capital, retained income and accumulated other comprehensive income attributable to ordinary shareholders ⁽¹⁾	\$ 1,972.0	\$ 2,128.5
Preference shares (liquidation preferences net of issue costs)	753.5	511.9
Long-term debt	299.8	424.7
Loan Notes issued by Silverton ⁽²⁾	—	4.6
Total capital	\$ 3,025.3	\$ 3,069.7

⁽¹⁾ Retained earnings have been restated by \$15.6 million from January 1, 2017 to account for additional ceded premiums on excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior.

⁽²⁾ We did not consider the Loan Notes issued by Silverton to be part of our permanent capital as the noteholders had no recourse to the other assets of the Company.

As at December 31, 2019, total shareholders' equity was \$2,725.5 million compared to \$2,640.4 million as at December 31, 2018. Our total shareholders' equity as at December 31, 2019 includes three classes of preference shares with a total value as measured by their respective liquidation preferences of \$753.5 million net of share issuance costs (December 31, 2018 — \$511.9 million, two classes of preference shares).

Our preference shares are classified in our balance sheet as equity but may receive a different treatment in some cases under the capital adequacy assessments made by certain rating agencies. Such securities are often referred to as "hybrids" as they have certain attributes of both debt and equity. Management monitors the ratio of the total of debt and hybrids to total capital which was 34.6% as of December 31, 2019 (December 31, 2018 — 30.4%). Total capital is defined as being shareholders' equity plus outstanding debt and excluding loan notes issued by variable interest entities.

Our 2023 Senior Notes are the only material debt issued by Aspen Holdings currently outstanding. As at December 31, 2019 and 2018, the value of debt less amortization expenses was \$299.8 million and \$424.7 million, respectively.

As at December 31, 2019 we had no loan notes outstanding with Silverton as a final payment was made to noteholders after the commutation of the reinsurance agreement on July 1, 2019 (2018 — \$4.6 million). For further information on Silverton, refer to Item 18, Note 5 of our consolidated financial statements, "Variable Interest Entities."

Management monitors the ratio of debt to total capital which was 9.8% as at December 31, 2019 (December 31, 2018 — 13.8%).

The principal capital management transactions during 2019 were as follows:

- On August 13, 2019, we issued 10,000,000 Depositary Shares, each of which represents 1/1000th interest in a share of our newly designated 5.625% Non-Cumulative Preference Shares (the "Depositary Shares"). The Depositary Shares have a liquidation preference of \$25 per Depositary Share (or \$250 million in aggregate liquidation preference).
- On September 30, 2019, we redeemed the remaining \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment of \$5.5 million.

The principal capital management transactions during 2018 were as follows:

- On June 18, 2018, we redeemed \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment, of \$8.6 million.
- Under the terms of the Merger Agreement we were restricted from declaring or paying any dividends on our ordinary shares other than the quarterly dividends on our ordinary shares that were previously declared and publicly announced prior to the date of the Merger Agreement.

On April 16, 2018, Kendall Re Ltd. ("Kendall Re"), a Bermuda-exempted company was licensed and registered as a special purpose insurer under the Bermuda Insurance Act 1978 and related regulations, each as amended. On April 25, 2018, Kendall Re issued \$225.0 million Series 2018-1 Class A Principal At-Risk Variable Rate Notes due May 6, 2021 under a variable rate note program from which the proceeds have been used to provide Aspen Bermuda Limited with fully-collateralized retrocessional reinsurance protections against losses from a range of international perils, which include: U.S. named storms, U.S. and Canada earthquakes, U.S. severe thunderstorms, U.S. wildfires, U.S. winter storms and European windstorms. The results and balance sheet of Kendall Re are not included within the consolidated financial statements of the Company because the Company holds no variable or voting interest in Kendall Re.

Access to capital. Our business operations are in part dependent on our financial strength, the opinions of the independent rating agencies thereof as discussed elsewhere in this report and the market's perception thereof, as measured by total shareholders' equity, which was \$2,725.5 million as at December 31, 2019 (December 31, 2018 — \$2,640.4 million). Our ability to access the capital markets is dependent on, among other things, our operating results, market conditions and our perceived financial strength. We regularly monitor our capital and financial position, as well as investment and securities market conditions, both in general and with respect to Aspen Holdings' securities. Our preference shares and depositary shares are listed on the NYSE.

Letter of Credit Facilities. Refer to Item 18, Note 23 of our consolidated financial statements, "Credit Facility and Long-term Debt" for discussion of our credit agreements and letter of credit facilities.

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

Not applicable.

D. Trend Information

In 2019, the insurance market experienced rate increases across many lines of business. Reinsurance pricing tends to follow the insurance market, although catastrophe events and other large losses in the market, such as Japanese typhoons in 2019 and 2018, can generate more immediate and significant rate improvements. Although the (re)insurance market remains competitive and there remains an abundance of available capital, market conditions and rates are strengthening, which is expected to continue in 2020. As the rate environment improves, we continue to seek opportunities to deploy capital most efficiently to achieve attractive risk-adjusted returns. We have taken steps to streamline our operations and to more closely align our production offices with our customer base and our underwriting teams are positioned to identify and capitalize on acceptable business to underwrite without sacrificing underwriting discipline.

In addition to the previously announced adverse development reinsurance agreement with a wholly-owned subsidiary of Enstar Group Limited, which will reinsure losses incurred on or prior to December 31, 2019, we will continue to review our own external reinsurance coverage arrangements with the aim of improving capital efficiencies. Through continued deployment of our investment strategy and strategic asset allocation, we will also seek to deliver enhanced investment returns.

We continue to closely monitor developments related to the outbreak of COVID-19, also known as coronavirus, to assess any potential impact on our business. Refer to Item 5A, “Operating Results - Recent Developments - COVID 19.”

Refer to Item 3D, “Risk Factors” and “Cautionary Statement Regarding Forward-Looking Statements” included in this report.

E. Off-Balance Sheet Arrangements

As at December 31, 2019, we were not party to any off-balance sheet arrangements, as defined by Item 303(a)(4) of Regulation S-K, to which an entity unconsolidated with us is a party that management believes is reasonably likely to have a current or future effect on our financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that we believe is material to investors.

In November 2016, Peregrine, a subsidiary of the Company, was registered as a segregated accounts company under the Bermuda Segregated Accounts Companies Act 2000, as amended. As at December 31, 2019, Peregrine had formed four segregated accounts which were funded by third-party investors. The segregated accounts have not been consolidated as part of the Company’s consolidated financial statements.

F. Tabular Disclosure of Contractual Obligations

The following table summarizes our contractual obligations (other than our obligations to employees and our Preference Shares) under long-term debt, operating leases (net of subleases) and reserves relating to insurance and reinsurance contracts as at December 31, 2019:

	2020	2021	2022	2023	2024	Later Years	Total
	(\$ in millions)						
Operating lease obligations	\$ 17.7	\$ 16.4	\$ 13.0	\$ 12.2	\$ 11.7	\$ 73.6	\$ 144.6
Long-term debt obligations ⁽¹⁾	—	—	—	300.0	—	—	300.0
Reserves for losses and LAE ⁽²⁾	1,734.5	1,242.8	922.5	695.4	518.7	1,837.9	6,951.8
Total	<u>\$ 1,752.2</u>	<u>\$ 1,259.2</u>	<u>\$ 935.5</u>	<u>\$ 1,007.6</u>	<u>\$ 530.4</u>	<u>\$ 1,911.5</u>	<u>\$ 7,396.4</u>

⁽¹⁾ The long-term debt obligations disclosed above do not include the \$14.0 million annual interest payments on our outstanding senior notes or dividends payable to holders of our preference shares.

⁽²⁾ In estimating the time intervals into which payments of our reserves for losses and loss adjustment expenses fall, as set out above, we have utilized actuarially assessed payment patterns. By the nature of the insurance and reinsurance contracts under which these liabilities are assumed, there can be no certainty that actual payments will fall in the periods shown and there could be a material acceleration or deceleration of claims payments depending on factors outside our control. The total amount of payments in respect of our reserves, as well as the timing of such payments, may differ materially from our current

estimates for the reasons set out under Item 18, Note 2 of our consolidated financial statements, “Critical Accounting Policies — Reserves for Losses and Loss Expenses.”

For a detailed description of our operating lease obligations, refer to Item 18, Note 18 of our consolidated financial statements, “Operating Leases.”

G. Safe Harbor

Cautionary Statement Regarding Forward-Looking Statements

This report 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”), that are made pursuant to the “safe harbor” provisions of The Private Securities Litigation Reform Act of 1995. Forward-looking statements include all statements that do not relate solely to historical or current facts. In particular, statements that use the words such as “believe,” “anticipate,” “expect,” “assume,” “objective,” “target,” “plan,” “estimate,” “project,” “seek,” “will,” “may,” “aim,” “likely,” “continue,” “intend,” “guidance,” “outlook,” “trends,” “future,” “could,” “would,” “should,” “target,” “predict,” “potential,” “on track” or their negatives or variations and similar terminology and words of similar import generally involve forward-looking statements.

All forward-looking statements rely on a number of assumptions, estimates and data concerning future results and events that are subject to a number of risks, uncertainties, assumptions and other factors, many of which are outside our control that could cause actual results to differ materially from such forward-looking statements. Accordingly, there are important factors that could cause our actual results to differ materially from those anticipated in the forward-looking statements. We believe that these factors include, but are not limited to, those set forth in Item 3D under “Risk Factors” as those factors may be updated from time to time in our periodic filings with the United States Securities and Exchange Commission (the “SEC”) which are accessible on the SEC’s website at <http://www.sec.gov>.

The inclusion of forward-looking statements in this report should not be considered as a representation by us that current plans or expectations will be achieved. Forward-looking statements speak only as of the date on which they are made and we undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future developments or otherwise, except as required by law.

Effects of Inflation

Inflation may have a material effect on our consolidated results of operations by its effect on interest rates and on the cost of settling claims. The potential exists after a catastrophe or other large property loss, such as the hurricanes in 2017, for the development of inflationary pressures in a local economy as the demand for services, such as construction, typically surges. The cost of settling claims may also be increased by global commodity price inflation. We seek to take both these factors into account when setting reserves for any events where we think they may be material.

Our calculation of reserves for losses and loss expenses in respect of casualty business includes assumptions about future payments for settlement of claims and claims-handling expenses, such as medical treatments and litigation costs. We write casualty business in the United States, the United Kingdom and Australia and certain other territories, where claims inflation has in many years run at higher rates than general inflation. To the extent inflation causes these costs to increase above reserves established for these claims, we will be required to increase our loss reserves with a corresponding reduction in earnings. The actual effects of inflation on our results cannot be accurately known until claims are ultimately settled.

In addition to general price inflation, we are exposed to a persisting long-term upwards trend in the cost of judicial awards for damages. We seek to take this into account in our pricing and reserving of casualty business.

We also seek to take into account the projected impact of inflation on the likely actions of central banks in the setting of short-term interest rates and consequent effects on the yields and prices of fixed interest securities. As at February 2020, although inflation is currently low, we consider that in the medium-term there is a risk that inflation, interest rates and bond yields may rise, resulting in a decrease in the market value of certain of our fixed interest investments. Refer to Item 3D, “Risk Factors — Market and Liquidity Risks — Our results of operations and investment portfolio may be materially affected by conditions impacting the level of interest rates in the global capital markets and major economies, such as central bank policies in interest rates and the rate of inflation.”

H. Reconciliation of Non-U.S. GAAP Financial Measures

In presenting Aspen's results, management has included and discussed certain "non-GAAP financial measures". Management believes that these non-GAAP financial measures, which may be defined differently by other companies, better explain Aspen's results of operations in a manner that allows for a more complete understanding of the underlying trends in Aspen's business. However, these measures should not be viewed as a substitute for those determined in accordance with GAAP.

Average equity, a non-U.S. GAAP financial measure, is used in calculating ordinary shareholders return on average equity. Average equity is calculated by taking the arithmetic average of total shareholders' equity on a monthly basis for the stated periods excluding (i) the average share of equity due to non-controlling interests and (ii) the average value of preference shares less issue expenses.

	As at December 31, 2019	As at December 31, 2018
	(\$ in millions)	
Total shareholders' equity ⁽¹⁾	\$ 2,725.5	\$ 2,640.4
Non-controlling interest	—	(3.7)
Preference shares less issue expenses	(753.5)	(511.9)
Average adjustment	182.8	156.8
Average equity	<u>\$ 2,154.8</u>	<u>\$ 2,281.6</u>

⁽¹⁾ Retained earnings have been restated by \$15.6 million from January 1, 2017 to account for additional ceded premiums on excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior.

Accident Year Loss Ratio Excluding Catastrophes and prior year reserve movements is a non-GAAP financial measure. Aspen believes that the presentation of loss ratios excluding catastrophes and prior year reserve movements supports meaningful comparison from period to period of the underlying performance of the business. Accident year loss ratios excluding catastrophes are calculated by dividing net losses excluding catastrophe losses and prior year reserve movements by net earned premiums excluding catastrophe-related reinstatement premiums. Aspen has defined catastrophe losses in the full year of 2019 as losses associated predominately with Typhoons Faxai and Hagibis, Hurricane Dorian, storms in Australia, Indian monsoons and other weather-related events. Catastrophe losses in the full year of 2018 were defined as losses associated predominantly with Hurricanes Florence and Michael in the U.S., Typhoon Jebi in Japan, Winter Storm Friederike in Europe, U.K. winter storms, wildfires in California and other U.S. and Asian weather-related events.

Retention ratio is a non-GAAP financial measure and is calculated by dividing net written premiums by gross written premiums.

<u>Retention ratio</u>	Twelve Months Ended December 31, 2019			Twelve Months Ended December 31, 2018		
	Reinsurance	Insurance	Total	Reinsurance	Insurance	Total
	(\$ in millions)					
Gross written premium	1,485.5	1,956.9	3,442.4	1,495.7	1,951.2	3,446.9
Net written premium	1,251.1	1,176.8	2,427.9	1,182.9	899.1	2,082.0
Retention ratio	84.2%	60.1%	70.5%	79.1%	46.1%	60.4%

Underwriting profit or loss is a non-GAAP financial measure. Profit or loss for each of the business segments is measured by underwriting profit or loss. Underwriting profit or loss is the excess of net earned premiums over the sum of losses and loss expenses, amortization of deferred policy acquisition costs and general and administrative expenses. Underwriting profit or loss provides a basis for management to evaluate the segment's underwriting performance.

General Insurance:

Along with most property and casualty insurance companies, we use the loss ratio, the expense ratio and the combined ratio as measures of underwriting performance. These ratios are relative measurements that describe, for every \$100 of net premiums earned, the amount of losses and loss adjustment expenses, and the amount of other underwriting expenses that would be incurred. A combined ratio of less than 100 indicates underwriting income and a combined ratio of over 100 indicates an underwriting loss. Combined ratios differ from U.S. statutory combined ratios primarily due to the deferral of certain third-party acquisition expenses

for GAAP reporting purposes and the use of net premiums earned rather than net premiums written in the denominator when calculating the acquisition expense and the general and administrative expense ratios.

Following the merger in February 2019 we undertook a number of actions to strengthen the fundamentals of the organization and better position the business to create value over the long-term. The following table presents supplementary financial information regarding our two reporting segments, Reinsurance and Insurance, to show the impact on our financial performance from the business which did not meet our performance criteria and has been classified as legacy. The following table also presents the financial performance of our U.S. agricultural business, which management believes provides useful supplemental information to investors by breaking down the drivers of our results.

Twelve Months Ended December 31, 2019								
	Reinsurance				Insurance			Group Total
	Reinsurance	U.S. Agricultural ⁽¹⁾	Legacy ⁽²⁾	Reinsurance Total	Insurance	Legacy ⁽²⁾	Insurance Total	
Net earned premiums	862.3	299.4	93.5	1,255.2	842.0	196.1	1,038.1	2,293.3
Losses and loss adjustment expenses	572.8	280.8	64.3	917.9	523.4	238.4	761.8	1,679.7
Amortization of deferred policy acquisition expenses	199.5	31.3	34.1	264.9	113.1	34.7	147.8	412.7
General and administrative expenses	108.3	—	3.4	111.7	201.1	28.7	229.8	341.5
Underwriting (loss)/gain	\$ (18.3)	\$ (12.7)	\$ (8.3)	\$ (39.3)	\$ 4.4	\$ (105.7)	\$ (101.3)	\$ (140.6)
Corporate expenses								(54.5)
Non-operating expenses ⁽³⁾								(125.6)
Net investment income								197.3
Realized and unrealized investment gains								97.1
Realized and unrealized investment losses								(10.9)
Realized loss on debt extinguishment								(5.5)
Change in fair value of loan notes issued by variable interest entities								(3.1)
Change in fair value of derivatives								(144.2)
Interest expense on long term debt								(20.2)
Net realized and unrealized foreign exchange (losses)								(11.8)
Other income								4.9
Other expenses								(1.7)
(Loss) before tax								(218.8)
Income tax (expense)								(22.9)
Net (loss)								\$ (241.7)
Ratios								
Loss ratio	66.4 %	93.8 %	68.8 %	73.1 %	62.2 %	121.6 %	73.4 %	73.2 %
Policy acquisition expense ratio	23.1 %	10.5 %	36.5 %	21.1 %	13.4 %	17.7 %	14.2 %	18.0 %
General and administrative expense ratio ⁽⁴⁾	12.6 %	0.0 %	3.6 %	8.9 %	23.9 %	14.6 %	22.1 %	22.7 %
Expense ratio	35.7 %	10.5 %	40.1 %	30.0 %	37.3 %	32.3 %	36.3 %	40.7 %
Combined ratio	102.1 %	104.3 %	108.9 %	103.1 %	99.5 %	153.9 %	109.7 %	113.9 %
Accident Year Ex-cat Loss Ratio								
Loss ratio	66.4 %	93.8 %	68.8 %	73.1 %	62.2 %	121.6 %	73.4 %	73.2 %
Prior year loss development	5.6 %	— %	7.5 %	4.4 %	(2.3)%	(48.3)%	(11.0)%	(2.6)%
Catastrophe losses	(15.2)%	— %	— %	(10.1)%	(2.1)%	(0.6)%	(1.7)%	(6.3)%
Accident year ex-cat loss ratio	56.8 %	93.8 %	76.3 %	67.4 %	57.8 %	72.7 %	60.7 %	64.3 %

⁽¹⁾ U.S. Agricultural is our U.S. crop insurance business written on a reinsurance basis through a strategic partnership with CGB DS.

⁽²⁾ Legacy reflects business we have elected to cease underwriting following a series of strategic underwriting reviews.

Legacy (reinsurance) represents our global credit and surety reinsurance business that we ceased underwriting during Q3 2019.

Legacy (insurance) represents: (i) professional liability and property and casualty coverages for small to medium sized U.K.-based businesses that was bound through our managing general agent, Aspen Risk Management Limited that we placed into runoff during Q3 2019; (ii) international cargo insurance that we ceased underwriting during Q4 2018; (iii) our aviation line of business, which we decided to cease underwriting during Q3 2018; (iv) marine hull insurance written through the Lloyd's platform that we ceased underwriting during Q3 2018; (v) professional liability insurance written through the Lloyd's platform that we ceased underwriting during Q3 2018; (vi) international property insurance previously written via a joint underwriting initiative that we ceased underwriting during Q1 2017; and (vii) employers and public liability lines previously written that we ceased underwriting during Q4 2015.

Legacy (insurance) also includes international marine and energy liability products, and our global accident and health line of business, which, following a strategic review of our underwriting portfolio that began in December 2019, we determined to cease underwriting and have started to wind down in February 2020 and March 2020, respectively.

⁽³⁾ Non-operating expenses includes \$103.4 million of costs related to the Merger, severance, retention and other costs, and \$22.2 million of expenses related to the Company's operating effectiveness and efficiency program, which includes \$12.3 million of impairment charges related to lease assets as a result of sub-leasing certain office space.

⁽⁴⁾ The general and administrative expense ratio in the total column includes corporate and non-operating expenses.

Item 6. Directors, Senior Management and Employees**A. Directors and Senior Management**

As at January 1, 2019, the Board consisted of Messrs. Glyn Jones, Chris O’Kane, Albert Beer, Matthew Botein, John Cavoores, Gary Gregg, Gordon Ireland, Karl Mayr, Brett Pearlman and Ronald Pressman and Ms. Heidi Hutter (the “Predecessor Board”). In accordance with the terms of the Merger Agreement, at the effective time of the Merger, each of the eleven directors of the Company immediately prior to the Merger other than Gordon Ireland and John Cavoores (namely, Glyn Jones, Christopher O’Kane, Albert Beer, Matthew Botein, Gary Gregg, Karl Mayr, Bret Pearlman, Ronald Pressman and Heidi Hutter) ceased to be a director of the Company. Gordon Ireland and John Cavoores remained as directors of the Company. In the case of Glyn Jones, he also stepped down from his position as Chair of the Predecessor Board at the effective time of the Merger and was succeeded by Mark Cloutier. Further, in accordance with the terms of Mr. O’Kane’s employment agreement with the Company, his employment terminated upon the closing of the Merger, and he was deemed to have resigned from any position (including as an officer and a director) with the Company or any of its subsidiaries or affiliates, effective February 15, 2019.

Upon the closing of the Merger on February 15, 2019, the following individuals were also appointed to the Board: (i) Mark Cloutier; (ii) Joshua Black; (iii) Alexander Humphreys; (iv) Gernot Lohr; (v) Gary Parr and (vi) Michael Saffer. Mr. Beer was re-appointed to the Board on July 23, 2019 and Mr. Bruce Hemphill was appointed to the Board on July 23, 2019.

The following are the directors and senior management of the Company as of the date of this report. On March 16, 2020, the Company announced that Mr. Kevin Chidwick has been appointed Group Chief Financial Officer, effective May 1, 2020. Mr. Chidwick succeeds Mr. Scott Kirk, who will leave the Company on April 30, 2020.

<u>Name</u>	<u>Position with the Company</u>	<u>Date Appointed</u>
Directors		
Mark Cloutier	Group Chief Executive Officer, Chair of the Board, Member of the Compensation Committee and Chair of the Risk Committee	February 2019
Albert Beer	Director, Member of Audit and Risk Committees	July 2019 ⁽¹⁾
Joshua Black	Director, Member of Risk Committee	February 2019
John Cavoores	Director, Member of Audit and Risk Committees	October 2006 ⁽²⁾
Bruce Hemphill	Director, Member of Risk Committee	July 2019
Alex Humphreys	Director, Member of Compensation and Risk Committees	February 2019
Gordon Ireland	Director, Chair of Audit Committee, Member of Risk Committee	February 2013
Gernot Lohr	Director, Chair of Compensation Committee	February 2019
Gary Parr	Director	February 2019
Michael Saffer	Director, Member of Risk Committee	February 2019
Senior Management		
Mark Cloutier	Group Chief Executive Officer and Chair of the Board	February 2019
Bryan Astwood	Group Chief Investment Officer	May 2019
Michael Cain	Group General Counsel, Company Secretary and Group Chief Operating Officer	March 2008
David Cohen	President and Chief Underwriting Officer of Aspen Insurance	November 2015
Christian Dunleavy	Chief Underwriting Officer of Aspen Re, Chief Executive Officer and Chief Underwriting Officer of Aspen Bermuda	May 2019
Mohinder Kang	Chief People Officer	November 2019
Scott Kirk	Group Chief Financial Officer	December 2014
Jonathan Ritz	President	September 2019

(1) Mr. Beer previously served as a Director of the Company from February 4, 2011 until February 15, 2019.

(2) Mr. Cavoores was initially appointed to the Board as an Executive Director in 2006 and has served as a Non-Executive Director since January 1, 2012.

Biographical information

Directors:

- **Mark Cloutier, Group Chief Executive Officer, Executive Chairman of the Board, Chair of the Risk Committee and Member of the Compensation Committee**

Mr. Cloutier was appointed Executive Chairman and Group Chief Executive Officer of Aspen on February 15, 2019. He had previously been Executive Chairman of the Brit Group since January 2017 and prior to this, he was Chief Executive Officer of the Brit Group from October 2011. As Chief Executive Officer, Mr. Cloutier led a major restructuring of Brits' global business, the successful listing on the London stock exchange through an initial public offering in 2014 as well as the subsequent acquisition of the business by Fairfax Financial Holdings in 2015.

With over 35 years' experience working in the international insurance and reinsurance sector in multiple jurisdictions including Canada, the United States, the United Kingdom, Bermuda, Continental Europe, Asia, China and South Africa, Mr. Cloutier has held a number of Chief Executive Officer and senior executive positions, including Chief Executive Officer of the Alea Group, Chief Executive Officer of Overseas Partners Re and President of E.W. Blanch Insurance Services Inc. He has been a member of the Franchise Board and Audit Committee of the Society of Lloyd's since February 2015 and was appointed to the Nomination and Governance Committee in February 2017.

Mr. Cloutier has worked with a variety of private equity investors including Apollo Management International LLP, CVC Capital Partners, Kohlberg Kravis Roberts (KKR) and Fortress. He started his career in British Columbia Canada with Brouwer and company independent loss adjusters before moving on to form his own firm, Maxwell Cloutier Adjusters Ltd.

- **Albert Beer, Independent Director and Member of the Audit and Risk Committees**

Mr. Beer has over 40 years of actuarial and management experience in the insurance industry and has also served as a director of Aspen Bermuda Limited since July 2014. Mr. Beer previously held various roles at American Re-Insurance Corporation/Munich Re America, which included the active supervision of principal financial and accounting officers. Mr. Beer is the Michael J. Kevany/XL Professor of Risk Management, Insurance and Actuarial Science at The Peter J. Tobin College of Business School of Risk Management, Insurance and Actuarial Science at St. John's University. Mr. Beer graduated Phi Beta Kappa from Manhattan College with a B.S. in Mathematics and holds an M.A. in Mathematics from the University of Colorado. Mr. Beer was appointed to the Board on July 23, 2019 after having previously served on the Board from February 4, 2011 until February 15, 2019.

- **Joshua Black, Director and Member of the Risk Committee**

Mr. Black is a Principal in Apollo's Private Equity division, having joined Apollo in 2011. Mr. Black focuses on a wide range of industries, including property and casualty insurance. Prior to joining Apollo, he was a member of the Leveraged Finance Product Group at Goldman Sachs & Co., having worked previously in its Financial Institutions Industry Group. Mr. Black currently sits on the board of Sun Country Airlines, Tegra, Huddle House, Somerset Partners, Augustus Specialty, Pacific Quick Serve (BK Franchisee) and ESW. Mr. Black graduated cum laude from Princeton University with a B.A. in Religion. Mr. Black was appointed as a Director of the Board on February 15, 2019 and is a member of the board of Highlands Holdings, Ltd.

- **John Cavoeres, Independent Director and Member of the Audit and Risk Committees**

Mr. Cavoeres has over 40 years of experience within the insurance industry having, among other positions, formerly served as President and Chief Executive Officer of OneBeacon Insurance Company from 2003 to 2005. Among his other positions in the insurance industry, Mr. Cavoeres was President of National Union Insurance Company, a subsidiary of AIG, Inc. and spent 19 years at Chubb Insurance Group, where he served as Chief Underwriting Officer, Executive Vice President and Managing Director of overseas operations, based in London. Mr. Cavoeres has also held several directorships on the boards of financial services and other companies and served as Senior Insurance Advisor to The Blackstone Group from September 2006 until March 2010. As a result, Mr. Cavoeres provides the Board with broad-ranging business experience, with a particular focus on insurance matters and strategies within the U.S. Mr. Cavoeres graduated from Holy Cross with a degree in Economics. Mr. Cavoeres was appointed to the Board as an Executive Director on October 30, 2006 and has served as a Non-Executive Director since January 1, 2012. Mr. Cavoeres also currently serves on the board of BritCore.

- **Bruce Hemphill, Director and Member of the Risk Committee**

Mr. Hemphill has over 25 years of experience in the financial services industry and was, prior to his appointment to the Board, Chief Executive Officer of Old Mutual plc during its restructuring. Having held a variety of senior management roles leading multi-jurisdictional financial services businesses through corporate transformation initiatives, Mr. Hemphill provides the Board with extensive financial services industry experience with a particular focus on improving performance through restructures and divestitures. Mr. Hemphill holds a B.A. in Politics from the University of Cape Town and is a qualified solicitor in England and Wales having completed the Common Professional Law Society Examinations at the College of Law, Lancaster Gate, London. Mr. Hemphill was appointed as a Director of the Board on July 23, 2019. Mr. Hemphill also currently serves on the board of Catalina Holdings (Bermuda) Ltd.

- **Alex Humphreys, Director and Member of the Compensation and Risk Committees**

Mr. Humphreys is a Partner of Apollo Global Management, Inc., which he joined in 2008. Prior to this, Mr. Humphreys worked at Goldman Sachs in its London-based financial institutions M&A team. Mr. Humphreys also currently serves on the boards of various Apollo portfolio companies including Athora Holding, Ltd, Catalina Holdings (Bermuda) Ltd., Luminescence Cooperatief U.A., HD Financial Holdings Limited (parent company of Haydock Finance Holdings Limited) and Amissima Holdings, S.r.l. He was appointed as a Director of the Board on February 15, 2019 and is a member of the board of Highlands Holdings, Ltd.

- **Gordon Ireland, Independent Director, Chair of the Audit Committee and Member of the Risk Committee**

Mr. Ireland has over 35 years of experience within the financial services sector, having worked at PricewaterhouseCoopers and its predecessor firms for 36 years until 2010, where he was also a member of the U.K. Firms' Supervisory Board for nine years. From July 2010 until June 2015, Mr. Ireland was a director of L&F Holdings Limited and Chief Executive of L&F Indemnity Limited, the professional indemnity captive insurance group which serves the PricewaterhouseCoopers network. Mr. Ireland has held a number of directorships on the boards of financial institutions and is currently a director of Yorkshire Building Society. As a result of his audit-led exposure to the London Market and general insurance and reinsurance markets throughout his career, Mr. Ireland provides strong insurance audit skills and technical accountancy expertise to our Board. As a result, he serves as Chair of the Audit Committee, on which he is also a designated financial expert, and as a member of the Risk Committee. Mr. Ireland graduated with Honors from Southampton University with a BSc in Mathematics. Mr. Ireland was appointed as a Director of the Board on February 7, 2013.

- **Gernot Lohr, Director and Chair of the Compensation Committee**

Mr. Lohr joined Apollo in 2007 after having been a founding partner at Infinity Point LLC, Apollo's joint venture partner for the financial services industry, since 2005. Before that time, Mr. Lohr spent eight years in financial services investment banking at Goldman Sachs & Co in New York. Mr. Lohr worked at McKinsey & Company and B. Metzler Corporate Finance in Frankfurt. Today, Mr. Lohr is a member of Apollo's Management Committee and oversees Apollo's investments in the financial services sector. He serves on the board of directors of Athene Holdings, Athora Holding, Ltd, BKB Bank and Catalina Holdings (Bermuda) Ltd. Mr. Lohr was appointed as a Director of the Board on February 15, 2019 and serves on the Compensation Committee. Mr. Lohr graduated from the University of Karlsruhe, Germany, with a joint Master's Degree in Economics and Engineering and holds an MBA from the MIT Sloan School of Management, where he is currently a member of the MIT Sloan Advisory Board.

- **Gary Parr, Director**

Mr. Parr is a Senior Managing Director and Executive Committee member of Apollo Global Management, Inc. Previously, Mr. Parr was a Deputy Chairman and on the board of directors of Lazard, LLC. Prior to that, he was with Morgan Stanley, where he served as a Vice Chairman, the Head of Global Financial Institutions and Co-Head of the Global M&A Group. Mr. Parr was the Chairman of the New York Philharmonic and is now the Chairman of the Parr Center for Ethics at the University of North Carolina and a trustee of the Morgan Library. He was previously the Chairman of Venetian Heritage and a board member of Lincoln Center and the Berkeley Divinity School at Yale. Mr. Parr graduated with honors, Phi Beta Kappa and Beta Gamma Sigma, from the University of North Carolina and received his MBA from Northwestern University. He received the Outstanding Alumni Award at the University of North Carolina in 2013. Mr. Parr was appointed as a Director of the Board on February 15, 2019.

- **Michael Saffer, Director and Member of the Risk Committee**

Mr. Saffer is a Principal in the London Private Equity team at Apollo Global Management, Inc., having joined in 2015. Mr. Saffer has been involved in various private equity transactions including Apollo's acquisition of Oldenburgische Landesbank

(OLB), Catalina Holdings (Bermuda) Ltd., Aspen and Gamenet. Mr. Saffer was appointed as a Director of the Board on February 15, 2019 and serves on the Risk Committee as well as on the boards of Highlands Holdings, Ltd. and Gamenet. Previously, Mr. Saffer was a member of the M&A group at Credit Suisse based in London. Mr. Saffer graduated from the University of Nottingham with a BSc in Economics.

Senior Management

- **Mark Cloutier, Group Chief Executive Officer and Chair of the Board**

See Mr. Cloutier’s Biographical Information under Directors above.

- **Bryan Astwood, Group Chief Investment Officer**

Mr. Astwood has served as Aspen’s Group Chief Investment Officer since 2009 and as its Group Representative to the BMA since 2014. He has over 30 years of experience in the fixed income, equity, foreign exchange and commodity markets, having begun his career at the Bank of Bermuda. Prior to joining Aspen in 2003 as Group Treasurer, he worked at Bank of America in Hong Kong, Industrial Bank of Japan in Tokyo and Butterfield Asset Management and Orbis Investment Management in Bermuda.

- **Michael Cain, Group General Counsel, Company Secretary and Group Chief Operating Officer**

Mr. Cain joined the Company as Group General Counsel and Company Secretary in March 2008 and served in this capacity until May 2019 when he was appointed Group Chief Operating Officer. In March 2020, he resumed his role as Group General Counsel and Company Secretary in addition to Group Chief Operating Officer. Mr. Cain also serves as Chief Executive Officer of both Aspen U.K. and AMAL (a role on which he is focusing pending further appointments) and previously served as Chief Executive Officer of Aspen Bermuda. He also holds directorships on various boards of Aspen’s subsidiaries. Prior to joining the Company, Mr. Cain served as Corporate Counsel and Company Secretary to Benfield Group Limited from 2002 to 2008 and has worked at law firms Barlow Lyde & Gilbert LLP and Ashurst LLP.

- **David Cohen, President and Chief Underwriting Officer of Aspen Insurance**

Mr. Cohen has almost 40 years of insurance industry experience, having begun his career at American International Group, Inc. in 1980. Most recently, he was Global Casualty Chief Underwriting Officer at Liberty International Underwriters (“LIU”) from June 2001 to October 2015 and was President of LIU U.S. from December 2006 to October 2015. Prior to this, he was President of Casualty at Tamarack American (a division of Great American Insurance Company) for five years and worked in the Excess Casualty Division at The Home Insurance Company for 10 years. In addition to his role as President and Chief Underwriting Officer of Aspen Insurance, Mr. Cohen holds directorships on various boards of Aspen’s subsidiaries.

- **Christian Dunleavy, Chief Underwriting Officer of Aspen Re and CEO and Chief Underwriting Officer of Aspen Bermuda**

Mr. Dunleavy joined Aspen in 2015 as Head of Global Property Catastrophe. He was appointed as Chief Underwriting Officer of Aspen Re and CEO of Aspen Bermuda in May 2019. He has also served as Chief Underwriting Officer of Aspen Bermuda Limited since May 2017. Mr. Dunleavy joined Aspen Re in September 2015 as Head of Global Property Catastrophe. He had previously been at Axis Reinsurance where he was a Senior Vice President, responsible for U.S. Property Treaty, Caribbean Property and Workers Compensation Catastrophe business. Prior to joining Axis in 2002, Mr. Dunleavy was a Senior Analyst at RenaissanceRe, responsible for multi-peril modeling, pricing and portfolio analysis. Mr. Dunleavy is also a Director of the Association of Bermuda International Companies, the Association of Bermuda Insurers and Reinsurers and an Independent Director of Colonial Group International.

- **Mohinder (Mo) Kang Chief People Officer**

Mr. Kang joined the Company as Chief People Officer in November 2019. He joined the Company from the Post Office Limited where he was Group HR Director. Mr. Kang’s extensive experience includes leading significant change projects, as well as developing people and communication strategies. Mr. Kang had previously served as Group HR and Corporate Communications Director at Hyperion Insurance Group, and Group Chief Human Resources Officer at QBE Insurance Group as well as Organisation Development Director at Zurich Financial Services.

- **Scott Kirk, Group Chief Financial Officer**

Mr. Kirk joined Aspen as Group Financial Controller in 2007 and assumed the role of Group Head of Finance in 2009. Following his appointment as Chief Financial Officer of Aspen Insurance in 2011, Mr. Kirk was appointed as Group Chief

Financial Officer in December 2014. Prior to joining the Company, Mr. Kirk worked at Endurance Specialty Holdings Limited, joining Endurance Re America in New York after its formation in 2002. Prior to that, he was at Trenwick International in London where he worked in finance and treasury. Mr. Kirk began his career as an auditor at KPMG, Brisbane and is a member of the Institutes of Chartered Accountants of both England and Wales and Australia.

- **Jonathan Ritz, President**

Mr. Ritz joined Aspen as President of Aspen Holdings in September 2019. Prior to joining Aspen, he served as Chief Executive Officer of Validus' US Insurance Operations, which included Western World Insurance Group, Crop Risk Services and Validus Specialty (all acquired by AIG in 2018). He also served as Chief Operating Officer of Validus Holdings, Ltd. and previously held various Chief Underwriting and Operating positions with United America Insurance Group, IFG Companies-Burlington Insurance Group and ICAT Holdings LLC. Mr. Ritz began his career in reinsurance and was also a Managing Director at Guy Carpenter.

B. Compensation

Director Compensation

The Company paid approximately \$1.0 million as aggregate compensation to non-executive directors for their services during 2019. This includes: (i) \$0.3 million in cash paid to non-executive directors of the Predecessor Board (other than Messrs. Beer, Cavoores and Ireland) for their services as a director prior to the Merger; and (ii) \$0.7 million in cash paid to Messrs. Beer, Cavoores, Hemphill and Ireland in connection with their service as directors of the Company and, in the case of Messrs. Beer and Ireland, of certain of the Company's subsidiaries.

Mr. Cloutier, our Group Chief Executive Officer and Executive Chair of the Board, and Mr. O'Kane, who was Chief Executive Officer and an executive director of the Board prior to the Merger, did not receive any compensation for their services as a director in 2019. Likewise, Messrs. Black, Humphreys, Lohr, Parr and Saffer did not receive any compensation for their services as a director. All directors are reimbursed for travel and other related expenses incurred while attending Board meetings.

Senior Management Compensation

During 2019, the members of senior management identified in Item 6A (including Mr. Cloutier) received approximately \$20.4 million in aggregate compensation. This is comprised of: (i) base salary of approximately \$4.3 million, (ii) discretionary bonuses, which include annual bonuses paid in 2020 for service during 2019, retention bonuses as well as transaction bonuses in connection with the Merger, of approximately \$14.4 million; and (iii) pension, retirement, and other benefits of approximately \$1.7 million.

There are currently no equity compensation plans under which equity securities of the Company are authorized for issuance. All of the Company's equity-based award plans were terminated following the accelerated vesting and cancellation of restricted share units, performance shares and phantom shares immediately prior to the consummation of the Merger. For more information relating to the treatment of outstanding equity awards in connection with the Merger as well as compensation paid to former executive officers, including Mr. O'Kane, during 2019, refer to "Item 11. Executive Compensation - Compensation Discussion and Analysis - Treatment of Outstanding Equity Awards in connection with the Merger" and "--Potential Payments upon Termination or Change of Control - Chris O'Kane Separation Payments and Benefits" in our Form 10-K/A filed with the SEC on April 29, 2019 and incorporated herein by reference.

C. Board Practices

The Board currently consists of ten directors (see Item 6A above). The current directors on the Board have been elected to serve until the next Annual General Meeting of the Company or until their appointment is terminated in accordance with the By-Laws of the Company. There are no service contracts between the Company and any of the Company's non-executive directors providing for benefits upon termination of their service.

Audit Committee

The Audit Committee is comprised of Messrs. Ireland (Chair), Beer and Cavoores. Pursuant to its Charter, the Audit Committee has general responsibility to assist the Board in its oversight of: (i) the integrity of the Company's financial statements, including the accounting and financial reporting process of the Company and audits of the Company's financial statements; (ii) the Company's compliance with legal and regulatory requirements; (iii) the independent auditors' qualifications, performance and independence; and (iv) the performance of the Company's internal audit functions. Among other things, the Audit Committee annually reviews the qualifications of the independent auditors, makes recommendations to the Board as to their selection and reviews the plan, fees and results of their audit.

The Board determined that each of the members of the Audit Committee are financially literate as such term is defined by applicable NYSE and SEC requirements. In addition, the Board determined that Mr. Ireland qualifies as an "audit committee financial expert" pursuant to the rules and regulations of the SEC.

Compensation Committee

The Compensation Committee is comprised of Messrs. Lohr (Chair), Cloutier and Humphreys. Pursuant to its Charter, the Compensation Committee has general responsibility to assist the Board in its oversight responsibilities relating to the Company's compensation philosophy and strategy. The Compensation Committee further determines the compensation of the Group Chief Executive Officer, key employees and non-executive directors.

D. Employees

As at December 31, 2019, we employed 963 persons in the following countries:

Country	As at December 31, 2019	As at December 31, 2018	December 31, 2017
United Kingdom	461	611	686
United States	406	429	499
Bermuda	48	45	55
Switzerland	18	21	32
Singapore	22	26	33
Ireland	—	9	11
United Arab Emirates	5	7	8
France	—	—	4
Germany	—	—	3
Australia	3	3	3
Total	963	1,151	1,334

The decrease in the number of employees in 2019 compared to 2018 was primarily driven by the continued implementation of our outsourcing strategy as well as the termination of Aspen U.K.’s agency agreement with ARML. The decrease in 2018 compared to 2017 was primarily driven by the implementation of our outsourcing strategy. We believe that relations with our employees, none of which are subject to collective bargaining agreements, are good.

E. Share Ownership

Not applicable. 100% of the Company’s ordinary shares are owned by Parent and there are no other ordinary shares or classes of ordinary shares issued and no share-based compensation plans as at December 31, 2019.

Item 7. Major Shareholders and Related Party Transactions**A. Major Shareholders**

As more fully described in Item 18, Note 1 to our consolidated financial statements, “History, Organization and Business Combination,” following the Merger, Parent owns 100% of the Company’s issued and outstanding ordinary shares. Parent is an affiliate of certain investment funds managed by affiliates of Apollo.

B. Related Party Transactions**Relationships and Related Party Transactions with Apollo or its Affiliates**

Parent, an affiliate of certain investment funds managed by Apollo, owns all of the Company’s ordinary shares. Additionally, certain of our directors are employees of, or may provide other services to, Apollo and its affiliates. Namely, Messrs. Black, Humphreys, Lohr, Parr and Saffer are employees of Apollo and Mr. Hemphill provides other services to Apollo and/or its affiliates.

For a disclosure of other related party transactions, refer to Item 18, Note 19 of our consolidated financial accounts, “Related Party Transactions.”

C. Interests of Experts and Counsel

Not applicable.

Item 8. Financial Information**A. Consolidated Statements and Other Financial Information**

Reference is made to Item 18 of this report, for the consolidated financial statements and reports of the Company and the Notes thereto, as well as the schedules to the consolidated financial statements.

B. Significant Changes

Refer to Item 18, Note 24 to the consolidated financial statements “Subsequent Events” for a disclosure of events subsequent to the balance sheet date.

Item 9. The Offer and Listing

A. Offer and Listing Details

As a result of the Merger, all of the Company’s publicly traded ordinary shares were automatically canceled. The ordinary shares of the Company ceased trading on the NYSE prior to the opening of trading on February 15, 2019. The Company’s preference shares and depository shares continue to be listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE. For additional detail, refer to Item 18, Note 12, “Capital Structure” in Item 18 of this report.

B. Plan of Distribution

Not applicable.

C. Markets

The Company’s preference shares and the depository shares are listed and traded on the NYSE. The 5.950% Fixed-to-Floating Perpetual Non-Cumulative Preference Shares (NYSE:AHL PRC) began trading on May 7, 2013. The 5.625% Perpetual Non-Cumulative Preference Shares (NYSE: AHL PRD) began trading on September 21, 2016, and the depository shares (NYSE: AHL PRE), each representing a 1/1000th interest in a share of the Company’s 5.625% Perpetual Non-Cumulative Preference Shares began trading on August 13, 2019.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

Item 10. Additional Information

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

The information required by this section, including a summary of certain key provisions of the Company’s Memorandum of Association and Amended and Restated Bye-laws were included in our Form S-3 (Registration No. 333-231937) filed with the SEC on June 4, 2019 (the “Registration Statement”), which summary is incorporated herein by reference. Our Memorandum of Association was filed as Exhibit 3.1 to a Form 6-K filed with the SEC on July 29, 2019, which Form 6-K was incorporated by reference into the Registration Statement. Our Amended and Restated Bye-laws were filed as Exhibit 3.4 to the Registration Statement.

C. Material Contracts

Merger Agreement:

On August 28, 2018, the Company entered into the Merger Agreement with Parent and Merger Sub. Pursuant to the Merger Agreement, Parent acquired all of the outstanding ordinary shares of the Company for an all-cash consideration of \$42.75 per share. The transaction was completed by a merger of Merger Sub with and into the Company, with the Company continuing as the surviving entity. Pursuant to the terms of the Merger Agreement, (i) each issued and outstanding ordinary share, par value \$0.015144558 per ordinary share, of the Company (each, an “Ordinary Share”) (other than any Ordinary Shares that are owned by the Company as treasury shares, owned by any subsidiary of the Company or owned by Parent or Merger Sub or any subsidiary thereof) was automatically canceled and converted into the right to receive \$42.75 in cash, without interest and less any required tax withholdings and (ii) each issued and outstanding 5.95% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Share

of the Company and each issued and outstanding 5.625% Perpetual Non-Cumulative Preference Share of the Company remained issued and outstanding as a preference share of the Surviving Company, in each case, entitled to the same dividend and all other preferences and privileges, rights, qualifications, limitations, and restrictions set forth in the applicable certificate of designation.

The Merger was approved by the Company's shareholders on December 10, 2018. On February 15, 2019, the Company announced completion of the acquisition following regulatory clearance and completion of other customary closing conditions.

Management Consulting Agreement with Apollo Management

On March 28, 2019, the Company entered into a Management Consulting Agreement, dated March 28, 2019 (the "Management Consulting Agreement"), by and between the Company and Apollo Management Holdings, L.P., a Delaware limited partnership ("Apollo Management"). Pursuant to the Management Consulting Agreement, Apollo Management will provide the Aspen Group with management consulting and advisory services related to the business and affairs of the Aspen Group and Aspen will pay to Apollo Management in consideration for its services under the Agreement an annual management consulting fee equal to the greater of (i) 1% of the consolidated net income of the Aspen Group for the applicable fiscal year, and (ii) \$5 million.

For more information about the Management Consulting Agreement, refer to Note 19, "Related Party Transactions" in Item 18 of this report.

Information Technology Outsourcing Agreement:

On August 31, 2018, Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services Inc. and Aspen Bermuda entered into an Outsourcing Agreement (the "IT Outsourcing Agreement") with Cognizant Worldwide Limited, a company registered in England ("Cognizant"). Pursuant to the IT Outsourcing Agreement, Cognizant will provide the Company with information technology services to enable us to deliver greater operating effectiveness and efficiencies. The IT Outsourcing Agreement became effective August 31, 2018 and has an initial term period of five years from October 1, 2018. The Company has the right to extend the IT Outsourcing Agreement for an additional two year term.

The IT Outsourcing Agreement has minimum service levels that Cognizant must meet or exceed. The compensation structure under the IT Outsourcing Agreement includes a combination of fixed and variable fees which may fluctuate, as set forth in the IT Outsourcing Agreement, based on our actual use of Cognizant's services. In 2019, the Company paid Cognizant approximately \$13.6 million for services rendered under the IT Outsourcing Agreement.

The IT Outsourcing Agreement contains customary representations and warranties and indemnity, termination and default provisions. We may terminate the IT Outsourcing Agreement for any reason by providing ninety days' prior written notice. In addition, we may terminate the IT Outsourcing Agreement as a result of, among other things, a material breach if not cured within a specified time, insolvency, persistent breaches, failure to meet key milestones, material adverse change as defined in the IT Outsourcing Agreement or particular circumstances constituting a change in control.

Business Process Outsourcing Agreement:

On April 20, 2018, Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services, Inc. and Aspen Bermuda entered into an Outsourcing Agreement (the "BPO Outsourcing Agreement") with Genpact International, Inc., a company incorporated in Delaware, United States ("Genpact"). Pursuant to the Agreement, Genpact will provide us with a range of operational business processes, primarily from their offshore service center in Gurgaon, India, to enable us to deliver greater operating effectiveness and efficiencies. The BPO Outsourcing Agreement became effective April 1, 2018 and has an initial term period of five years. We have the right to extend the BPO Outsourcing Agreement for three additional one year terms.

Under the terms of the BPO Outsourcing Agreement, Genpact will provide support function services to the Company. The BPO Outsourcing Agreement has minimum service levels that Genpact must meet or exceed. The compensation structure under the BPO Outsourcing Agreement includes a combination of fixed and variable fees which may fluctuate, as set forth in the BPO Outsourcing Agreement, based on our actual use of Genpact's services. In 2019, the Company paid Genpact approximately \$9 million for services rendered under the BPO Outsourcing Agreement. Additionally, we have the right to periodically compare the charges under the BPO Outsourcing Agreement to the market prices for comparable services.

The BPO Outsourcing Agreement contains customary representations and warranties and indemnity, termination and default provisions. We may terminate the BPO Outsourcing Agreement for any reason by providing ninety (90) days' prior written notice and paying a fee ranging from \$125,000 to \$3.5 million, depending on the circumstances. In addition, we may terminate the BPO Outsourcing Agreement as a result of, among other things, a material breach if not cured within a specified time, persistent breaches, insolvency, change of control, failure to meet key milestones or material adverse change as defined in the BPO Outsourcing Agreement.

On June 29, 2018, we entered into a novation agreement, effective April 1, 2018 (the “Novation Agreement”), with Genpact U.S. and Genpact (UK) Limited, a company registered in England and Wales (“Genpact U.K.”). Under the terms of the Novation Agreement, the rights and obligations of Genpact U.S. under the BPO Outsourcing Agreement, were transferred to and undertaken by Genpact U.K.

D. Exchange Controls

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

E. Taxation

Bermuda Taxation

Currently, there is no Bermuda income, corporate or profits tax or withholding tax, capital gains tax or capital transfer tax, estate or inheritance tax payable by holders of our shares, other than shareholders ordinarily resident in Bermuda, if any.

United States Taxation

The following summary sets forth the material U.S. federal income tax considerations related to the purchase, ownership and disposition of the Company’s preference shares, including the preference shares represented by the depositary shares (collectively, the “Preference Shares”). Unless otherwise stated, this summary deals only with shareholders who are U.S. Persons (as defined below) who purchase Preference Shares. The following discussion is only a discussion of the material U.S. federal income tax matters as described herein and does not purport to address all of the U.S. federal income tax consequences that may be relevant to a particular shareholder in light of such shareholder’s specific circumstances. In addition, the following summary does not address the U.S. federal income tax consequences that may be relevant to special classes of shareholders, such as financial institutions, insurance companies, regulated investment companies, real estate investment trusts, financial asset securitization investment trusts, dealers or traders in securities or currencies, tax-exempt organizations, U.S. expatriates, partnerships or other pass-through entities (or investors in such entities), persons whose functional currency is not the U.S. dollar, persons subject to the alternative minimum tax, accrual basis taxpayers subject to special tax accounting rules under Section 451(b) of the Code, persons who are considered with respect to any of us as “United States shareholders” for purposes of the controlled foreign corporation (“CFC”) rules of the Code (generally, a U.S. Person, as defined below, who owns or is deemed to own 10% or more of the total combined voting power or value of all classes of Aspen Holdings’ shares or the shares of any of our non-U.S. subsidiaries (i.e., 10% U.S. Shareholders)), or persons who hold their shares as part of a hedging or conversion transaction or as part of a short-sale or straddle, who may be subject to special rules or treatment under the Code. This discussion is based upon the Code, the Treasury Regulations promulgated thereunder and any relevant administrative rulings or pronouncements or judicial decisions, all as in effect on the date hereof and as currently interpreted, and does not take into account possible changes in such tax laws or interpretations thereof, which may apply retroactively. This discussion does not include any description of the tax laws of any state or local governments within the United States or of any non-U.S. government. Persons owning or considering making an investment in the Preference Shares should consult their own tax advisors concerning the application of the U.S. federal tax laws to their particular situations as well as any tax consequences arising under the laws of any state, local or foreign taxing jurisdiction prior to making such investment.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) holds the Preference Shares, the tax treatment of the partners will generally depend on the status of the partner and the activities of the partnership. If you are a partner of a partnership owning our shares, you should consult your tax advisor.

For purposes of this discussion, the term “U.S. Person” means: (i) an individual citizen or resident of the United States, (ii) a partnership or corporation, created in or organized under the laws of the United States, or organized under the laws of any political subdivision thereof, (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source, (iv) a trust if either (x) a court within the United States is able to exercise primary supervision over the administration of such trust and one or more U.S. Persons have the authority to control all substantial decisions of such trust or (y) the trust has a valid election in effect to be treated as a U.S. Person for U.S. federal income tax purposes or (v) any other person or entity that is treated for U.S. federal income tax purposes as if it were one of the foregoing.

Treatment of Depositary Shares. A holder of depositary shares evidenced by depositary receipts generally should be treated for U.S. federal income tax purposes as the owner of such holder's proportionate interest in the Preference Shares held by the depositary (or its custodian) that are represented and evidenced by such depositary receipts and the discussion herein assumes such treatment. Accordingly, any deposit or withdrawal of the Preference Shares by a U.S. Person in exchange for depositary shares generally will not result in the realization of gain or loss to such U.S. Person for U.S. federal income tax purposes.

Taxation of Distributions. Subject to the discussions below relating to the potential application of the CFC, related person insurance income ("RPII") and passive foreign investment company ("PFIC") rules, and the discussion below relating to redemptions of Preference Shares, cash distributions, if any, made with respect to the Preference Shares will constitute dividends for U.S. federal income tax purposes to the extent paid out of current or accumulated earnings and profits of Aspen Holdings (as computed using U.S. tax principles). To the extent such distributions exceed Aspen Holdings' earnings and profits, they will be treated first as a return of the shareholder's basis in their shares to the extent thereof, and then as gain from the sale of a capital asset. If, as expected, Aspen Holdings does not compute its earnings and profits under U.S. tax principles all distributions will be characterized as dividends for U.S. federal income tax purposes. Dividends paid by us to U.S. Persons who are corporations will not be eligible for the dividends received deduction. We believe dividends paid by us on our Preference Shares to non-corporate holders should be eligible for reduced rates of taxation as "qualified dividend income" if, as is intended, the Preference Shares remain listed on the NYSE and, provided certain requirements, including stock holding period requirements, are satisfied. Qualified dividend income is subject to tax at long-term capital gains rates rather than the higher rates applicable to ordinary income.

Dividends that exceed certain thresholds in relation to a shareholder's tax basis in the Preference Shares could be characterized as an "extraordinary dividend" under the Code. A non-corporate holder of our Preference Shares that receives an extraordinary dividend will be required to treat any losses on the sale of our Preference Shares as long-term capital losses to the extent of the extraordinary dividends such shareholder receives that are treated as qualified dividend income.

Classification of Aspen Holdings or Its Non-U.S. Subsidiaries as Controlled Foreign Corporations. Each 10% U.S. Shareholder (as defined below) of a non-U.S. corporation that is a CFC during a taxable year, and that owns shares in the CFC, directly or indirectly through non-U.S. entities, on the last day of the non-U.S. corporation's taxable year that the non-U.S. corporation is a CFC, must include in its gross income for U.S. federal income tax purposes its pro rata share of the CFC's "subpart F income," even if the subpart F income is not distributed. A non-U.S. corporation is considered a CFC if 10% U.S. Shareholders own (directly, indirectly through non-U.S. entities or by attribution by application of the constructive ownership rules of Section 958(b) of the Code (i.e., "constructively")) more than 50% of the total combined voting power of all classes of stock of such non-U.S. corporation, or more than 50% of the total value of all stock of such corporation. For purposes of taking into account insurance income, which is a category of subpart F income, a CFC also includes a non-U.S. corporation that earns insurance income in which more than 25% of the total combined voting power of all classes of stock or more than 25% of the total value of all stock is owned by 10% U.S. Shareholders on any day of the taxable year of such corporation, if the gross amount of premiums or other consideration for the reinsurance or the issuing of insurance or annuity contracts exceeds 75% of the gross amount of all premiums or other consideration in respect of all risks. A "10% U.S. Shareholder" is a U.S. Person who owns (directly, indirectly through non-U.S. entities or constructively) at least 10% of the total combined voting power or value of all classes of stock entitled to vote of the non-U.S. corporation. We believe that because of the anticipated dispersion of our share ownership, no U.S. Person who owns Preference Shares of Aspen Holdings directly or indirectly through one or more non-U.S. entities should be treated as owning (directly, indirectly through non-U.S. entities, or constructively) 10% or more of the total voting power or value of all classes of shares of Aspen Holdings or any of its non-U.S. subsidiaries. However, our shares may not be as widely dispersed as we believe due to, for example, the application of certain ownership attribution rules, and no assurance may be given that a U.S. Person who owns our shares will not be characterized as a 10% U.S. Shareholder, in which case such U.S. Person may be subject to taxation under the CFC rules.

The RPII CFC Provisions. The special RPII CFC income inclusion rules apply only if (i) the RPII of a non-U.S. insurance subsidiary, determined on a gross basis, is 20% or more of such company's gross insurance income for the taxable year, (ii) direct and indirect insureds and persons related (as defined below) to such insureds, whether or not U.S. Persons, are treated as owing (directly or indirectly through entities) 20% or more of the voting power or 20% or more of the value of such company and (iii) RPII shareholders (as defined below) are treated as owning, directly, indirectly through non-U.S. entities or constructively, 25% or more of such non-U.S. insurance subsidiary by vote or value. Although we cannot be certain, Aspen Holdings believes that each of the non-U.S. insurance subsidiaries did not have RPII equal to or in excess of 20% of its gross insurance income (the "20% Gross Income Exception") for recent years of operation and expects each non-U.S. insurance subsidiary not to exceed this limit for the foreseeable future. Additionally, as Aspen Holdings is not licensed as an insurance company, we do not anticipate that Aspen Holdings will have insurance income, including RPII.

RPII is any "insurance income" (as defined below) attributable to policies of insurance or reinsurance with respect to which the person (directly or indirectly) insured is a "RPII shareholder" (as defined below) or a "related person" (as defined below) to such RPII shareholder. In general, and subject to certain limitations, "insurance income" is income (including premium and

investment income) attributable to the issuing of any insurance or reinsurance contract which would be taxed under the portions of the Code relating to insurance companies if the income were the income of a U.S. domestic insurance company. For purposes of inclusion of the RPII of a non-U.S. insurance subsidiary in the income of RPII shareholders, unless an exception applies, the term “RPII shareholder” means any U.S. Person who owns (directly or indirectly through non-U.S. entities) any amount of Aspen Holdings’ shares. Generally, the term “related person” for this purpose means someone who controls or is controlled by the RPII shareholder or someone who is controlled by the same person or persons which control the RPII shareholder.

Control is measured by either more than 50% in value or more than 50% in voting power of stock applying certain constructive ownership principles. A corporation’s pension plan is ordinarily not a “related person” with respect to the corporation unless the pension plan owns, directly or indirectly through the application of certain constructive ownership rules, more than 50% measured by vote or value, of the stock of the corporation. Each non-U.S. insurance subsidiary will be treated as a CFC under the RPII provisions if RPII shareholders are treated as owning (directly, indirectly through non-U.S. entities or constructively) 25% or more of the shares of Aspen Holdings by vote or value.

If the special RPII CFC inclusion rules apply, each U.S. Person owning (directly or indirectly through non-U.S. entities) any shares in Aspen Holdings (and therefore, indirectly, in each non-U.S. insurance subsidiary) on the last day of such insurance subsidiary’s taxable year on which it is a CFC under the RPII rules will be required to include in its gross income for U.S. federal income tax purposes its share of the RPII of such company or companies, as the case may be, for the portion of the taxable year during which the non-U.S. insurance subsidiary was a CFC under the RPII provisions, determined as if all such RPII were distributed proportionately only to such U.S. Persons at that date, but limited by each such U.S. Person’s share of such company’s current-year earnings and profits as reduced by the U.S. Person’s share, if any, of certain prior-year deficits in earnings and profits. The amount of RPII includable in the income of a RPII shareholder is based upon the net RPII income for the year after deducting related expenses such as losses, loss reserves and operating expenses. Our non-U.S. insurance subsidiaries intend to operate in a manner that is intended to ensure that each qualifies for the 20% Gross Income Exception. Although we do not expect that the gross RPII of any of our non-U.S. insurance subsidiaries will equal or exceed 20% of such company’s gross insurance income in the foreseeable future, it is possible that we will not be successful in qualifying under this exception.

Computation of RPII. In order to determine how much RPII a non-U.S. insurance subsidiary has earned in each taxable year, our non-U.S. insurance subsidiaries may obtain and rely upon information from their insureds and reinsureds to determine whether any of the insureds, reinsureds or persons related thereto own (directly or indirectly through non-U.S. entities) shares of Aspen Holdings and are U.S. Persons. Aspen Holdings may not be able to determine whether any of the underlying direct or indirect insureds to which our non-U.S. insurance subsidiaries provide insurance or reinsurance are shareholders or related persons to such shareholders. Consequently, Aspen Holdings may not be able to determine accurately the gross amount of RPII earned by each of our non-U.S. insurance subsidiaries in a given taxable year. For any year in which the special RPII CFC inclusion rules apply, Aspen Holdings may also seek information from its shareholders as to whether beneficial owners of shares at the end of the year are U.S. Persons so that the RPII may be determined and apportioned among such persons; to the extent Aspen Holdings is unable to determine whether a beneficial owner of shares is a U.S. Person, Aspen Holdings may assume that such owner is not a U.S. Person, thereby increasing the per share RPII amount for all known RPII shareholders.

If, as expected, for each taxable year each non-U.S. insurance subsidiary meets the 20% Gross Income Exception, RPII shareholders will not be required to include RPII in their taxable income.

Basis Adjustments. A RPII shareholder’s tax basis in its shares will be increased by the amount of any RPII that the shareholder includes in income. The RPII shareholder may exclude from income the amount of any distributions by Aspen Holdings out of previously taxed RPII income. The RPII shareholder’s tax basis in its shares will be reduced by the amount of such distributions that are excluded from income.

Uncertainty as to Application of RPII. The RPII provisions have never been interpreted by the courts or the Treasury Department in final regulations, and regulations interpreting the RPII provisions of the Code exist only in proposed form. It is not certain whether these regulations will be adopted in their proposed form or what changes or clarifications might ultimately be made thereto or whether any such changes, as well as any interpretation or application of RPII by the IRS, the courts or otherwise, might have retroactive effect. These provisions include the grant of authority to the Treasury Department to prescribe “such regulations as may be necessary to carry out the purpose of this subsection, including ... regulations preventing the avoidance of this subsection through cross insurance arrangements or otherwise.” Accordingly, the meaning of the RPII provisions and the application thereof to our non-U.S. insurance subsidiaries is uncertain. In addition, we cannot be certain that the amount of RPII or the amounts of the RPII inclusions for any particular RPII shareholder, if any, will not be subject to adjustment based upon subsequent IRS examination. Any prospective investors considering an investment in our shares should consult his tax advisor as to the effects of these uncertainties.

Information Reporting. Under certain circumstances, U.S. Persons owning stock in a non-U.S. corporation are required to file IRS Form 5471 with their U.S. federal income tax returns. Generally, information reporting on IRS Form 5471 is required by (i)

a person who is treated as a RPII shareholder, (ii) a 10% U.S. Shareholder of a non-U.S. corporation that is a CFC at any time during the taxable year and who owned the stock on the last day of that year on which it was a CFC and (iii) under certain circumstances, a U.S. Person who acquires stock in a non-U.S. corporation and as a result thereof owns 10% or more of the voting power or value of such non-U.S. corporation, whether or not such non-U.S. corporation is a CFC. Aspen Holdings will provide to all U.S. Persons registered as shareholders of its shares the relevant information necessary to complete Form 5471 in the event Aspen Holdings determines this is necessary. Failure to file IRS Form 5471 may result in penalties.

Tax-Exempt Shareholders. Tax-exempt entities will be required to treat certain subpart F insurance income, including RPII, that is includable in income by the tax-exempt entity as unrelated business taxable income. Prospective investors that are tax exempt entities are urged to consult their tax advisors as to the potential impact of the unrelated business taxable income provisions of the Code. A tax-exempt organization that is treated as a 10% U.S. Shareholder or a RPII shareholder also must file IRS Form 5471 in the circumstances described above.

Redemption of Preference Shares. A redemption of the Preference Shares will be treated under Section 302 of the Code as a dividend if we have sufficient earnings and profits, unless the redemption satisfies one of the tests set forth in Section 302(b) of the Code enabling the redemption to be treated as a disposition (as discussed below), subject to the discussion herein relating to the potential application of the CFC, RPII and PFIC rules. Under the relevant Code Section 302(b) tests, the redemption generally will be treated as a sale or exchange only if it (1) is substantially disproportionate, (2) constitutes a complete termination of the holder's stock interest in us or (3) is "not essentially equivalent to a dividend." In determining whether any of these tests are met, shares considered to be owned by the holder by reason of certain constructive ownership rules set forth in the Code, as well as shares actually owned, must generally be taken into account. It may be more difficult for a U.S. Person who owns, actually or constructively by operation of the attribution rules, any of our other shares to satisfy any of the above requirements. The determination as to whether any of the alternative tests of Section 302(b) of the Code is satisfied with respect to a particular holder of the Preference Shares depends on the facts and circumstances as of the time the determination is made.

Dispositions of Preference Shares. Subject to the discussion above relating to redemptions and the discussions below relating to the potential application of the Code Section 1248 and PFIC rules, U.S. Persons that hold Preference Shares generally should recognize capital gain or loss for U.S. federal income tax purposes on the sale, exchange, redemption or other disposition of the Preference Shares in the same manner as on the sale, exchange, redemption or other disposition of any other shares held as capital assets. If the holding period for these shares exceeds one year, under current law any gain will be subject to tax at a current maximum marginal tax rate of 20% for individuals and 21% for corporations. Moreover, gain, if any, generally will be U.S. source gain and generally will constitute "passive category income" for foreign tax credit limitation purposes.

Code Section 1248 provides that if a U.S. Person sells or exchanges stock in a non-U.S. corporation and such person owned, directly, indirectly through certain non-U.S. entities or constructively, 10% or more of the voting power of the corporation at any time during the five-year period ending on the date of disposition when the corporation was a CFC, any gain from the sale or exchange of the shares will be treated as a dividend to the extent of the CFC's earnings and profits (determined under U.S. federal income tax principles) during the period that the shareholder held the shares and while the corporation was a CFC (with certain adjustments). We believe that because of the anticipated dispersion of our share ownership, no U.S. shareholder of Aspen Holdings should be treated as owning (directly, indirectly through non-U.S. entities or constructively) 10% or more of the total voting power or value of Aspen Holdings; to the extent this is the case, the application of Code Section 1248 under the regular CFC rules should not apply to dispositions of our shares. However, our shares may not be as widely dispersed as we believe due to, for example, the application of certain ownership attribution rules, and no assurance may be given that a U.S. Person who owns our shares will not be characterized as a 10% U.S. Shareholder, in which case such U.S. Person may be subject to taxation under the CFC rules.

A 10% U.S. Shareholder may in certain circumstances be required to report a disposition of shares of a CFC by attaching IRS Form 5471 to the U.S. federal income tax or information return that it would normally file for the taxable year in which the disposition occurs. In the event this is determined necessary, Aspen Holdings will provide the relevant information necessary to complete the Form.

Code Section 1248, in conjunction with the RPII rules, also applies to the sale or exchange of shares in a non-U.S. corporation if the non-U.S. corporation would be treated as a CFC for RPII purposes regardless of whether the shareholder is a 10% U.S. Shareholder or the 20% Gross Income Exception applies or whether the ownership of the non-U.S. corporation's shares by direct or indirect insureds and related persons is less than the 20% threshold. Existing proposed regulations do not address whether Code Section 1248 would apply if a non-U.S. corporation is not a CFC but the non-U.S. corporation has a subsidiary that is a CFC and that would be taxed as an insurance company if it were a domestic corporation. We believe, however, that this application of Code Section 1248 under the RPII rules should not apply to dispositions of Preference Shares because Aspen Holdings will not be directly engaged in the insurance business. We cannot be certain, however, that the IRS will not interpret the proposed regulations in a contrary manner or that the Treasury Department will not amend the proposed regulations to provide that these rules will apply to dispositions of Preference Shares. Prospective investors should consult their tax advisors regarding the effects of these rules on a disposition of Preference Shares.

Medicare Contribution Tax. A U.S. Person that is an individual, estate or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. Person's "net investment income" (or "undistributed net investment income" in the case of estates and trusts) for the relevant taxable year and (2) the excess of the U.S. Person's modified adjusted gross income for the taxable year over a certain threshold (which in the case of an individual will be between \$125,000 and \$250,000, depending on the individual's circumstances). A U.S. Person's net investment income will generally include its dividend income and its net gains from the disposition of Preference Shares, unless such dividend income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities).

Passive Foreign Investment Companies. In general, a non-U.S. corporation will be a PFIC during a given year if (i) 75% or more of its gross income constitutes "passive income" (the "75% test") or (ii) 50% or more of its assets produce (or are held for the production of) passive income (the "50% test").

If Aspen Holdings were characterized as a PFIC during a given year, each U.S. Person holding shares of Aspen Holdings would be subject to a penalty tax at the time of the sale at a gain of, or receipt of an "excess distribution" with respect to, their shares, unless such person is a 10% U.S. Shareholder subject to tax under the CFC rules or such person made a "qualified electing fund" election or "mark-to-market" election (which mark-to-market election would generally require the shareholder to include as ordinary income any appreciation in the value of its shares at the end of a taxable year and allow a shareholder to deduct any depreciation in the value of its shares (up to the amount of prior gain inclusions) at the close of the taxable year). It is uncertain that Aspen Holdings would be able to provide its shareholders with the information necessary for a U.S. Person to make a "qualified electing fund" election. In addition, if Aspen Holdings were considered a PFIC, upon the death of any U.S. individual owning shares, such individual's heirs or estate would not be entitled to a "step-up" in the basis of the shares that might otherwise be available under U.S. federal income tax laws. In general, a shareholder receives an "excess distribution" if the amount of the distribution is more than 125% of the average distribution with respect to the shares during the three preceding taxable years (or shorter period during which the taxpayer held the shares). In general, the penalty tax is equivalent to an interest charge on taxes that are deemed due during the period the shareholder owned the shares, computed by assuming that the excess distribution or gain (in the case of a sale) with respect to the shares was taken in equal portion at the highest applicable tax rate on ordinary income throughout the shareholder's period of ownership. The interest charge is equal to the applicable rate imposed on underpayments of U.S. federal income tax for such period. In addition, a distribution paid by Aspen Holdings to U.S. shareholders that is characterized as a dividend and is not characterized as an excess distribution would not be eligible for reduced rates of tax as qualified dividend income if Aspen Holdings were considered a PFIC in the taxable year in which such dividend is paid or in the preceding taxable year. A U.S. Person that is a shareholder in a PFIC may also be subject to additional information reporting requirements, including the filing of an IRS Form 8621.

For the above purposes, passive income generally includes interest, dividends, annuities and other investment income. The PFIC rules provide that income derived in the active conduct of an insurance business by a qualifying insurance corporation is not treated as passive income. The PFIC provisions also contain a look-through rule under which a foreign corporation shall be treated, for purposes of determining whether it is a PFIC, as if it "received directly its proportionate share of the income ..." and as if it "held its proportionate share of the assets ..." of any other corporation in which it owns at least 25% of the value of the stock (the "look-through rule"). Under the look-through rule, Aspen Holdings should be deemed to own its proportionate share of the assets and to have received its proportionate share of the income of its non-U.S. and U.S. insurance subsidiaries for purposes of the 75% test and the 50% test. However, the 2017 Act limits the insurance income exception to a non-U.S. insurance company that is a qualifying insurance corporation that would be taxable as an insurance company if it were a U.S. corporation and maintains insurance liabilities of more than 25% of such company's assets for a taxable year (or maintains insurance liabilities that at least equal or exceed 10% of its assets, is predominantly engaged in the insurance business and 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) (the "Reserve Test"). We believe that our non-U.S. insurance subsidiaries have met this Reserve Test and will continue to do so in the foreseeable future. However, no assurance may be given that our non-U.S. insurance subsidiaries will satisfy the Reserve Test in future years.

Further, the Treasury Department recently issued proposed regulations (the "2019 Proposed Regulations") intended to clarify the application of the insurance income 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 percent or more owned partnerships. The 2019 Proposed Regulations define insurance liabilities for purposes of the Reserve Test, tighten the Reserve Test and the statutory cap on insurance liabilities, provide guidance on the runoff-related and rating-related circumstances for purposes of the 10 percent test, and provide that a non-U.S. insurer will qualify for the insurance income 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 2019 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. The 2019 Proposed Regulations also introduce attribution rules that, taken together with other provisions of the regulations, could result in a U.S. Person that directly owns any shares in a non-PFIC being treated as an indirect shareholder of a lower tier PFIC subject to the general PFIC rules described herein. Although the 2019 Proposed Regulations will not be effective until adopted in final form, the IRS has announced that taxpayers may apply them to taxable years beginning after December 31, 2017 as if they were final regulations. We believe that, based on the implementation of our current business plan and the application of the look-through rule, none of the income and assets of our insurance subsidiaries should be treated as passive, and thus, we should not be characterized as a PFIC under current law, but because of the legal uncertainties as well as factual uncertainties with respect to our planned operations, there is a risk that we will be characterized as a PFIC for U.S. federal income tax purposes. In addition, because of the legal uncertainties relating to how the 2019 Proposed Regulations will be interpreted and the form in which such regulations may be finalized, no assurance can be given that we will not qualify as a PFIC under final IRS guidance or any legislative proposal that may be subsequently introduced and enacted. If we are considered a PFIC, it could have material adverse tax consequences for an investor that is subject to U.S. federal income taxation. Prospective investors should consult their tax advisors as to the effects of the PFIC rules.

U.S. investors are urged to consult with their tax advisors and to consider making a “protective” QEF election with respect to the Preference Shares to preserve the possibility of making a retroactive QEF election. A U.S. Person that makes a QEF election with respect to a PFIC is currently taxable on its pro rata share of the ordinary earnings and net capital gain of such company during the years it is a PFIC (at ordinary income and capital gain rates, respectively), regardless of whether or not distributions were received. In addition, any of the PFIC’s losses for a taxable year will not be available to U.S. Persons and may not be carried back or forward in computing the PFIC’s ordinary earnings and net capital gain in other taxable years. A U.S. Person generally increases the basis of its PFIC shares, and the basis of any other property of the U.S. Person by reason of which such U.S. Person is considered to indirectly own PFIC shares, by amounts included in such U.S. Person’s gross income pursuant to the QEF election. Therefore, an electing U.S. Person will generally increase the basis of its Preference Shares by amounts included in the U.S. Person’s gross income pursuant to the QEF election. Distributions of income that had previously been taxed pursuant to the QEF election will result in a corresponding reduction of basis in the Preference Shares and will not be taxed again as a distribution to the U.S. Person. A U.S. Person holding Preference Shares will generally be required to file an IRS Form 8621 (which is a form that is required to be filed by holders of equity in a PFIC) for each tax year that it holds Preference Shares and we are characterized as a PFIC, regardless of whether such U.S. Person has a QEF election in effect or receives an excess distribution.

Foreign Tax Credit. If U.S. Persons own a majority of our shares, only a portion of the current income inclusions, if any, under the CFC, RPII and PFIC rules and of dividends paid by us (including any gain from the sale of shares that is treated as a dividend under Section 1248 of the Code) will be treated as foreign source income for purposes of computing a shareholder’s U.S. foreign tax credit limitations. We will consider providing shareholders with information regarding the portion of such amounts constituting foreign source income to the extent such information is reasonably available. It is also likely that substantially all of the “subpart F income,” RPII and dividends that are foreign source income will constitute “passive category income” for foreign tax credit limitation purposes. Thus, it may not be possible for most shareholders to utilize excess foreign tax credits to reduce U.S. tax on such income.

Information Reporting and Backup Withholding on Distributions and Disposition Proceeds. Information returns may be filed with the IRS in connection with distributions on our shares and the proceeds from a sale or other disposition of our shares unless the holder of our shares establishes an exemption from the information reporting rules. A holder of shares that does not establish such an exemption may be subject to U.S. backup withholding tax on these payments if the holder is not a corporation or other exempt recipient or fails to provide its taxpayer identification number or otherwise comply with the backup withholding rules. The amount of any backup withholding from a payment to a U.S. Person will be allowed as a credit against the U.S. Person’s U.S. federal income tax liability and may entitle the U.S. Person to a refund, provided that the required information is furnished to the IRS.

Under Section 6038D of the Code, certain U.S. Persons who are individuals may be required to report information relating to an interest in Preference Shares, subject to certain exceptions (including an exception for Preference Shares held in accounts maintained by certain financial institutions). U.S. Persons should consult their tax advisors regarding the potential application of this information reporting requirement to their ownership of Preference Shares.

Interpretation of the 2017 Act and Possible Changes in U.S. Tax Law. It is possible that future regulatory and judicial interpretation of the 2017 Act, as well as any new legislation that may be introduced and enacted by the current Congress or future Congresses could have an adverse impact on us or holders of Preference Shares. Any such legislation could have a retroactive effect.

Additionally, the U.S. federal income tax laws and interpretations regarding whether a company is engaged in a trade or business within the United States or is a PFIC, or whether U.S. Persons would be required to include in their gross income the “subpart F

income” or the RPII of a CFC, are subject to change, possibly on a retroactive basis. The regulations regarding the application of the PFIC rules to insurance companies and the regulations regarding RPII are still in proposed form. New regulations or pronouncements interpreting or clarifying such rules may be forthcoming. We cannot be certain if, when or in what form such regulations or pronouncements may be provided and whether such guidance will have a retroactive effect.

Common Reporting Standard

The Common Reporting Standard (“CRS”) has been introduced as an initiative by the Organisation for Economic Co-operation and Development and is imposed on members of the European Union by the European Directive on Administrative Co-operation. Similar to the Foreign Account Tax Compliance Act introduced by the United States, the CRS requires financial institutions which are subject to the rules to report certain financial information in respect of account holders. The CRS became effective as of January 1, 2016 and E.U. member states generally began to exchange the required information pursuant to the CRS from the end of September 2017 onwards. A number of other jurisdictions also committed to joining the CRS in 2018. We intend to operate in compliance with CRS.

F. Dividends and paying agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

The Company maintains an internet site at www.aspen.co that contains Annual Reports on Form 20-F and Current Reports on Form 6-K filed or furnished with the U.S. Securities and Exchange Commission (“SEC”). Reports and other information we file with the SEC are also available on the internet site maintained by the SEC at www.sec.gov. Registration statements, reports and other information we file may be reviewed and copied at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, DC 20549. Copies of these documents may also be requested upon payment of a duplicating fee by writing to the SEC.

I. Subsidiary Information

Not applicable.

Item 11. Quantitative and Qualitative Disclosures about Market Risk

We believe we are principally exposed to three types of market risk: interest rate risk, foreign currency risk and credit risk.

Interest rate risk. Our investment portfolio consists primarily of fixed income securities. Fluctuations in interest rates have a direct impact on the market valuation of these securities. Accordingly, our primary market risk exposure is to changes in interest rates. As interest rates rise, the market value of our fixed-income portfolio falls and the converse is also true. We manage interest rate risk by maintaining a short to medium duration to reduce the effect of interest rate changes on book value. On January 16, 2019, Aspen Bermuda entered into a number of standard fixed for floating interest rate swaps with a total notional amount of \$3,318.0 million due to mature between January 18, 2021 and January 18, 2034. The total notional amount as at December 31, 2019 was \$1,800.0 million. Aspen Bermuda entered into the swaps in the ordinary course of its investment activities to partially mitigate any negative impact of rises in interest rates on the market value of our fixed income portfolio. For the twelve months ended December 31, 2019, there was a loss of \$130.2 million (December 31, 2018 — \$Nil).

As at December 31, 2019, initial and variation margin with a fair value of \$111.1 million was posted to a Futures Commission Merchant to support the current valuation of the interest rate swaps (December 31, 2018 — \$Nil). As at December 31, 2019, no non-cash collateral was transferred to the Company by its counterparties (December 31, 2018 — \$Nil). Transfers of margin are recorded on the consolidated balance sheet within Derivatives at Fair Value, while transfers in respect of non-cash collateral are disclosed but not recorded. As at December 31, 2019, no amount was recorded in the consolidated balance sheet for the pledged assets.

As at December 31, 2019, our fixed income portfolio had an approximate duration of 3.2 years excluding the duration impact of the interest rate swaps. The table below depicts interest rate change scenarios and the effect on our interest rate sensitive invested assets, excluding the impact of interest rate swaps:

Effect of Changes in Interest Rates on Portfolio Given a Parallel Shift in the Yield Curve					
Movement in Rates in Basis Points	-100	-50	0	50	100
	(\$ in millions, except percentages)				
Market Value ⁽¹⁾	6,773.5	6,668.5	6,563.5	6,458.5	6,353.5
Gain/Loss	210.0	105.0	—	(105.0)	(210.0)
Percentage of Portfolio	3.0%	1.5%	—	(1.5)%	(3.1)%
Corresponding percentage at December 31, 2018	3.5%	1.8%	—	(1.8)%	(3.5)%

(1) Market value includes our fixed income portfolio, short term investments and privately held investments.

Foreign currency risk. Our reporting currency is the U.S. Dollar. The functional currencies of our operations are U.S. Dollars, British Pounds, Euros, Swiss Francs, Australian Dollars, Canadian Dollars and Singaporean Dollars. As at December 31, 2019, approximately 86.0% of our cash and investments was held in U.S. Dollars (2018 — 88.3%), approximately 4.8% were in British Pounds (2018 — 5.3%) and approximately 9.2% were in currencies other than the U.S. Dollar and the British Pound (2018 — 6.5%). For the twelve months ended December 31, 2019, 15.9% of our gross premiums were written in currencies other than the U.S. Dollar and the British Pound (2018 — 16.7%) and we expect that a similar proportion will be written in currencies other than the U.S. Dollar and the British Pound in 2020.

Other foreign currency amounts are remeasured to the appropriate functional currency and the resulting foreign exchange gains or losses are reflected in the statement of operations. Functional currency amounts of assets and liabilities are then translated into U.S. Dollars. The unrealized gain or loss from this translation, net of tax, is recorded as part of ordinary shareholders' equity. The change in unrealized foreign currency translation gain or loss during the year, net of tax, is a component of comprehensive income. Both the remeasurement and translation are calculated using current exchange rates for the balance sheets and average exchange rates for the statement of operations. We may experience exchange losses to the extent that our foreign currency exposure is not properly managed or otherwise hedged which would in turn adversely affect our results of operations and financial condition. Management estimates that a 10% change in the exchange rate between British Pounds and U.S. Dollars as at December 31, 2019 would have impacted reported net comprehensive income by approximately \$9.2 million (2018 — \$15.9 million).

We will continue to manage our foreign currency risk by seeking to match our liabilities under insurance and reinsurance policies that are payable in foreign currencies with investments that are denominated in those currencies. This may involve the use of forward exchange contracts from time to time. A foreign exchange contract involves an obligation to purchase or sell a specified currency at a future date at a price set at the time of the contract. Foreign exchange contracts will not eliminate fluctuations in the value of our assets and liabilities denominated in foreign currencies but rather allow us to establish a rate of exchange for a future point in time.

As at December 31, 2019, we held foreign exchange contracts that were not designated as hedging under ASC 815, “*Derivatives and Hedging*” with an aggregate notional value of \$1,696.3 million (2018 — \$1,257.3 million). The foreign exchange contracts are recorded as derivatives at fair value in the balance sheet with changes recorded as a change in fair value of derivatives in the statement of operations. For the twelve months ended December 31, 2019, the impact of foreign exchange contracts on net income was a loss of \$14.0 million (December 31, 2018 — loss of \$31.8 million).

As at December 31, 2019, we held foreign exchange contracts that were designated as hedging under ASC 815 with an aggregate notional value of \$85.5 million (2018 — \$94.3 million). The foreign exchange contracts are recorded as derivatives at fair value in the balance sheet with the effective portion recorded in other comprehensive income and the ineffective portion recorded as a change in fair value of derivatives in the statement of operations. The contracts are considered to be effective and the movement in other comprehensive income representing the effective portion was a gain of \$4.8 million for the twelve months ended December 31, 2019 (December 31, 2018 — loss of \$2.1 million).

As the foreign exchange contracts settle, the realized gain or loss is reclassified from other comprehensive income into general, administration and corporate expenses of the statement of operations and other comprehensive income. For the twelve months ended December 31, 2019, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$0.9 million (December 31, 2018 — loss of \$1.2 million).

Credit risk. We have exposure to credit risk primarily as a holder of fixed income securities and private securities. Our risk management strategy and investment policy is to invest mainly in debt instruments of high credit quality issuers. We also invest a portion of the portfolio in securities that are below investment grade or in unrated private securities and other specialty asset

classes. We reduce the amount of credit exposure by setting limits with respect to particular ratings categories, business sectors and any one issuer. As at December 31, 2019, the average rating of fixed income maturities in our investment portfolio was “AA-” (December 31, 2018 — “AA-”).

In addition, we are exposed to the credit risk of our insurance and reinsurance brokers to whom we make claims payments for our policyholders, as well as to the credit risk of our reinsurers and retrocessionaires who assume business from us. Other than fully collateralized reinsurance, the substantial majority of our reinsurers have a rating of “A” (Excellent), the third highest of fifteen rating levels, or better by A.M. Best and the minimum rating of any of our material reinsurers is “A-” (Excellent), the fourth highest of fifteen rating levels, by A.M. Best. The total amount recoverable by the Company from reinsurers as at December 31, 2019 was \$2,319.8 million (2018 — \$2,077.6 million) of which \$1,817.5 million was uncollateralized (2018 — \$1,497.8 million). As at December 31, 2019, of the Company’s uncollateralized reinsurance recoverables, 15.1% (2018 — 15.7%) were with Munich Re which is rated A+ by A.M. Best and AA- by S&P, 11.9% (2018 — 10.2%) were with Everest Re which is rated A+ by A.M. Best and A+ by S&P, and 9.1% (2018 — 10.0%) were with MS & AD Group which is rated A+ by A.M. Best and A+ by S&P. These are the Company’s largest exposures to individual reinsurers. The Company has made no provision for doubtful debts from any of its reinsurers as at December 31, 2019.

Item 12. Description of Securities Other Than Equity Securities.

Not applicable.

PART II

Item 13. Defaults, Dividends Arrearages and Delinquencies

None.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

A. Disclosure Controls and Procedures

The Company, under the supervision and with the participation of the Company’s management, including the Company’s Chief Executive Officer and Chief Financial Officer, has evaluated the design and operation of the Company’s disclosure controls and procedures as of the end of the period of this report. Our management does not expect that our disclosure controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. As a result of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of persons or by collusion of two or more people. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. As a result of the inherent limitations in a cost-effective control system, misstatement due to error or fraud may occur and not be detected. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the disclosure requirements are met.

Based on the evaluation of the disclosure controls and procedures, the Company’s Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2019, solely as a result of the identified material weakness in internal controls identified below, the Company’s disclosure controls and procedures were ineffective in ensuring that information required to be disclosed in the reports filed or submitted to the SEC under the Exchange Act by the Company were recorded, processed, summarized and reported in a timely fashion, and were accumulated and communicated to management, including the Company’s Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

B. Management's Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is designed to provide reasonable assurance regarding the preparation of financial statements for external purposes in accordance with U.S. GAAP.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as is defined in Exchange Act Rule 13a-15(f) and as contemplated by Section 404 of the Sarbanes-Oxley Act. Our internal control system was 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. All internal control systems, no matter how well designed, have inherent limitations. These limitations include the possibility that judgments in decision-making can be faulty and that breakdowns can occur because of error or mistake. Therefore, any internal control system can provide only reasonable assurance and may not prevent or detect all misstatements or omissions. In addition, our evaluation of effectiveness is as of a particular point in time and there can be no assurance that any system will succeed in achieving its goals under all future conditions.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control - Integrated Framework (2013)*. Based on our assessment in accordance with the criteria, we believe that, solely as a result of the identified material weakness in internal controls described below, our internal controls over financial reporting were ineffective as at December 31, 2019. The consolidated financial statements included in this Form 20-F fairly represent in all material respects the financial condition, results of operations and cash flows of the Company for the periods presented. The identified material control weakness regarding additional ceded premiums is described below.

Additional Ceded Premiums. During the fourth quarter of 2019, the Company identified a control deficiency regarding the recording of adjustment premiums on certain excess of loss ceded reinsurance contracts. The deficiency resulted in a delay in the recognition of ceded premium adjustments for a limited number of excess of loss reinsurance contracts. The recognition of additional ceded premiums did not constitute a material adjustment in the current or prior periods.

A material weakness is a deficiency, or combination of deficiencies, in internal controls over financial reporting such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis. While the control deficiency regarding the recording of adjustment premiums for certain excess of loss ceded reinsurance contracts did not result in a material misstatement of the Company's financial statements, the Company's management, with the oversight of the Audit Committee of our Board of Directors, concluded that this control deficiency rose to the level of a material weakness given it had the potential to not detect a material amount of understated ceded adjustment or additional premiums to go undetected.

C. Changes in Internal Control Over Financial Reporting

Additional Ceded Premiums. To remediate the identified material weakness in our internal controls over financial reporting described above, we have initiated remedial measures and are taking additional measures to remediate the material weakness. In response to the above noted material weakness, we are increasing the scope of additional premium controls related to excess of loss reinsurance contracts, as well as enhancing controls around the documentation of adjustment premiums for ceded reinsurance contracts. Additionally, we are improving the segregation of responsibilities across the additional ceded premium process, which will add additional layers of management review. These controls will need to be in operation for a sufficient period of time before management has concluded, through testing, that these new controls are operating effectively. We expect that the testing of the new controls will be completed by the end of the fiscal year 2020.

Operating Leases. With effect from January 1, 2019, the Company has adopted the Financial Accounting Standards Board's revised lease accounting standard ASU 2016-2, Leases (Topic 842) which supersedes the leases requirements in Topic 840 and results in the Company recognizing right-of-use operating leased assets together with an operating lease liability on balance sheet. As part of adopting the above-mentioned lease standard, management has established models and a reporting framework, including internal controls over financial reporting, to enable the Company 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.

Privately-held Investments. During the course of 2019, as part of the Company's strategic asset allocation initiative, the Company has diversified its investment portfolio and now holds a portfolio of privately-held investments. The Company's privately-held investments primarily comprise commercial mortgage loans and middle market loans. All the Company's privately-held investments have either been placed via our investment manager Apollo Asset Management Europe PC LLP, or are investments directly or indirectly in companies or funds affiliated with Apollo. During the course of 2019, the Company established internal controls over financial reporting to ensure the accuracy, valuation and completeness of investment related disclosures. Additionally,

the Investment Committee has set investment guidelines, measurement metrics, and established a risk management framework which monitors privately-held investment both pre and post trade.

Management’s assessment of the overall effectiveness of our internal controls over financial reporting was based on the criteria set forth in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations (“COSO”) of the Treadway Commission. Based upon that evaluation, except as noted above, the Company’s management is not aware of any change in its internal control over financial reporting that occurred during the year ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

The Board has determined that Mr. Gordon Ireland is an independent director and audit committee financial expert in accordance with the NYSE listing rules.

Item 16B. Code of Ethics

Our Board has adopted a code of ethics entitled “Code of Business Conduct and Ethics” which applies to all of our employees, officers and directors. Copies of our Code of Business Conduct and Ethics can be found on our website at www.aspen.co and may be obtained in print, without cost, by writing to Aspen Insurance Holdings Limited, Attention: Company Secretary, 141 Front Street, Hamilton HM19, Bermuda. We intend to satisfy applicable disclosure requirements regarding amendments to, or waivers from, provisions of our Code of Conduct by posting such information on our website within five business days following the date of the amendment or waiver.

Item 16C. Principal Accountant Fees and Services

The following table represents aggregate fees billed to the Company by KPMG LLP (“KPMG”), London, England, the Company’s independent registered public accounting firm and auditor, for fiscal years ended December 31, 2019 and 2018:

	Twelve Months Ended December 31, 2019	Twelve Months Ended December 31, 2018
	(\$ in millions)	
Audit Fees ⁽¹⁾	\$ 3.90	\$ 4.25
Audit-Related Fees ⁽²⁾	0.19	0.26
Tax Fees ⁽³⁾	0.02	0.02
All Other Fees ⁽⁴⁾	0.13	0.08
Total Fees	\$ 4.24	\$ 4.61

- (1) Audit fees consist of fees paid to KPMG for professional services for the audit of the Company’s annual consolidated financial statements, review of quarterly consolidated financial statements, audit of annual statutory statements, and for services that are normally provided by independent auditors in connection with statutory, comfort letters, SEC and regulatory filings or engagements.
- (2) Audit-related fees consist of fees paid for assurance and related services for the performance of the audit or review of the Company’s financial statements (other than the audit fees disclosed above), such as the audit of Solvency II balance sheet and the 401(k) Plan.
- (3) Tax fees are fees related to tax compliance.
- (4) All other fees relate to fees billed to the Company by KPMG for non-audit services rendered to the Company in connection with claims advisory work and the review of booked loss and loss adjustment expense reserves for Aspen Specialty Insurance Company and Aspen American Insurance Company, two of the Company’s subsidiaries.

Item 16D. Exemptions from the Listing Standards for Audit Committee

None.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Item 16F. Change in Registrant’s Certifying Accountant

None.

Item 16G. Corporate Governance

As a foreign private issuer, we are entitled to follow the practice of our home country, Bermuda, with respect to certain corporate governance requirements rather than adhering to the corporate governance requirements that are applicable to U.S. issuers listed on the NYSE. Additionally, because 100% of our ordinary shares are owned by Parent and are not listed on the NYSE, we are a “controlled company” within the meaning of NYSE corporate governance standards. Controlled companies are also exempt from certain NYSE corporate governance standards.

Pursuant to Section 303.A.11 of the NYSE Listed Company Manual, we are required to list the significant differences between our corporate governance practices and the NYSE corporate governance standards applicable to U.S. issuers listed on the NYSE. Listed below are the significant differences:

- We do not have a majority of independent directors. The NYSE requires U.S. issuer listed companies to have a board of directors of at least a majority of independent directors. Controlled companies, however, are exempt from this requirement. Under Bermuda law and our Bye-Laws, we are not required to have a majority of independent directors.
- We do not have a nominating/corporate governance committee. Instead, the functions typically performed by such a committee are performed by the Board. The NYSE requires U.S. issuer listed companies to have a nominating/corporate governance committee composed entirely of independent directors and a committee charter detailing the committee’s purpose and responsibilities and an annual performance evaluation of the committee. Controlled companies, however, are exempt from this requirement. Under Bermuda law and our Bye-Laws, we are not required to have a nominating or corporate governance committee.
- We do not have Compensation Committee composed entirely of independent directors. The NYSE requires U.S. issuer listed companies to have a compensation committee composed entirely of independent directors and a committee charter detailing the committee’s purpose and responsibilities, an annual performance evaluation of the committee and the rights and responsibilities of the committee with respect to retaining or obtaining advice from an independent adviser. Controlled companies, however, are exempt from this requirement. Under Bermuda law and our Bye-Laws, we are not required to have a compensation committee composed entirely of independent directors. The members of our Compensation Committee are not independent directors, however, the Compensation Committee has a charter that is otherwise generally consistent with the NYSE’s compensation committee charter requirements.

Item 16H. Mine Safety Disclosure

Not applicable.

PART III

Item 17. Financial Statements

Refer to Item 18 of this report.

Item 18. Financial Statements**ASPEN INSURANCE HOLDINGS LIMITED**

CONSOLIDATED BALANCE SHEETS
As at December 31, 2019 and December 31, 2018
(\$ in millions, except share and per share amounts)

	<u>As at December 31, 2019</u>	<u>As at December 31, 2018</u>
ASSETS		
Investments:		
Fixed income maturities, available for sale (amortized cost — \$4,845.2 and \$5,282.3)	\$ 4,958.2	\$ 5,230.7
Fixed income maturities, trading at fair value (amortized cost — \$1,106.6 and \$1,205.0)	1,128.8	1,187.8
Short-term investments, available for sale (amortized cost — \$117.6 and \$105.6)	117.6	105.6
Short-term investments, trading at fair value (amortized cost — \$79.2 and \$9.5)	79.2	9.5
Catastrophe bonds, trading at fair value (cost — \$29.4 and \$37.9)	28.6	36.2
Privately-held investments, trading at fair value (amortized cost — \$279.2 and \$0)	279.7	—
Investments, equity method	67.9	67.1
Other investments	111.4	102.5
Total investments	<u>6,771.4</u>	<u>6,739.4</u>
Cash and cash equivalents (including cash within consolidated variable interest entities of — \$69.1 and \$26.9)	1,030.5	1,083.7
Reinsurance recoverables:		
Unpaid losses	2,319.8	2,077.6
Ceded unearned premiums	443.7	558.8
Receivables:		
Underwriting premiums	1,318.4	1,459.3
Other	114.3	121.2
Funds withheld	85.0	91.8
Deferred policy acquisition costs	291.1	248.5
Derivatives at fair value	12.9	14.6
Receivables for securities sold	5.1	3.2
Office properties and equipment	64.8	73.1
Right-of-use operating lease assets	93.5	—
Income tax recoverable	4.5	—
Deferred tax assets	—	35.4
Other assets	1.6	—
Intangible assets and goodwill	23.9	26.3
Total assets	<u><u>\$ 12,580.5</u></u>	<u><u>\$ 12,532.9</u></u>

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED BALANCE SHEETS
As at December 31, 2019 and December 31, 2018
(\$ in millions, except share and per share amounts)

	<u>As at December 31, 2019</u>	<u>At December 31, 2018</u>
LIABILITIES		
Insurance reserves		
Losses and loss adjustment expenses	\$ 6,951.8	\$ 7,074.2
Unearned premiums	1,737.7	1,709.1
Total insurance reserves	8,689.5	8,783.3
Payables		
Reinsurance premiums ⁽¹⁾	439.6	421.2
Income taxes payable	2.7	0.1
Accrued expenses and other payables	220.8	247.4
Payables for securities purchased	2.2	0.7
Operating lease liabilities	113.2	—
Liabilities under derivative contracts	87.2	15.1
Total payables	865.7	684.5
Long-term debt	299.8	424.7
Total liabilities	\$ 9,855.0	\$ 9,892.5
Commitments and contingent liabilities (see Note 20)	—	—
SHAREHOLDERS' EQUITY		
Ordinary shares:		
60,395,839 shares of par value \$.01 each (December 31, 2018 — 59,743,156 of par value 0.15144558¢ each)	\$ 0.6	\$ 0.1
Preference shares:		
11,000,000 5.950% shares of par value 0.15144558¢ each (December 31, 2018 — 11,000,000)	—	—
10,000,000 5.625% shares of par value 0.15144558¢ each (December 31, 2018 — 10,000,000)	—	—
10,000 5.625% shares of par value 0.15144558¢ each, represented by 10,000,000 depository shares, each representing 1/1000th interest in one preference share (December 31, 2018 — Nil)	—	—
Non-controlling interest	—	3.7
Additional paid-in capital	1,201.7	967.5
Retained earnings ⁽¹⁾	1,514.6	1,791.0
Accumulated other comprehensive income/(loss), net of taxes	8.6	(121.9)
Total shareholders' equity	2,725.5	2,640.4
Total liabilities and shareholders' equity	\$ 12,580.5	\$ 12,532.9

⁽¹⁾ Reinsurance premiums payables and retained earnings have been restated by \$15.6 million from January 1, 2017 to account for additional ceded premiums on excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior.

ASPEN INSURANCE HOLDINGS LIMITED

CONSOLIDATED STATEMENTS OF OPERATIONS AND OTHER COMPREHENSIVE INCOME
For The Twelve Months Ended December 31, 2019, 2018 and 2017
(\$ in millions, except share and per share amounts)

	Twelve Months Ended December 31,		
	2019	2018	2017
Revenues			
Net earned premium	\$ 2,293.3	\$ 2,214.7	\$ 2,306.6
Net investment income	197.3	198.2	189.0
Realized and unrealized investment gains	97.1	110.0	148.9
Other income	4.9	9.0	8.9
Total revenues	<u>2,592.6</u>	<u>2,531.9</u>	<u>2,653.4</u>
Expenses			
Losses and loss adjustment expenses	1,679.7	1,573.0	1,994.7
Amortization of deferred policy acquisition costs	412.7	371.6	400.5
General, administrative and corporate expenses	521.6	491.7	502.2
Interest on long-term debt	20.2	25.9	29.5
Change in fair value of derivatives	144.2	31.8	(27.7)
Change in fair value of loan notes issued by variable interest entities	3.1	4.4	(21.2)
Realized and unrealized investment losses	10.9	174.7	28.4
Realized loss on debt extinguishment	5.5	8.6	—
Net realized and unrealized foreign exchange losses	11.8	3.5	23.9
Other expenses	1.7	2.7	4.9
Total expenses	<u>2,811.4</u>	<u>2,687.9</u>	<u>2,935.2</u>
(Loss) from operations before income tax	(218.8)	(156.0)	(281.8)
Income tax (expense)/benefit	(22.9)	10.2	15.4
Net (loss)	<u>\$ (241.7)</u>	<u>\$ (145.8)</u>	<u>\$ (266.4)</u>
Amount attributable to non-controlling interest	1.2	(1.0)	(1.3)
Net (loss) attributable to Aspen Insurance Holdings Limited's ordinary shareholders	<u>\$ (240.5)</u>	<u>\$ (146.8)</u>	<u>\$ (267.7)</u>
Other Comprehensive Income/(Loss):			
Available for sale investments:			
Reclassification adjustment for net realized (losses)/gains on investments included in net income	\$ (6.8)	\$ 5.2	\$ (4.0)
Change in net unrealized gains/(losses) on available for sale securities held	171.7	(86.5)	(10.8)
Net change from current period hedged transactions	4.8	(2.1)	3.0
Change in foreign currency translation adjustment	(28.0)	21.5	(56.4)
Other comprehensive income/(loss), gross of tax	<u>141.7</u>	<u>(61.9)</u>	<u>(68.2)</u>
Income tax thereon:			
Reclassification adjustment for net realized losses on investments included in net income	—	(0.7)	0.4
Change in net unrealized gains on available for sale securities held	(13.6)	5.5	1.6
Net change from current period hedged transactions	(0.8)	0.3	(0.4)
Change in foreign currency translation adjustment	3.2	(9.2)	15.8
Total income tax on other comprehensive income/(loss)	<u>(11.2)</u>	<u>(4.1)</u>	<u>17.4</u>
Other comprehensive income/(loss), net of tax	<u>130.5</u>	<u>(66.0)</u>	<u>(50.8)</u>
Total comprehensive (loss) attributable to Aspen Insurance Holdings Limited's ordinary shareholders	<u>\$ (110.0)</u>	<u>\$ (212.8)</u>	<u>\$ (318.5)</u>

ASPEN INSURANCE HOLDINGS LIMITED

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
For The Twelve Months Ended December 31, 2019, 2018 and 2017

(\$ in millions)

	Twelve Months Ended December 31,		
	2019	2018	2017
Ordinary shares			
Beginning of the year	\$ 0.1	\$ 0.1	\$ 0.1
Ordinary shares canceled	(0.1)	—	—
New ordinary shares issued	\$ 0.6	\$ —	\$ —
End of the year	<u>0.6</u>	<u>0.1</u>	<u>0.1</u>
Preference shares			
Beginning and end of the year	—	—	—
Non-controlling interest			
Beginning of the year	3.7	2.7	1.4
Net change attributable to non-controlling interest for the year	(1.2)	1.0	1.3
Minority interest buy-out	(2.5)	—	—
End of the year	<u>—</u>	<u>3.7</u>	<u>2.7</u>
Additional paid-in capital			
Beginning of the year	967.5	954.7	1,259.6
New ordinary shares issued	0.8	2.7	0.5
Ordinary shares repurchased and canceled	—	—	(30.0)
Preference shares issued	241.6	—	—
Preference shares redeemed and canceled	—	—	(293.2)
Preference share redemption costs ⁽¹⁾	—	—	8.0
Share-based compensation ⁽²⁾	(9.9)	10.1	9.8
Minority interest consideration	(0.8)	—	—
Minority interest buy-out	2.5	—	—
End of the year	<u>1,201.7</u>	<u>967.5</u>	<u>954.7</u>
Retained earnings			
Beginning of the year ⁽³⁾	1,791.0	2,011.3	2,376.7
Net (loss) for the year	(241.7)	(145.8)	(266.4)
Dividends on ordinary shares	—	(42.9)	(56.2)
Dividends on preference shares	(35.9)	(30.5)	(36.2)
Preference share redemption costs ⁽¹⁾	—	—	(8.0)
Net change attributable to non-controlling interest for the year	1.2	(1.0)	(1.3)
Dividends due to non-controlling interest	—	(0.1)	(0.1)
Share-based payment ⁽⁴⁾	—	—	2.8
End of the year	<u>1,514.6</u>	<u>1,791.0</u>	<u>2,011.3</u>
Accumulated other comprehensive income:			
Cumulative foreign currency translation adjustments, net of taxes:			
Beginning of the year	(55.4)	(67.7)	(27.1)
Change for the year, net of income tax	(24.8)	12.3	(40.6)
End of the year	<u>(80.2)</u>	<u>(55.4)</u>	<u>(67.7)</u>
Gain/(loss) on derivatives, net of taxes:			
Beginning of the year	0.3	2.1	(0.5)
Net change from current period hedged transactions	4.0	(1.8)	2.6
End of the year	<u>4.3</u>	<u>0.3</u>	<u>2.1</u>
Unrealized appreciation on available for sale investments, net of taxes:			
Beginning of the year	(66.8)	9.7	22.5
Change for the year, net of taxes	151.3	(76.5)	(12.8)
End of the year	<u>84.5</u>	<u>(66.8)</u>	<u>9.7</u>
Total accumulated other comprehensive income/(loss), net of taxes	<u>8.6</u>	<u>(121.9)</u>	<u>(55.9)</u>
Total shareholders' equity	<u>\$ 2,725.5</u>	<u>\$ 2,640.4</u>	<u>\$ 2,912.9</u>

⁽¹⁾ The \$8.0 million deduction from net income in 2017 is attributable to the reclassification from additional paid-in capital to retained earnings representing the difference between the capital raised upon issuance of the 7.401% and 7.250% Perpetual Non-Cumulative Preference Shares, net of issuance costs, and the final redemption costs of \$293.2 million.

⁽²⁾ The balance in 2017 includes \$7.9 million reclassification from accrued expenses and other payable as a result of the classification of restricted share units as equity following the adoption of ASU 2016-09 "Compensation — Stock Compensation". The balance in 2018 of \$10.1 million is a reclassification from accrued expenses and other payables as a result of the net settlement of restricted share units following the adoption of ASU 2016-09. The balance in 2019 of \$(9.9) million relates to the reclassification between additional paid-in capital to accrued expenses and other payables as a result of the net settlement of taxes on restricted share units.

⁽³⁾ Retained earnings have been restated by \$15.6 million from January 1, 2017 to account for additional ceded premiums on excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior.

⁽⁴⁾ The \$2.8 million relates to the cumulative effect-adjustment to opening retained earnings as a result of the classification of restricted share units as equity following the adoption of ASU 2016-09. The adjustment has been applied using a modified retrospective approach.

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For The Twelve Months Ended December 31, 2019, 2018 and 2017
(\$ in millions)

	Twelve Months Ended December 31,		
	2019	2018	2017
Cash flows (used in)/from operating activities:			
Net (loss)	\$ (241.7)	\$ (145.8)	\$ (266.4)
Proportion due to non-controlling interest	1.2	(1.0)	(1.3)
Adjustments to reconcile net income to net cash flows from operating activities:			
Depreciation and amortization	39.8	43.4	62.2
Impairment of lease assets	12.3	—	—
Amortization of right-to-use operating lease assets	13.4	—	—
Interest on operating lease liabilities	4.6	—	—
Share-based compensation	—	10.1	9.8
Realized and unrealized investment (gains)	(97.1)	(110.0)	(148.9)
Realized and unrealized investment losses	10.9	174.7	28.4
Deferred tax expense/(benefit)	24.7	(7.1)	(32.5)
Change in fair value of loan notes issued by variable interest entities	3.1	4.4	(21.2)
Net realized and unrealized investment foreign exchange (gains)/losses	28.1	(0.8)	(15.0)
Net change from current period hedged transactions	4.8	(1.8)	2.6
Changes in:			
Insurance reserves:			
Losses and loss adjustment expenses	(203.0)	402.5	1,292.2
Unearned premiums	18.0	(91.6)	174.1
Reinsurance recoverables:			
Unpaid losses	(236.3)	(575.8)	(943.7)
Ceded unearned premiums	116.0	(44.8)	(257.6)
Other receivables	(0.4)	29.9	(48.2)
Deferred policy acquisition costs	(41.1)	41.7	69.4
Reinsurance premiums payable	19.5	52.1	23.8
Funds withheld	6.8	8.0	(26.7)
Premiums receivable	144.8	31.6	(88.7)
Income tax payable	(1.2)	1.6	15.9
Accrued expenses and other payable	(19.3)	(88.2)	147.0
Fair value of derivatives and settlement of liabilities under derivatives	73.8	5.9	(16.6)
Long-term debt and loan notes issued by variable interest entities	0.1	(44.0)	(70.6)
Operating lease liabilities	(18.0)	—	—
Other assets	(1.6)	0.5	0.5
Net cash (used in) operating activities	\$ (337.8)	\$ (304.5)	\$ (111.5)

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For The Twelve Months Ended December 31, 2019, 2018 and 2017
(\$ in millions)

	Twelve Months Ended December 31,		
	2019	2018	2017
Cash flows from/(used in) investing activities:			
(Purchases) of fixed income securities — Available for sale	\$ (1,650.7)	\$ (1,785.6)	\$ (1,573.2)
(Purchases) of fixed income securities — Trading	(1,169.1)	(1,260.9)	(1,312.9)
Proceeds from sales and maturities of fixed income securities — Available for sale	2,105.3	1,647.1	2,018.8
Proceeds from sales and maturities of fixed income securities — Trading	1,302.7	1,661.0	957.6
(Purchases) of equity securities — Trading	—	(16.5)	(131.3)
Net proceeds of catastrophe bonds — Trading	7.5	(4.1)	7.4
Proceeds from sales of equity securities — Trading	—	505.6	316.3
(Purchases) of short-term investments — Available for sale	(182.7)	(130.8)	(130.7)
Proceeds from sale of short-term investments — Available for sale	159.0	113.2	189.5
(Purchases) of short-term investments — Trading	(193.6)	(16.4)	(96.0)
Proceeds from sale of short-term investments — Trading	141.1	78.9	212.0
(Purchases) of privately-held investments — Trading	(287.3)	—	—
Proceeds from sale of privately-held investments — Trading	9.8	—	—
Net change in (payable)/receivable for securities (purchased)/sold	(0.4)	(5.5)	(9.9)
(Purchases) of other investments — real estate fund	—	(100.0)	—
Net proceeds in (purchases)/sales from other investments	—	—	(0.5)
(Net) purchases of equipment	(22.2)	(27.3)	(35.0)
Sale of investment	—	—	9.3
Net (purchases) of investments, equity method	(1.1)	(1.4)	(2.4)
Net cash from/(used in) investing activities	218.3	657.3	419.0
Cash flows from/(used in) financing activities:			
Proceeds from the issuance of ordinary shares, net of issuance costs	1.4	2.7	0.5
Ordinary shares canceled	(0.1)	—	(30.0)
Preference share issuance	241.6	—	—
Preference share (redemption)	—	—	(293.2)
Minority interest buy-out	(0.8)	—	—
Repayment of long-term debt issued by Silverton	(7.7)	(86.4)	(115.6)
Dividends paid on ordinary shares	—	(42.9)	(56.2)
Dividends paid on preference shares	(35.9)	(30.5)	(36.2)
Dividends paid to non-controlling interest	—	(0.1)	(0.1)
Contingent consideration - earn out provision settlement	—	(11.7)	—
Long-term debt redeemed	(125.0)	(125.0)	—
Make-whole payment	(5.5)	(8.6)	—
Cash paid for tax withholding purposes ⁽¹⁾	(2.8)	(4.7)	(9.6)
Net cash from/(used in) financing activities	65.2	(307.2)	(540.4)
Effect of exchange rate movements on cash and cash equivalents	1.1	(16.7)	13.9
Decrease/increase in cash and cash equivalents	(53.2)	28.9	(219.0)
Cash and cash equivalents at beginning of period	1,083.7	1,054.8	1,273.8
Cash and cash equivalents at end of period	\$ 1,030.5	\$ 1,083.7	\$ 1,054.8
Supplemental disclosure of cash flow information:			
Net cash (received)/paid during the period for income tax	\$ (4.7)	\$ (0.3)	\$ 3.4
Cash paid during the period for interest	\$ 19.0	\$ 25.3	\$ 29.0

⁽¹⁾ The cash paid to the tax authority when withholding shares from employees' awards for tax-withholding purposes has been reclassified from operating activity to financing activity following the adoption of ASU 2016-09 - "Compensation — Stock Compensation".

ASPEN INSURANCE HOLDINGS LIMITED

NOTES TO THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS

For The Twelve Months Ended December 31, 2019, 2018 and 2017

(\$ in millions, except share and per share amounts)

1. History, Organization and Business Combination

History and Organization. Aspen Insurance Holdings Limited (“Aspen Holdings”) was incorporated on May 23, 2002 as a holding company headquartered in Bermuda. We underwrite specialty insurance and reinsurance on a global basis through our Operating Subsidiaries (as defined below) based in Bermuda, the United States and the United Kingdom: Aspen Insurance UK Limited (“Aspen U.K.”) and Aspen Underwriting Limited (“AUL”) (as corporate member of our Lloyd’s operations, which are managed by Aspen Managing Agency Limited (“AMAL”)), Aspen Bermuda Limited (“Aspen Bermuda”), Aspen Specialty Insurance Company (“Aspen Specialty”) and Aspen American Insurance Company (“AAIC”) (each referred to herein an “Operating Subsidiary” and collectively referred to as the “Operating Subsidiaries”). We also have branches in Australia, Canada, Singapore and Switzerland. We established Aspen Capital Management, Ltd. and other related entities (collectively, “ACM”) to leverage our existing underwriting franchise, increase our operational flexibility in the capital markets and provide investors direct access to our underwriting expertise. References to the “Company,” the “Group,” “we,” “us” or “our” refer to Aspen Holdings or Aspen Holdings and its consolidated subsidiaries.

Business Combination. On February 15, 2019, the Company completed its merger with Highlands Merger Sub, Ltd. (“Merger Sub”), a wholly owned subsidiary of Highlands Holdings, Ltd. (“Parent”). Merger Sub merged with and into the Company (the “Merger”), with the Company continuing as the surviving company and as a wholly owned subsidiary of Parent. Parent, a Bermuda exempted company, is an affiliate of certain investment funds managed by affiliates of Apollo Global Management, Inc., a leading global investment manager (collectively with its subsidiaries, “Apollo”).

As a result of the Merger, all of the Company’s publicly traded ordinary shares were automatically canceled and converted into the right to receive \$42.75 in cash, without interest and less any required tax withholdings. The ordinary shares of the Company ceased trading on the New York Stock Exchange (“NYSE”) prior to the opening of trading on February 15, 2019. The Company’s preference shares and depositary shares continue to be listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE.

Pursuant to the terms of the Merger Agreement, the memorandum of association and bye-laws of Merger Sub immediately prior to the effective time of the Merger became the memorandum of association and bye-laws, respectively, of the Company at the effective time of the Merger and will remain the memorandum of association (the “Altered Memorandum of Association”) and bye-laws, respectively, of the Company, until changed or amended as provided therein or pursuant to applicable law. The Company’s authorized share capital, as set out in the Altered Memorandum of Association, is 745,434 divided into 70,000,000 ordinary shares of par value \$0.01 and 30,000,000 preference shares of par value 0.15144558¢. Immediately prior to the effective time of the Merger, Parent held 60,395,839 of ordinary shares of Merger Sub, par value \$0.01. Pursuant to the terms of the Merger Agreement, each common share of Merger Sub issued and outstanding immediately prior to the effective time of the Merger was canceled and converted into and became one duly authorized, validly issued, fully paid and non-assessable ordinary share, par value of \$0.01, of the Company, as the surviving company.

Each of the Company’s issued and outstanding 5.950% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares and 5.625% Perpetual Non-Cumulative Preference Shares (collectively, the “Preference Shares”) remained issued and outstanding following the Merger, listed on the NYSE and entitled to the same dividend and all other preferences, privileges, rights, qualifications, limitations and restrictions set forth in the applicable certificate of designation.

Additional information about the Merger is set forth in the Company’s Current Report on Form 8-K filed with the United States Securities and Exchange Commission (the “SEC”) on February 15, 2019 and the exhibits thereto, and on August 28, 2018 and the exhibits thereto, including the Merger Agreement, and the Company’s definitive proxy statement on Schedule 14A filed with the SEC on November 6, 2018.

2. Basis of Presentation and Significant Accounting Policies

The consolidated financial statements of Aspen Holdings are prepared in accordance with United States Generally Accepted Accounting Principles (“U.S. GAAP”) and are presented on a consolidated basis including the transactions of all operating subsidiaries in which the Company has a controlling financial interest and variable interest entities (“VIE”) in which the Company is considered to be the primary beneficiary. Transactions between Aspen Holdings and its subsidiaries are eliminated within the consolidated financial statements.

(a) Use of Estimates

Assumptions and estimates made by management have a significant effect on the amounts reported within the consolidated financial statements. The most significant of these relate to losses and loss adjustment expenses, reinsurance recoverables, gross written premiums and commissions which have not been reported to the Company such as those relating to proportional treaty reinsurance contracts, unrecognized tax benefits, the fair value of derivatives and the fair value of other and privately-held investments. All material assumptions and estimates are regularly reviewed and adjustments made as necessary but actual results could be significantly different from those expected when the assumptions or estimates were made.

(b) Accounting for Insurance and Reinsurance Operations

Premiums Earned. Premiums are recorded as written on the inception date of a policy. Premiums are primarily recognized as revenues proportionately over the coverage period. Premiums earned are recorded in the statements of operations, net of the cost of purchased reinsurance. Premiums written which are not yet recognized as earned premium are recorded in the consolidated balance sheet as unearned premiums, gross of any ceded unearned premiums. Written and earned premiums and the related costs include estimates for premiums which have not been finally determined. These relate mainly to contractual provisions for the payment of adjustment or additional premiums, premiums payable under proportional treaties and delegated underwriting authorities, and reinstatement premiums.

Adjustment and additional premiums are premiums charged which relate to experience during the policy term. The proportion of adjustable premiums included in the premium estimates varies between business lines with the largest adjustment premiums being in property and casualty reinsurance, marine, aviation and energy insurance and the smallest in property and casualty insurance.

Premiums under proportional treaty contracts and delegated underwriting authorities are generally not reported to the Company until after the reinsurance coverage is in force. As a result, an estimate of these “pipeline” premiums is recorded. The Company estimates pipeline premiums based on projections of ultimate premium taking into account reported premiums and expected development patterns.

Reinstatement premiums on assumed excess of loss reinsurance contracts are provided based on experience under such contracts. Reinstatement premiums are the premiums charged for the restoration of the reinsurance limit of an excess of loss contract to its full amount after payment by the reinsurer of losses as a result of an occurrence. Reinstatement premiums are recognized as revenue in full at the date of loss, triggering the payment of the reinstatement premiums. Reinstatement premiums provide future insurance cover for the remainder of the initial policy term. An allowance for uncollectible premiums is established for possible non-payment of premium receivables, as deemed necessary.

Outward reinsurance premiums, which are paid when the Company purchases reinsurance or retrocessional coverage, are accounted for using the same accounting methodology as the Company uses for inwards premiums. Premiums payable under reinsurance contracts that operate on a “losses occurring during” basis are accounted for in full over the period of coverage while those arising from “risks attaching during” policies are expensed over the earnings period of the underlying premiums receivable from the reinsured business. Adjustment premiums and reinstatement premiums in relation to outward reinsurance are accrued when it is determined that the ultimate losses will trigger a payment and recognized within premiums payable. Premiums payable for retroactive reinsurance coverage and meeting the conditions of reinsurance accounting are reported as reinsurance recoverables to the extent that those amounts do not exceed recorded liabilities relating to underlying reinsurance contracts. To the extent that recorded liabilities on an underlying reinsurance contract exceed premiums payable for retroactive coverage, a deferred gain is recognized.

Losses and Loss Adjustment Expenses. Losses represent the amount paid or expected to be paid to claimants in respect of events that have occurred on or before the balance sheet date. The costs of investigating, resolving and processing these claims are known as loss adjustment expenses (“LAE”). The statement of operations records these losses net of reinsurance, meaning that gross losses and loss adjustment expenses incurred are reduced by the amounts recovered or expected to be recovered under reinsurance contracts.

Reinsurance. Written premiums, earned premiums, incurred claims, LAE and the amortization of deferred policy acquisition costs all reflect the net effect of assumed and ceded reinsurance transactions. Assumed reinsurance refers to the Company’s acceptance of certain insurance risks that other insurance companies have underwritten. Ceded reinsurance arises from contracts under which other insurance companies agree to share certain risks with the Company.

Reinsurance accounting is followed when there is significant timing risk, significant underwriting risk and a reasonable possibility of significant loss. Reinsurance and retrocession does not isolate the ceding company from its obligations to policyholders. In the event that a reinsurer or retrocessionaire fails to meet its obligations, the ceding company’s obligations remain. The Company regularly evaluates the financial condition of its reinsurers and retrocessionaires and monitors the concentration of credit risk to minimize its exposure to financial loss from reinsurers’ and retrocessionaires’ insolvency. Where it is considered required, appropriate provision is made for balances deemed irrecoverable from reinsurers.

Reserves. Insurance reserves are established for the total unpaid cost of claims and LAE in respect of events that have occurred by the balance sheet date, including the Company's estimates of the total cost of claims incurred but not yet reported ("IBNR"). Claim reserves are reduced for estimated amounts of salvage and subrogation recoveries. Estimated amounts recoverable from reinsurers on unpaid losses and LAE are reflected as assets.

For reported claims, reserves are established on a case-by-case basis within the parameters of coverage provided in the insurance policy or reinsurance agreement. For IBNR claims, reserves are estimated using a number of established actuarial methods to establish a range of estimates from which a management best estimate is selected. Both case and IBNR reserve estimates consider variables such as past loss experience, changes in legislative conditions, changes in judicial interpretation of legal liability, policy coverages and inflation.

As many of the coverages underwritten involve claims that may not be ultimately settled for many years after they are incurred, subjective judgments as to the ultimate exposure to losses are an integral and necessary component of the loss reserving process. The Company regularly reviews its reserves, using a variety of statistical and actuarial techniques to analyze current claims costs, frequency and severity data, and prevailing economic, social and legal factors. Reserves established in prior periods are adjusted as claim experience develops and new information becomes available. Adjustments to previously estimated reserves are reflected in the financial results of the period in which the adjustments are made.

The process of estimating required reserves does, by its very nature, involve considerable uncertainty. The level of uncertainty can be influenced by factors such as the existence of coverage with long duration payment patterns and changes in claims handling practices, as well as the factors noted above. Ultimate actual payments for claims and LAE could turn out to be significantly different from the Company's estimates.

Amortization of Deferred Policy Acquisition Costs. The costs directly related to writing an insurance policy are referred to as policy acquisition expenses and include commissions, premium taxes and profit commissions. With the exception of profit commissions, these expenses are incurred when a policy is issued, and only the costs directly related to the successful acquisition of new and renewal insurance and reinsurance contracts are deferred and amortized over the same period as the corresponding premiums are recorded as revenues. Profit commissions are estimated based on the related performance criteria evaluated at the balance sheet date, with subsequent changes to those estimates recognized when they occur.

On a regular basis a recoverability analysis is performed of the deferred policy acquisition costs in relation to the expected recognition of revenues, including anticipated investment income, and adjustments, if any, are reflected as period costs. Should the analysis indicate that the acquisition costs are unrecoverable, further analyses are performed to determine if a reserve is required to provide for losses which may exceed the related unearned premium.

General, Administrative and Corporate Expenses. These costs represent the expenses incurred in running the business and include, but are not limited to compensation costs for employees, rental costs, IT development and operating costs and professional and consultancy fees. General, policy and administrative costs directly attributable to the successful acquisition of business are deferred and amortized over the same period as the corresponding premiums are recorded as revenues. When reporting the results for its business segments, the Company includes expenses which are directly attributable to the segment plus an allocation of central administrative costs. Corporate expenses are not allocated to the Company's business segments as they typically do not fluctuate with the levels of premium written and are related to the Company's operations which include group executive costs, group finance costs, group legal and actuarial costs and certain strategic and other costs.

(c) Accounting for Investments, Cash and Cash Equivalents

Fixed Income Securities. The fixed income securities portfolio comprises securities issued by governments and government agencies, corporate bonds, mortgage and other asset-backed securities and bank loans. Investments in fixed income securities are classified as available for sale or trading and are reported at estimated fair value in the consolidated balance sheet. Investment transactions are recorded on the trade date with balances pending settlement reflected in the consolidated balance sheet under receivables for securities sold and accrued expenses and other payables for securities purchased, respectively. Fair values are based on quoted market prices and other data provided by third-party pricing services.

Short-term Investments. Short-term investments primarily comprise highly liquid debt securities with a maturity greater than three months but less than one year from the date of purchase and are held as part of the investment portfolio of the Company. Short-term investments are classified as either trading or available for sale and carried at estimated fair value.

Catastrophe Bonds. Investments in catastrophe bonds are classified as trading and are carried on the consolidated balance sheet at estimated fair value. The fair values are based on independent broker-dealer quotes.

Privately-held Investments. The Company's privately-held investments primarily comprise commercial mortgage loans and middle market loans. These investments are classified as trading and are carried on the consolidated balance sheet at estimated fair value. Privately-held investments are initially valued at cost or transaction value which approximates fair value. In subsequent measurement periods, the fair values of these securities are primarily determined using internally developed discounted cash flow models. Interest income is accrued on the principal amount of the loan based on its contractual interest rate subject to it being

probable that we will receive interest on that particular underlying loan. Interest income, amortization of premiums and discounts, and prepayment fees are reported in net investment income on the consolidated statements of income.

Other Investments, Equity Method. Other investments represent the Company's investments that are recorded using the equity method of accounting. Adjustments to the fair value of these investments are made based on the net asset value of the investment.

Other investments. Other investments represent the Company's investment in a real estate fund. Adjustments to the fair value are made based on the net asset value of the investment.

Cash and Cash Equivalents. Cash and cash equivalents are carried at fair value. Cash and cash equivalents comprise cash on hand, deposits held on call with banks and other short-term highly liquid investments due to mature within three months from the date of purchase and which are subject to insignificant risk of change in fair value.

Gains and Losses. Realized gains or losses on the sale of investments are determined on the basis of the first in first out cost method and, for fixed income available for sale securities, include adjustments to the cost basis of investments for declines in value that are considered to be other-than-temporary. Unrealized gains and losses represent the difference between the cost, or the cost as adjusted by amortization of any difference between its cost and its redemption value ("amortized cost"), of the security and its fair value at the reporting date and are included within other comprehensive income for securities classified as available for sale and in realized and unrealized investment gains or losses in the consolidated statement of operations for securities classified as trading.

Other-than-temporary Impairment of Investments. A security is impaired when its fair value is below its cost or amortized cost. The Company reviews its investment portfolio each quarter on an individual security basis for potential other-than-temporary impairment ("OTTI") based on criteria including issuer-specific circumstances, credit ratings actions and general macro-economic conditions.

OTTI is deemed to occur when there is no objective evidence to support recovery in value of a security and (i) the Company intends to sell the security or more likely than not will be required to sell the security before recovery of its cost or adjusted amortized cost basis or (ii) it is deemed probable that the Company will be unable to collect all amounts due according to the contractual terms of the individual security. In the first case, the entire unrealized loss position is taken as an OTTI charge to realized losses in earnings. In the second case, the unrealized loss is separated into the amount related to credit loss and the amount related to all other factors. The OTTI charge related to credit loss is recognized in realized losses in earnings and the amount related to all other factors is recognized in other comprehensive income. The cost basis of the investment is reduced accordingly and no adjustments to the cost basis are made for subsequent recoveries in value.

Although the Company reviews each security on a case by case basis, it has also established parameters focusing on the extent and duration of impairment to help identify securities in an unrealized loss position which are other-than-temporarily impaired. For fixed income securities in the available for sale portfolio, the Company considers securities which have been in an unrealized loss position for 12 months or more which currently have a market value of more than 20% below cost should be other-than-temporarily impaired.

Investment Income. Investment income includes amounts received and accrued in respect of periodic interest ("coupons") payable to the Company by the issuer of fixed income securities, equity dividends and interest credited on cash and cash equivalents. It also includes amortization of premium and accretion of discount in respect of fixed income securities. Investment management and custody fees are charged against net investment income reported in the consolidated statement of operations.

(d) Accounting for Derivative Financial Instruments

The Company enters into derivative instruments such as interest rate swaps and forward exchange contracts in order to manage certain market and credit risks. The Company records derivative instruments at fair value on the Company's balance sheet as either assets or liabilities, depending on their rights and obligations.

The accounting for the gain or loss due to the changes in the fair value of these instruments is dependent on whether the derivative qualifies as a hedge. If the derivative does not qualify as a hedge, the gains or losses are reported in earnings when they occur. If the derivative does qualify as a hedge, the accounting treatment varies based on the type of risk being hedged.

(e) Accounting for Intangible Assets

Intangible assets are held in the consolidated balance sheet at cost less amortization and impairment. Amortization applies on a straight-line basis in respect of assets having a finite estimated useful economic life. The Company performs a qualitative assessment annually to determine whether it is more likely than not that an intangible asset considered to have an indefinite life is impaired. Goodwill is assessed annually for impairment or more frequently if circumstances indicate an impairment may have occurred.

(f) Accounting for Office Properties and Equipment

Office properties and equipment are carried at cost less accumulated depreciation. These assets are depreciated on a straight-line basis over the estimated useful lives of the assets. Computer equipment and software is depreciated between three and five years with depreciation for software commencing on the date the software is brought into use. Furniture and fittings are depreciated over four years and leasehold improvements are depreciated over the lesser of 15 years or the lease term.

(g) Accounting for Right-of-Use Operating Lease Assets

Right-of-use operating lease assets comprise primarily of leased office real estate and other assets. For all office real estate leases, rent incentives, including reduced-rent and rent free periods and contractually agreed rent increases during the lease term, have been included when determining the present value of future cash flows. Right-of-use operating leased assets are carried at cost less accumulated depreciation. Right-of-use operating leased assets are depreciated over the lease term.

(h) Accounting for Foreign Currencies Translation

The reporting currency of the Company is the U.S. Dollar. The functional currencies of the Company's foreign operations and branches are the currencies in which the majority of their business is transacted.

Transactions in currencies other than the functional currency are measured in the functional currency of that operation at the exchange rate prevailing at the date of the transaction. Monetary assets and liabilities denominated in non-functional currencies are remeasured at the exchange rate prevailing at the balance sheet date and any resulting foreign exchange gains or losses are reflected in the statement of operations.

Monetary and non-monetary assets and liabilities of the Company's functional currency operations are translated into U.S. Dollars at the exchange rate prevailing at the balance sheet date. Income and expenses of these operations are translated at the exchange rate prevailing at the date of the transaction. Unrealized gains or losses arising from the translation of functional currencies are recorded net of tax as a component of other comprehensive income.

(i) Accounting for Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. When the Company does not believe that, on the basis of available information, it is more likely than not that deferred tax assets will be fully recovered, it recognizes a valuation allowance against its deferred tax assets to reduce the deferred tax assets to the amount more likely than not to be realized. 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.

Furthermore, a tax benefit from a tax position may be recognized in the financial statements only if it is more-likely-than-not that the position is sustainable, based solely on its technical merits and consideration of the relevant tax authority's widely understood administrative practices and precedents. The tax benefit recognized, when the likelihood of realization is more likely-than-not (i.e. greater than 50 percent), is measured at the largest amount that is greater than 50 percent likely of being realized upon settlement.

The Company applies a portfolio approach to release the income tax effects in accumulated other comprehensive income. Under this approach, the income tax effects upon the sale of an available-for-sale debt security, settlement of hedged transactions and upon foreign currency re-translations as of each period end, are determined under the intra period tax allocation approach. Any tax effects remaining in accumulated other comprehensive income are only released when the entire portfolio is liquidated, sold or extinguished.

(j) Accounting for Preference Shares

The Company had at the balance sheet date in issue three classes of preference shares. The Company has no obligation to pay interest on these securities but they carry entitlements to dividends payable at the discretion of the Board of Directors. In the event of non-payment of dividends for six consecutive periods, holders of preference shares have director appointment rights. The preference shares are therefore accounted for as equity instruments and included within total shareholders' equity.

(k) Accounting for Long-Term Incentive Plans

The Company operates an employee long-term incentive plan, comprised of Performance Units and Exit Units, the terms and conditions of which are described in Note 16. The Company applies a fair-value based measurement method in calculating the compensation costs of Performance Units which are recognized on a straight line basis over the vesting period.

Prior to the Merger, the Company operated an employee share incentive plan, a non-executive director stock incentive plan and employee share purchase plans, the terms and conditions of which are described in Note 16. The Company applied a fair-value based measurement method including estimates for future forfeitures in the calculation of the compensation costs of stock options, performance shares, phantom shares and restricted share units.

(l) Accounting for Long-Term Debt Issued by Variable Interest Entities

Silverton, a consolidated variable interest entity, issued debt instruments as further described in Note 5, “Variable Interest Entities” of these consolidated financial statements. This debt was separately identified on the Company’s balance sheet and the Company elected to record the debt at fair value due to the potential variability over the ultimate settlement value of the debt instruments.

(m) Accounting for Business Combinations

The Company accounts for a transaction as a business combination where the assets acquired and liabilities assumed following a transaction constitute a business. An acquired entity must have inputs and processes that make it capable of generating a return or economic benefit to be considered a business. If the assets acquired are not a business, the Company accounts the transaction as an asset acquisition. The Company recognizes and measures at fair value 100 percent of the assets and liabilities of any acquired business. Goodwill is recognized and measured as the difference between the consideration paid or payable less the fair value of assets acquired.

The Company accounts for the disposal of subsidiary undertakings when it ceases to control the subsidiary’s assets and liabilities or the group of assets. A gain or loss is recognized and measured as the difference between the fair value of consideration received or receivable and the value of assets, liabilities and equity components de-recognized, related to that subsidiary or group of assets when deconsolidated.

Costs that are directly related to a business combination transaction are expensed in the periods in which the costs are incurred and the services are received.

(n) Accounting Pronouncements

Accounting Pronouncements Adopted in 2019

On February 25, 2016, the Financial Accounting Standards Board (“FASB”) issued ASU 2016-2, “*Leases (Topic 842)*” which supersedes the leases requirements in Topic 840 and establishes the principles that lessees and lessors shall apply, to report useful information to users of financial statements about the amount, timing, and uncertainty of cash flows arising from a lease. As per ASU 842, the Company has chosen to adopt a modified retrospective transition method with an effective application date being the beginning of the period of adoption (i.e., January 1, 2019) and as a result prior comparative periods would not be adjusted under this method.

Following the adoption of this standard, the Company recognized right-of-use operating leased assets of \$88.1 million, consisting of leased office real estate and motor vehicles, and an operating lease liability of \$95.5 million on the balance sheet as of January 1, 2019. The interest rate assumption applied in determining the present value of future cash flows of 5% was determined based on the Company’s weighted average incremental borrowing rate. As at December 31, 2019, right-of-use operating leased assets of \$93.5 million and a corresponding operating lease liability of \$113.2 million have been recognized on the balance sheet which include new and renewed lease agreements during the year. An operating lease charge of \$18.0 million was incurred during the year ended December 31, 2019, consisting of an amortization charge of \$13.4 million on right-of-use operating leases assets and a \$4.6 million finance charge on the operating lease liability. For further details refer to Note 18, “Operating Leases.”

On March 5, 2019, the FASB issued ASU 2019-01, “*Codification Improvements (Topic 842)*” which amended lessor accounting guidance in ASC 842 and clarifies exemption from certain interim period transitional disclosure requirements. The amendments of this ASU are effective for fiscal years beginning after December 15, 2018. Adoption of this ASU did not have a material impact on the Company’s financial statements and disclosures.

On August 28, 2017, the FASB issued ASU 2017-12, “*Derivatives and Hedging (Topic 815)*” enabling entities to better align their hedge accounting and risk management activities, while also simplifying the application of hedge accounting in certain situations. This ASU is effective for fiscal years beginning after December 15, 2018 using a modified retrospective approach for cash flow and net investment hedge relationships that exist on the date of adoption. Adoption of this ASU did not have a material impact on the Company’s financial statements and disclosures.

On February 14, 2018, the FASB issued ASU 2018-02, “*Income Statement - Reporting Comprehensive Income (Topic 220)*” which allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. This ASU is effective for fiscal years beginning after December 15, 2018 and interim periods

within those fiscal years. Adoption of this ASU did not have a material impact on the Company's financial statements and disclosures.

On June 20, 2018, the FASB issued ASU 2018-07, "*Compensation - Stock Compensation (Topic 718)*" which amends the scope of Topic 718 via improvements to non-employee share-based payment accounting. Amendments include allowing companies to account for share-based payment transactions with non-employees in the same way as share-based payment transactions with employees and includes elections that offer relief to non-public companies when measuring non-employee equity share options. This ASU is effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Adoption of this ASU did not have a material impact on the Company's financial statements and disclosures.

On August 28, 2018, the FASB issued ASU 2018-13, "*Fair Value Measurement (Topic 820) Disclosure Framework*" allowing entities to modify the disclosure requirements on fair value measurements. This ASU is effective for fiscal years beginning after December 15, 2019, however early adoption is permitted. The Company has chosen to early adopt and has therefore not disclosed information regarding the effect of unobservable inputs on earnings for the period.

Accounting Pronouncements Not Yet Adopted

On June 16, 2016, the FASB issued ASU 2016-13, "*Financial Instruments - Credit Losses (Topic 326)*" which introduces a new impairment model, known as the current expected credit loss model, which is based on expected losses rather than incurred losses. Under the new credit loss model, the Company would recognize an allowance for its estimate of expected credit losses and this would apply to most debt instruments (other than those measured at fair value), trade receivables, lease receivables, reinsurance receivables, financial guarantee contracts and loan commitments. This ASU also made limited amendments to the impairment model for available-for-sale debt securities, requiring an allowance for credit losses to be recognized. There are other amendments required as a result of this ASU that are effective for fiscal years beginning after December 15, 2019. Additionally, on May 15, 2019, the FASB issued ASU 2019-05, "*Financial Instruments - Credit Losses (Topic 326)*" which allows an entity, upon adoption of ASU 2016-13, to irrevocably elect the fair value option on an instrument-by-instrument basis (except for existing held-to-maturity securities). If an entity elects the fair value option, the difference between the instrument's fair value and carrying amount is recognized as a cumulative-effect adjustment. This ASU will be effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. These ASUs are expected to have a material impact on the Company's consolidated financial statements, specifically reducing the Company's available-for-sale investment portfolio and reinsurance recoverables by an estimated \$0.5 million and \$3.7 million, respectively, as a result of recognizing current expected credit losses, together with a cumulative effect adjustment of \$4.2 million through opening retained earnings.

On October 31, 2018, the FASB issued ASU 2018-17, "*Consolidation (Topic 810)*" which makes targeted improvements to related party guidance for variable interest entities, requiring the reporting entity to consider indirect interests held through related parties under common control on a proportionate basis when evaluating whether a decision-maker's fee is a variable interest for purposes of the primary beneficiary test. This ASU will be effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. The Company has evaluated the provisions of ASU 2018-17 to determine how it will be affected, and no material impact is expected on the consolidated financial statements.

On April 4, 2019, the FASB issued ASU 2019-04, "*Codification Improvements to Topic 326, Financial Instruments - Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments*" amending guidance on credit losses, hedging, and recognizing and measuring financial instruments in response to questions raised by stakeholders and to correct unintended application. This ASU will be effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years for both Topic 326 and Topic 825, whereas for Topic 815 the amendments are effective as of the beginning of the entity's next annual period for entities that have already adopted the hedge accounting standard. The Company is currently evaluating the provisions of ASU 2019-04 to determine how it will be affected, but no material impact is expected on the consolidated financial statements.

On December 18, 2019, the FASB issued ASU 2019-12, "*Income Taxes (Topic 740)*" which makes amendments aimed at simplifying the accounting for income taxes. This ASU will be effective for fiscal years beginning after December 15, 2021 and interim periods within those fiscal years. The Company is currently evaluating the provisions of ASU 2019-12 to determine how it will be affected, but no material impact is expected on the consolidated financial statements.

Other accounting pronouncements were issued during the year ended December 31, 2019 which were either not relevant to the Company or did not impact the Company's consolidated financial statements.

(o) Correction of Immaterial Error

During the fourth quarter of 2019, the Company identified the need for recording additional adjustment premiums for a limited number of historical excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior. This error

individually is immaterial to the prior periods financial statements and therefore the Company will not be amending previously filed financial statements. The recognition of additional ceded premiums constituted a \$15.6 million cumulative adjustment to opening retained earnings and reinsurance premium payables in 2017. Management has determined that the restatement is immaterial when considering both qualitative and quantitative measures.

3. Segment Reporting

The Company is organized into two business segments, namely Aspen Re and Aspen Insurance. The Company has determined its reportable segments, Aspen Re (“Reinsurance”) and Aspen Insurance (“Insurance”), by taking into account the manner in which management makes operating decisions and assesses operating performance. Profit or loss for each of the Company’s business segments is measured by underwriting profit or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, amortization of deferred policy acquisition costs and general and administrative expenses. Underwriting profit or loss provides a basis for management to evaluate the segment’s underwriting performance.

Reinsurance Segment. The reinsurance segment consists of property catastrophe reinsurance, other property reinsurance, casualty reinsurance and specialty reinsurance. Aspen Capital Markets focuses on developing alternative reinsurance structures to leverage the Company’s existing underwriting franchise, increase its operational flexibility in the capital markets and provide investors direct access to its underwriting expertise. Aspen Capital Markets leverages the Company’s underwriting and analytical expertise and earns management and performance fees from third-party investors primarily through the management of ILS funds and other offerings. For a more detailed description of this business segment, refer to Item 4, “Information on the Company — Business Overview — Aspen Reinsurance” above.

Insurance Segment. The insurance segment consists of property and casualty insurance, marine, aviation and energy insurance and financial and professional lines insurance. For a more detailed description of this segment, refer to Item 4 “Information on the Company — Business Overview — Aspen Insurance” above.

Non-underwriting Disclosures. The Company provides additional disclosures for corporate and other (non-operating) income and expenses. Corporate and other income and expenses include net investment income, net realized and unrealized investment gains or losses, expenses associated with managing the Aspen Group, certain strategic and other costs, changes in fair value of derivatives or the loan notes issued by variable interest entities, interest expenses, net realized and unrealized foreign exchange gains or losses, asset impairments and income taxes, none of which are allocated to the business segments. These corporate expenses are not allocated to the Company’s business segments as they typically do not fluctuate with the levels of premiums written and are not directly related to the Company’s business segment operations. The Company does not allocate its assets by business segment as it evaluates underwriting results of each business segment separately from the results of the Company’s investment portfolio.

The Company uses underwriting ratios as measures of performance. The loss ratio is the ratio of losses and loss adjustment expenses to net earned premiums. The policy acquisition expense ratio is the ratio of amortization of deferred policy acquisition costs to net earned premiums. The general and administrative expense ratio is the ratio of general, administrative and corporate expenses to net earned premiums. The combined ratio is the sum of the loss ratio, the policy acquisition expense ratio and the general and administrative expense ratio.

The following tables provide a summary of gross and net written and earned premiums, underwriting results, ratios and reserves for each of the Company's business segments for the twelve months ended December 31, 2019, 2018 and 2017:

	Twelve Months Ended December 31, 2019		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,485.5	\$ 1,956.9	\$ 3,442.4
Net written premiums	1,251.1	1,176.8	2,427.9
Gross earned premiums	1,494.9	1,927.5	3,422.4
Net earned premiums	1,255.2	1,038.1	2,293.3
Underwriting Expenses			
Losses and loss adjustment expenses	917.9	761.8	1,679.7
Amortization of deferred policy acquisition costs	264.9	147.8	412.7
General and administrative expenses	111.7	229.8	341.5
Underwriting (loss)	(39.3)	(101.3)	(140.6)
Corporate expenses			(54.5)
Non-operating expenses			(125.6) ⁽¹⁾
Net investment income			197.3
Realized and unrealized investment gains			97.1
Realized and unrealized investment losses			(10.9)
Realized loss on debt extinguishment			(5.5)
Change in fair value of loan notes issued by variable interest entities			(3.1)
Change in fair value of derivatives			(144.2)
Interest expense on long term debt			(20.2)
Net realized and unrealized foreign exchange (losses)			(11.8)
Other income			4.9
Other expenses			(1.7)
(Loss) before tax			(218.8)
Income tax (expense)			(22.9)
Net (loss)			<u>\$ (241.7)</u>
Net reserves for loss and loss adjustment expenses	<u>\$ 2,605.9</u>	<u>\$ 2,026.1</u>	<u>\$ 4,632.0</u>
Ratios			
Loss ratio	73.1%	73.4%	73.2%
Policy acquisition expense ratio	21.1	14.2	18.0
General and administrative expense ratio	8.9	22.1	22.7 ⁽²⁾
Expense ratio	30.0	36.3	40.7
Combined ratio	103.1%	109.7%	113.9%

⁽¹⁾ Non-operating expenses includes \$103.4 million of costs related to the Merger, severance, retention and other costs, and \$22.2 million of expenses related to the Company's operating effectiveness and efficiency program, which includes \$12.3 million of impairment charges related to lease assets as a result of sub-leasing certain office space.

⁽²⁾ The general and administrative expense ratio in the total column includes corporate and non-operating expenses.

	Twelve Months Ended December 31, 2018		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,495.7	\$ 1,951.2	\$ 3,446.9
Net written premiums	1,182.9	899.1	2,082.0
Gross earned premiums	1,593.9	1,940.5	3,534.4
Net earned premiums	1,256.4	958.3	2,214.7
Underwriting Expenses			
Losses and loss adjustment expenses	927.0	646.0	1,573.0
Amortization of deferred policy acquisition costs	260.9	110.7	371.6
General and administrative expenses	118.5	239.2	357.7
Underwriting (loss)	(50.0)	(37.6)	(87.6)
Corporate expenses			(56.8)
Non-operating expenses			(77.2) ⁽¹⁾
Net investment income			198.2
Realized and unrealized investment gains			110.0
Realized and unrealized investment losses			(174.7)
Realized loss on debt extinguishment			(8.6)
Change in fair value of loan notes issued by variable interest entities			(4.4)
Change in fair value of derivatives			(31.8)
Interest expense on long term debt			(25.9)
Net realized and unrealized foreign exchange (losses)			(3.5)
Other income			9.0
Other expenses			(2.7)
(Loss) before tax			(156.0)
Income tax benefit			10.2
Net (loss)			<u>\$ (145.8)</u>
Net reserves for loss and loss adjustment expenses	\$ 2,843.6	\$ 2,153.0	\$ 4,996.6
Ratios			
Loss ratio	73.8%	67.4%	71.0%
Policy acquisition expense ratio	20.8	11.6	16.8
General and administrative expense ratio	9.4	25.0	22.2 ⁽²⁾
Expense ratio	30.2	36.6	39.0
Combined ratio	104.0%	104.0%	110.0%

⁽¹⁾ Non-operating expenses includes \$37.5 million of expenses related to Company's operating effectiveness and efficiency program, \$39.0 million of advisor fees related to the Merger and \$11.3 million of retention costs, partially offset by the write back of a \$14.1 million buy-out provision.

⁽²⁾ The general and administrative expense ratio in the total column includes corporate and non-operating expenses.

	Twelve Months Ended December 31, 2017		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,548.5	\$ 1,812.4	\$ 3,360.9
Net written premiums	1,250.0	962.5	2,212.5
Gross earned premiums	1,451.8	1,757.4	3,209.2
Net earned premiums	1,206.1	1,100.5	2,306.6
Underwriting Expenses			
Losses and loss adjustment expenses	1,116.4	878.3	1,994.7
Amortization of deferred policy acquisition costs	235.5	165.0	400.5
General and administrative expenses	157.3	253.9	411.2
Underwriting (loss)	(303.1)	(196.7)	(499.8)
Corporate expenses			(58.3)
Non-operating expenses			(32.7) ⁽¹⁾
Net investment income			189.0
Realized and unrealized investment gains			148.9
Realized and unrealized investment losses			(28.4)
Change in fair value of loan notes issued by variable interest entities			21.2
Change in fair value of derivatives			27.7
Interest expense on long term debt			(29.5)
Net realized and unrealized foreign exchange (losses)			(23.9)
Other income			8.9
Other expenses			(4.9)
(Loss) before tax			(281.8)
Income tax benefit			15.4
Net (loss)			<u>\$ (266.4)</u>
Net reserves for loss and loss adjustment expenses	<u>\$ 2,917.1</u>	<u>\$ 2,317.2</u>	<u>\$ 5,234.3</u>
Ratios			
Loss ratio	92.6%	79.8%	86.5%
Policy acquisition expense ratio	19.5	15.0	17.4
General and administrative expense ratio	13.0	23.1	21.8 ⁽²⁾
Expense ratio	32.5	38.1	39.2
Combined ratio	125.1%	117.9%	125.7%

⁽¹⁾ Non-operating expenses includes \$15.2 million of expenses related to the Company's operating effectiveness and efficiency program.

⁽²⁾ The general and administrative expense ratio in the total column includes corporate and non-operating expenses.

Geographical Areas. The following summary presents the Company's gross written premiums based on the location of the insured risk for the twelve months ended December 31, 2019, 2018 and 2017.

	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Australia/Asia	\$ 215.9	\$ 175.9	\$ 167.3
Caribbean	9.3	7.7	17.6
Europe	82.8	92.6	94.5
United Kingdom	295.7	290.1	258.3
United States & Canada ⁽¹⁾	2,003.9	1,875.9	1,729.3
Worldwide excluding United States ⁽²⁾	63.0	70.1	88.1
Worldwide including United States ⁽³⁾	614.9	775.8	868.6
Others	156.9	158.8	137.2
Total	\$ 3,442.4	\$ 3,446.9	\$ 3,360.9

- (1) "United States and Canada" comprises individual policies that insure risks specifically in the United States and/or Canada, but not elsewhere.
- (2) "Worldwide excluding the United States" comprises individual policies that insure risks wherever they may be across the world but specifically excludes the United States.
- (3) "Worldwide including the United States" comprises individual policies that insure risks wherever they may be across the world but specifically includes the United States.

4. Investments

Income Statement

Investment Income. The following table summarizes investment income for the twelve months ended December 31, 2019, 2018 and 2017:

	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Fixed income securities — Available for sale	\$ 128.2	\$ 134.1	\$ 133.3
Fixed income securities — Trading	42.0	49.6	44.0
Short-term investments — Available for sale	2.3	1.4	0.4
Short-term investments — Trading	2.5	0.4	0.8
Fixed term deposits (included in cash and cash equivalents)	19.5	14.2	6.2
Equity securities — Trading	—	2.1	13.6
Catastrophe bonds — Trading	2.3	2.8	1.8
Privately-held investments — Trading	3.4	—	—
Other investments, at fair value	8.9	2.5	—
Total	209.1	207.1	200.1
Investment expenses	(11.8)	(8.9)	(11.1)
Net investment income	\$ 197.3	\$ 198.2	\$ 189.0

The following table summarizes the net realized and unrealized investment gains and losses recorded in the statement of operations and the change in unrealized gains and losses on investments recorded in other comprehensive income for the twelve months ended December 31, 2019, 2018 and 2017:

	For the Twelve Months Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
	(\$ in millions)		
Available for sale:			
Fixed income securities — gross realized gains	\$ 14.4	\$ 6.4	\$ 10.2
Fixed income securities — gross realized (losses)	(7.3)	(11.4)	(6.6)
Short-term investments — gross realized gains	—	—	0.1
Cash and cash equivalents — gross realized gains	0.1	0.3	0.4
Cash and cash equivalents — gross realized (losses)	(0.2)	(0.5)	(0.1)
Other-than-temporary impairments	—	—	(0.7)
Trading:			
Fixed income securities — gross realized gains	34.3	4.6	9.7
Fixed income securities — gross realized (losses)	(2.6)	(25.0)	(4.5)
Short-term investments — gross realized gains	—	0.1	2.7
Short-term investments — gross realized (losses)	—	(4.2)	—
Cash and cash equivalents — gross realized gains	—	1.5	1.3
Cash and cash equivalents — gross realized (losses)	(0.3)	(0.3)	—
Equity securities — gross realized gains	—	94.5	59.0
Equity securities — gross realized (losses)	—	(20.1)	(13.7)
Privately-held investments — gross realized (losses)	(0.2)	—	—
Catastrophe bonds — net unrealized gains/(losses)	0.9	2.2	(2.4)
Net change in gross unrealized gains / losses	47.2	(112.1)	60.3
Investments — equity method:			
Gross realized and unrealized (loss) in MVI	(0.1)	(0.2)	(0.1)
Gross unrealized gain in Chaspark	—	—	0.9
Gross realized and unrealized (loss) gain in Digital Risk	(0.2)	0.4	—
Gross realized and unrealized (loss) in Bene	—	(0.9)	(0.3)
Gross realized gain on sale of AgriLogic	—	—	4.3
Total net realized and unrealized investment gains/(losses) recorded in the statement of operations	<u>\$ 86.2</u>	<u>\$ (64.7)</u>	<u>\$ 120.5</u>
Change in available for sale net unrealized gain/(losses):			
Fixed income securities	164.9	(81.3)	(14.8)
Change in taxes	(13.6)	4.8	2.0
Total change in net unrealized gains/(losses), net of taxes recorded in other comprehensive income	<u>\$ 151.3</u>	<u>\$ (76.5)</u>	<u>\$ (12.8)</u>

Balance Sheet

Fixed Income Securities and Short-Term Investments — Available For Sale. The following tables present the cost or amortized cost, gross unrealized gains and losses and estimated fair market value of available for sale investments in fixed income securities and short-term investments as at December 31, 2019 and December 31, 2018:

	As at December 31, 2019			
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
	(\$ in millions)			
U.S. government	\$ 1,383.2	\$ 31.3	\$ (1.4)	\$ 1,413.1
U.S. agency	38.7	0.9	—	39.6
Municipal	47.8	2.9	—	50.7
Corporate	1,905.6	54.8	(0.6)	1,959.8
Non-U.S. government-backed corporate	86.1	0.5	(0.1)	86.5
Non-U.S. government	324.7	4.5	(0.4)	328.8
Asset-backed	0.2	—	—	0.2
Non-agency commercial mortgage-backed	6.7	—	(0.2)	6.5
Agency mortgage-backed	1,052.2	21.9	(1.1)	1,073.0
Total fixed income securities — Available for sale	4,845.2	116.8	(3.8)	4,958.2
Total short-term investments — Available for sale	117.6	—	—	117.6
Total	\$ 4,962.8	\$ 116.8	\$ (3.8)	\$ 5,075.8

	As at December 31, 2018			
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
	(\$ in millions)			
U.S. government	\$ 1,413.5	\$ 6.8	\$ (16.1)	\$ 1,404.2
U.S. agency	47.7	0.1	(0.4)	47.4
Municipal	46.7	1.3	(0.8)	47.2
Corporate	2,238.9	7.8	(40.5)	2,206.2
Non-U.S. government-backed corporate	93.2	0.2	(0.2)	93.2
Non-U.S. government	399.8	3.6	(0.8)	402.6
Asset-backed	17.4	—	(0.1)	17.3
Agency mortgage-backed	1,025.1	6.5	(19.0)	1,012.6
Total fixed income securities — Available for sale	5,282.3	26.3	(77.9)	5,230.7
Total short-term investments — Available for sale	105.6	—	—	105.6
Total	\$ 5,387.9	\$ 26.3	\$ (77.9)	\$ 5,336.3

Fixed Income Securities, Short Term Investments, Equities, Catastrophe Bonds and Privately-held Investments — Trading. The following tables present the cost or amortized cost, gross unrealized gains and losses, and estimated fair market value of trading investments in fixed income securities, short-term investments, equity securities, catastrophe bonds and privately-held investments as at December 31, 2019 and December 31, 2018:

	As at December 31, 2019			
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
	(\$ in millions)			
Fixed Income Securities — Trading				
U.S. government	\$ 183.3	\$ 1.8	\$ (0.1)	\$ 185.0
Municipal	3.1	0.1	—	3.2
Corporate	231.7	11.6	(0.1)	243.2
Non-U.S. government	143.9	7.4	(0.1)	151.2
Asset-backed	491.7	2.4	(1.7)	492.4
Agency mortgage-backed	52.9	0.9	—	53.8
Total fixed income securities — Trading	1,106.6	24.2	(2.0)	1,128.8
Short-term investments — Trading	79.2	—	—	79.2
Catastrophe bonds — Trading	29.4	—	(0.8)	28.6
Privately-held investments — Trading				
Commercial mortgage loans	\$ 156.3	\$ 0.3	\$ —	\$ 156.6
Middle market loans	111.7	0.2	(0.2)	111.7
Asset-backed securities	8.7	—	—	8.7
Equity securities	2.5	0.2	—	2.7
Total privately-held investments — Trading	279.2	0.7	(0.2)	279.7
Total Investments — Trading	\$ 1,494.4	\$ 24.9	\$ (3.0)	\$ 1,516.3

	As at December 31, 2018			
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
	(\$ in millions)			
Fixed Income Securities — Trading				
U.S. government	\$ 146.6	\$ 1.6	\$ (0.5)	\$ 147.7
Municipal	2.8	—	(0.1)	2.7
Corporate	734.2	2.6	(16.6)	720.2
Non-U.S. government	268.7	1.9	(5.2)	265.4
Asset-backed	2.4	—	—	2.4
Agency mortgage-backed	50.3	0.2	(1.1)	49.4
Total fixed income securities — Trading	1,205.0	6.3	(23.5)	1,187.8
Short-term investments — Trading	9.5	—	—	9.5
Catastrophe bonds — Trading	37.9	0.1	(1.8)	36.2
Total Investments — Trading	\$ 1,252.4	\$ 6.4	\$ (25.3)	\$ 1,233.5

The Company classifies the financial instruments listed above as held for trading because this most closely reflects the facts and circumstances of the investments held.

As at December 31, 2019, the Company had a 3.2% position in U.S Dollar BBB Emerging Market Debt and a 1.4% position in a real estate fund and a 3.6% position in MML and CML, representing in total 8.2% of our Managed Portfolio (December 31, 2018 — 5.8%).

Catastrophe bonds. The Company has invested in catastrophe bonds with a total value of \$28.6 million as at December 31, 2019 (December 31, 2018 — \$36.2 million). The bonds are either zero-coupon notes or receive quarterly interest payments based on variable interest rates with scheduled maturities ranging from 2019 to 2022. The redemption value of the bonds will adjust

based on the occurrence or aggregate occurrence of a covered event, such as windstorms and earthquakes in the United States, Canada, the North Atlantic, South America, Europe, Japan or Australia.

Privately-held investments. The Company has invested in privately-held investments, which primarily include commercial mortgage loans of \$156.6 million and middle market loans of \$111.7 million as at December 31, 2019 (December 31, 2018 — privately-held investments of \$Nil).

Commercial Mortgage Loans. The commercial mortgage loans are related to investments in properties including apartments, hotels, office and retail buildings, other commercial properties and industrial properties. The commercial mortgage loan portfolio is diversified by property type, geographic region and issuer to reduce risks. As part of our investment process, we evaluate factors such as size, property type, and security to determine that properties are performing at a consistent and acceptable level to secure the related debt. The following table presents the type of commercial mortgage loans and geographic region as at December 31, 2019:

Property type	As at December 31, 2019	
	Net Carrying Value	Percentage of Total
	(in millions)	(%)
Apartment	\$ 48.3	31%
Hotels	47.7	30
Office building	21.9	14
Other commercial	17.0	11
Retail	15.2	10
Industrial	6.5	4
Total commercial mortgage loans	\$ 156.6	100%
Geographic Region		
U.S.	\$ 85.5	55%
International	71.1	45
Total commercial mortgage loans	\$ 156.6	100%

The primary credit quality indicator of commercial mortgage loans is loan performance. Non-performing commercial mortgage loans are generally 90 days or more past due. As of December 31, 2019, all of our commercial mortgage loans were performing. Loan-to-value and debt service coverage ratios are measures we use to assess the risk and quality of commercial mortgage loans. The loan-to-value ratio is expressed as a percentage of the value of the loan relative to the value of the underlying property. A loan-to-value ratio in excess of 100% indicates the unpaid loan amount exceeds the underlying collateral. The following table represents the loan-to-value ratio of the commercial mortgage loan portfolio as at December 31, 2019:

	As at December 31, 2019	
	(in millions)	
50% to 60%	\$	80.5
61% to 70%		35.5
71% to 80%		40.6
Commercial mortgage loans	\$	156.6

The debt-service coverage ratio is measured by a property's net operating income as a multiple of its debt re-payments. A ratio of less than 1.0 reflects a property's operations is not sufficient to cover its debt payments. The following table represents the debt-service coverage ratio of the commercial mortgage loan portfolio as at December 31, 2019:

	As at December 31, 2019	
	(in millions)	
Greater than 1.20x	\$	94.6
1.00 - 1.20x		48.3
Less than 1.00x		13.7
Commercial mortgage loans	\$	156.6

Middle Market Loans. The middle market loans are investments in senior secured loan positions with full covenants, focused on the middle market in both U.S. and Europe. The middle market loan portfolio is diversified by industry type, geographic region and issuer to reduce risks. As part of our investment process, we evaluate factors such as size, industry and security to determine that loans are performing at a consistent and acceptable level to secure the related debt. The following table presents the type of middle market loans and geographic region as at December 31, 2019:

	December 31, 2019	
	Net Carrying Value	Percentage of Total
	(in millions)	(%)
Industry type		
Materials	\$ 29.5	26%
Financials	22.2	20
Industrials	18.9	17
Consumer discretionary	14.2	13
Health care	8.2	7
Energy	7.4	7
Consumer staples	6.4	6
Information technology	4.9	4
Total middle market mortgage loans	\$ 111.7	100%
Geographic Region		
U.S.	\$ 91.8	82%
International	19.9	18
Total middle market loans	\$ 111.7	100%

The primary credit quality indicator of middle market loans is loan performance. Non-performing middle market loans are generally 90 days or more past due. As of December 31, 2019, all of our middle market loans were performing. Loan-to-enterprise-value and fixed charge coverage ratios are measures we use to assess the risk and quality of middle market loans. The loan-to-enterprise-value ratio is expressed as a percentage of the value of the loan relative to the value of the business. A loan-to-enterprise-value ratio in excess of 100% indicates the unpaid loan amount exceeds the value of the underlying business. The following table represents the loan-to-enterprise-value ratio of the middle market loan portfolio as at December 31, 2019:

	As at December 31, 2019	
	(in millions)	
Less than 50%	\$ 90.6	
50% to 60%		21.1
Middle market loans	\$ 111.7	

The fixed charge coverage ratio, based upon the most recent financial statements, is expressed as a percentage of a firm's earnings plus fixed charges to its fixed charges. Fixed charges include debt repayments, interest and equipment lease expenses. A fixed charge coverage ratio of less than 1.0 indicates a firm's operations do not generate enough income to cover its fixed charges. The following represents the fixed charge coverage ratio of the middle market loan portfolio as at December 31, 2019

	As at December 31, 2019	
	(in millions)	
Greater than 1.20x	\$ 68.4	
1.00 - 1.20x		25.5
Less than 1.00x		17.8
Middle market loans	\$ 111.7	

Asset-backed securities. Our asset-backed securities portfolio of privately-held investments consists of a single non-U.S. based issuer that issues fixed rate notes that are backed by future flows from international credit card companies and this security is performing.

Equity securities. Our equity securities portfolio of privately-held investments consists of a single non-U.S. based issuer that is a special purpose vehicle designed to grant a first lien right to the underlying senior notes within the structure. The underlying issuer is a financial services lender to middle market companies and this security is performing.

Investments — Equity Method. In January 2015, the Company, along with seven other insurance companies, established a micro-insurance venture consortium and micro-insurance incubator (“MVI”) domiciled in Bermuda. The MVI is a social impact organization that provides micro-insurance products to assist global emerging consumers. The Company’s initial investment in the MVI was \$0.8 million. The Company made an additional investment of \$0.1 million in the twelve months ended December 31, 2017 and a further investment of \$0.2 million in the twelve months ended December 31, 2018.

On September 25, 2012, the Company established a subsidiary, Aspen Recoveries Limited, to take ownership of a 58.5% shareholding in Chaspark Maritime Holdings Ltd., a Singaporean registered company (“Chaspark”), with the remaining shareholding owned by other insurers. The shareholding in Chaspark represented the interest in subrogation rights arising on a contract frustration claim settlement. On March 10, 2017, Aspen Recoveries Limited received cash of \$9.3 million as settlement of its share of subrogation assets held by Chaspark. In the twelve months ended December 31, 2017, the change in the value of the Company’s investment in Chaspark was an unrealized gain of \$0.9 million.

On July 26, 2016, the Company purchased through its wholly-owned subsidiary, Acorn Limited (“Acorn”), a 20.0% share of Bene Assicurazioni (“Bene”), an Italian-based motor insurer for a total consideration of \$3.3 million. The investment is accounted for under the equity method and adjustments to the carrying value of this investment are made based on the Company’s share of capital, including share of income and expenses. The Company made additional investments of \$1.2 million and \$1.1 million, in the twelve months ended December 31, 2018 and December 31, 2019, respectively.

On January 1, 2017, the Company purchased through its wholly-owned subsidiary, Aspen U.S. Holdings, Inc. (“Aspen U.S. Holdings”), a 49% share of Digital Risk Resources, LLC (“Digital Re”), a U.S.-based enterprise engaged in the business of developing, marketing and servicing turnkey information security and privacy liability insurance products for a total consideration of \$2.3 million. The investment is accounted for under the equity method and adjustments to the carrying value of this investment are made based on the Company’s share of capital, including share of income and expenses.

On December 18, 2017, the Company acquired through its wholly-owned subsidiary, Aspen U.S. Holdings, a 23.2% share of Crop Re Services LLC (“Crop Re”), a newly formed U.S.-based subsidiary of CGB Diversified Services, Inc (“CGB DS”) in exchange for the sale of AG Logic Holdings, LLC (“AgriLogic”), the Company’s U.S. crop insurance business. Total consideration for the sale of AgriLogic consisted of the 23.2% share of Crop Re valued at \$62.5 million and cash in the amount of \$5.9 million. Crop Re is responsible for directing the placement of reinsurance on behalf of CGB DS and CGB Insurance Company (“CGBIC”), an Indiana insurance company affiliate of CGB DS and an RMA licensed crop insurer. The remaining 76.8% of Crop Re is owned by CGB DS. AAIC, or an affiliate of AAIC, provides quota share reinsurance to CGBIC for both federal and state regulated crop insurance as part of the Company’s ownership in Crop Re. The investment in Crop Re represents the Company’s share of the net assets of Crop Re plus a basis difference which represents the difference between the cost of the investment and the amount of underlying equity in net assets. The Company has determined that this basis difference of \$62.5 million represents the value attributable to the ability of Crop Re to direct the placement of reinsurance business under the reinsurance commitment contained within the operating agreement between Crop Re and the Company. The investment in Crop Re is accounted for under the equity method and adjustments to the carrying value of this investment are made based on the Company’s share of capital, including share of income and expenses.

On September 18, 2018, Aspen U.S. Holdings sold a 60% interest in AgriLogic Consulting, LLC, its agricultural consulting business, to CGB DS and an individual investor. The Company’s residual 40% interest in AgriLogic Consulting, LLC is valued at \$Nil.

The table below shows the Company's investments in MVI, Bene, Digital Re and Crop Re for the twelve months ended December 31, 2019 and 2018:

	MVI	Bene	Digital Re	Crop Re	Total
	(\$ in millions)				
Opening undistributed value of investment as at January 1, 2019	\$ 0.5	\$ 3.2	\$ 0.9	\$ 62.5	\$ 67.1
Investment in the period	—	1.1	—	—	1.1
Unrealized (loss)/gain for the twelve months to December 31, 2019	(0.1)	—	(0.2)	—	(0.3)
Closing value of investment as at December 31, 2019	<u>\$ 0.4</u>	<u>\$ 4.3</u>	<u>\$ 0.7</u>	<u>\$ 62.5</u>	<u>\$ 67.9</u>
Opening undistributed value of investment as at January 1, 2018	\$ 0.5	\$ 2.9	\$ 0.5	\$ 62.5	\$ 66.4
Investment in the period	0.2	1.2	—	—	1.4
Unrealized (loss)/gain for the twelve months to December 31, 2018	(0.2)	(0.9)	0.4	—	(0.7)
Closing value of investment as at December 31, 2018	<u>\$ 0.5</u>	<u>\$ 3.2</u>	<u>\$ 0.9</u>	<u>\$ 62.5</u>	<u>\$ 67.1</u>

Other Investments. On December 20, 2017, the Company committed \$100.0 million as a limited partner to a real estate fund. The investment objective of the fund is to achieve attractive risk-adjusted returns through the acquisition of income producing, high quality assets in gateway cities located in the U.S. and Canada in the office, retail, industrial and multifamily sectors of the real estate market. On May 1, 2018, the Company received a demand for an initial capital call of \$86.2 million and paid the capital call on May 10, 2018. On September 19, 2018, the Company received a demand for the final capital call of \$13.8 million and paid the capital on September 28, 2018.

On December 23, 2019, the Company committed \$5.0 million as an equity investment in the holding company of a multi-line reinsurer. The strategy for the multi-line reinsurer is to combine a diversified reinsurance business, focused primarily on long-tailed lines of property and casualty business and, potentially to a lesser extent, life business, with a diversified investment strategy. On December 27, 2019, the Company received a demand for an initial capital call of \$0.2 million and paid the capital on January 15, 2020.

For further information on the real estate fund and the multi-line reinsurer, refer to Note 20(a) in these consolidated financial statements, "Commitments and Contingencies."

Fixed Income Securities. The scheduled maturity distribution of the Company's available for sale fixed income securities as at December 31, 2019 and December 31, 2018 is set forth below. Actual maturities may differ from contractual maturities because issuers of securities may have the right to call or prepay obligations with or without call or prepayment penalties.

	As at December 31, 2019		
	Amortized Cost or Cost	Fair Market Value	Average S&P Ratings by Maturity
	(\$ in millions)		
Due one year or less	\$ 572.7	\$ 574.6	AA
Due after one year through five years	2,230.3	2,269.3	AA-
Due after five years through ten years	864.1	896.3	AA-
Due after ten years	119.0	138.3	AA-
Total — Government and corporate	<u>3,786.1</u>	<u>3,878.5</u>	
Non-agency commercial mortgage-backed	6.7	6.5	AA+
Agency mortgage-backed	1,052.2	1,073.0	AA+
Asset-backed	0.2	0.2	AAA
Total fixed income securities — Available for sale	<u>\$ 4,845.2</u>	<u>\$ 4,958.2</u>	

	At December 31, 2018		
	Amortized Cost or Cost	Fair Market Value	Average S&P Ratings by Maturity
	(\$ in millions)		
Due one year or less	\$ 464.3	\$ 463.5	AA-
Due after one year through five years	2,605.7	2,582.0	AA-
Due after five years through ten years	1,047.9	1,028.3	AA-
Due after ten years	121.9	127.0	AA-
Total — Government and corporate	4,239.8	4,200.8	
Agency mortgage-backed	1,025.1	1,012.6	AA+
Asset-backed	17.4	17.3	AAA
Total fixed income securities — Available for sale	\$ 5,282.3	\$ 5,230.7	

Guaranteed Investments. As at December 31, 2019 and December 31, 2018, the Company held no investments which are guaranteed by mono-line insurers, excluding those with explicit government guarantees. The Company's exposure to other third-party guaranteed debt is primarily to investments backed by non-U.S. government guaranteed issuers.

Gross Unrealized Losses. The following tables summarize, by type of security, the aggregate fair value and gross unrealized loss by length of time the security has been in an unrealized loss position for the Company's available for sale portfolio as at December 31, 2019 and December 31, 2018:

	December 31, 2019						
	0-12 months		Over 12 months		Total		
	Fair Market Value	Gross Unrealized Losses	Fair Market Value	Gross Unrealized Losses	Fair Market Value	Gross Unrealized Losses	Number of Securities
	(\$ in millions)						
U.S. government	\$ 142.0	\$ (1.0)	\$ 138.2	\$ (0.4)	\$ 280.2	\$ (1.4)	49
U.S. agency	3.0	—	6.0	—	9.0	—	2
Municipal	3.7	—	—	—	3.7	—	2
Corporate	167.7	(0.6)	37.1	—	204.8	(0.6)	91
Non-U.S. government-backed corporate	31.8	(0.1)	—	—	31.8	(0.1)	9
Non-U.S. government	48.6	(0.4)	0.6	—	49.2	(0.4)	20
Asset-backed	—	—	0.2	—	0.2	—	1
Non-agency commercial mortgage- backed	6.5	(0.2)	—	—	6.5	(0.2)	1
Agency mortgage-backed	149.7	(0.3)	68.4	(0.8)	218.1	(1.1)	80
Total fixed income securities — Available for sale	553.0	(2.6)	250.5	(1.2)	803.5	(3.8)	255
Total short-term investments — Available for sale	29.5	—	—	—	29.5	—	5
Total	\$ 582.5	\$ (2.6)	\$ 250.5	\$ (1.2)	\$ 833.0	\$ (3.8)	260

	December 31, 2018						
	0-12 months		Over 12 months		Total		
	Fair Market Value	Gross Unrealized Losses	Fair Market Value	Gross Unrealized Losses	Fair Market Value	Gross Unrealized Losses	Number of Securities
	(\$ in millions)						
U.S. government	\$ 180.2	\$ (0.7)	\$ 740.6	\$ (15.4)	\$ 920.8	\$ (16.1)	103
U.S. agency	13.5	(0.2)	18.4	(0.2)	31.9	(0.4)	12
Municipal	3.1	(0.1)	25.0	(0.7)	28.1	(0.8)	9
Corporate	999.1	(15.2)	762.2	(25.3)	1,761.3	(40.5)	667
Non-U.S. government-backed corporate	14.5	—	25.8	(0.2)	40.3	(0.2)	12
Non-U.S. government	64.0	(0.3)	91.0	(0.5)	155.0	(0.8)	57
Asset-backed	6.3	—	10.8	(0.1)	17.1	(0.1)	8
Agency mortgage-backed	245.7	(2.6)	447.3	(16.4)	693.0	(19.0)	253
Total fixed income securities — Available for sale	1,526.4	(19.1)	2,121.1	(58.8)	3,647.5	(77.9)	1,121
Total short-term investments — Available for sale	34.5	—	—	—	34.5	—	12
Total	\$ 1,560.9	\$ (19.1)	\$ 2,121.1	\$ (58.8)	\$ 3,682.0	\$ (77.9)	1,133

Other-than-temporary Impairments. A security is potentially impaired when its fair value is below its cost or amortized cost. The Company reviews its available for sale fixed income and equity portfolios on an individual security basis for potential OTTI each quarter based on criteria including issuer-specific circumstances, credit ratings actions and general macro-economic conditions. The total OTTI charge for the twelve months ended December 31, 2019 was \$Nil (2018 — \$Nil). For a more detailed description of accounting policies for OTTI, refer to Note 2(c), “Basis of Preparation and Significant Accounting Policies — Accounting for Investments, Cash and Cash Equivalents” of these consolidated financial statements.

5. Variable Interest Entities

As at December 31, 2019, the Company had investments in one (December 31, 2018 — two) variable interest entity (“VIE”), namely Peregrine Reinsurance Ltd (“Peregrine”).

Peregrine. In November 2016, Peregrine, a subsidiary of the Company, was registered as a segregated accounts company under the Segregated Accounts Companies Act 2000, as amended. As at December 31, 2019, Peregrine had four segregated accounts which were funded by third-party investors.

The Company has determined that Peregrine has the characteristics of a VIE as addressed by the guidance in ASC 810, *Consolidation*. The four segregated accounts have not been consolidated as part of the Company’s consolidated financial statements because the Company is not the primary beneficiary of those accounts. The Company has, however, concluded that it is the primary beneficiary of the Peregrine general fund and, similar to prior reporting periods, the results of the Peregrine general fund are included in the Company’s consolidated financial statements. The Company’s exposure to Peregrine’s general fund is not material.

Silverton. On September 10, 2013, the Company established Silverton Re Ltd (“Silverton”), a Bermuda domiciled special purpose insurer—formed to provide additional collateralized capacity to support Aspen Re’s business through retrocession agreements which are collateralized and funded by Silverton through the issuance of one or more series of participating loan notes (collectively, the “Loan Notes”). Silverton is a non-rated insurer and the risks are fully collateralized by way of funds held in trust for the benefit of Aspen Bermuda and Aspen U.K., the ceding reinsurers. Silverton has not issued any Loan Notes since 2017.

All proceeds from the issuance of the Loan Notes were deposited into separate collateral accounts for each series of Loan Notes to fund Silverton’s obligations under a retrocession property quota share agreement entered into with Aspen Bermuda or Aspen Bermuda and Aspen U.K., as the case may be. The holders of the Loan Notes participated in any profit or loss generated by Silverton attributable to the operations of the respective Silverton segregated account. Any existing value of the Loan Notes was returned to the noteholders in installments after the expiration of the risk period of the retrocession agreement issued by Silverton for the related series of Loan Notes with the final payment being contractually due on the respective maturity dates.

A final payment was made to noteholders after commutation of the reinsurance agreement on July 1, 2019. Silverton has no further reinsurance commitments outstanding.

The following tables show the total liability balance of the Loan Notes for the twelve months ended December 31, 2019 and 2018:

	For the Twelve Months Ended December 31, 2019		
	Third Party	Aspen Holdings	Total
	(\$ in millions)		
Opening balance	\$ 4.6	\$ 1.1	\$ 5.7
Total change in fair value for the period	3.1	0.8	3.9
Total distributed in the period	(7.7)	(1.9)	(9.6)
Closing balance as at December 31, 2019	\$ —	\$ —	\$ —
Liability			
Loan notes (long-term liabilities)	\$ —	\$ —	\$ —
Accrued expenses (current liabilities)	—	—	—
Total aggregate unpaid balance as at December 31, 2019	\$ —	\$ —	\$ —

	For the Twelve Months Ended December 31, 2018		
	Third Party	Aspen Holdings	Total
	(\$ in millions)		
Opening balance	\$ 86.6	\$ 20.6	\$ 107.2
Total change in fair value for the period	4.4	1.1	5.5
Total distributed in the period	(86.4)	(20.6)	(107.0)
Closing balance as at December 31, 2018	\$ 4.6	\$ 1.1	\$ 5.7
Liability			
Loan notes (long-term liabilities)	\$ —	\$ —	\$ —
Accrued expenses (current liabilities)	4.6	1.1	5.7
Total aggregate unpaid balance as at December 31, 2018	\$ 4.6	\$ 1.1	\$ 5.7

The Company had determined that Silverton has the characteristics of a VIE that are addressed by the guidance in ASC 810, *Consolidation*. The Company concluded that it was the primary beneficiary of Silverton as it owned all of Silverton's voting shares and issued share capital, and had a significant financial interest in, and the power to control, Silverton. As a result, the Company consolidated Silverton upon its formation. The Company had no other obligation to provide financial support to Silverton and neither the creditors nor beneficial interest holders of Silverton had recourse to the Company's general credit.

After commutation of the 2017 reinsurance contract and settlement of all Loan Notes, the Company has determined that Silverton will no longer be regarded as a VIE.

For further information regarding the Loan Notes attributable to the third-party investments in Silverton, refer to Note 6, "Fair Value Measurements" of these consolidated financial statements.

6. Fair Value Measurements

The Company's estimates of fair value for financial assets and liabilities are based on the framework established in the fair value accounting guidance included in ASC Topic 820, "*Fair Value Measurements and Disclosures*." The framework prioritizes the inputs, which refer broadly to assumptions market participants would use in pricing an asset or liability, into three levels.

The Company considers prices for actively traded securities to be derived based on quoted prices in an active market for identical assets, which are Level 1 inputs in the fair value hierarchy. The majority of these securities are valued using prices supplied by pricing services.

The Company considers prices for other securities that may not be as actively traded which are priced via pricing services, vendors and broker-dealers, or with reference to interest rates and yield curves, to be derived based on inputs that are observable for the asset, either directly or indirectly, which are Level 2 inputs in the fair value hierarchy. The majority of these securities are also valued using prices supplied by pricing services.

The Company considers securities, other financial instruments, privately-held investments and derivative insurance contracts subject to fair value measurement whose valuation is derived by internal valuation models to be based largely on unobservable inputs, which are Level 3 inputs in the fair value hierarchy.

The following tables present the level within the fair value hierarchy at which the Company's financial assets and liabilities are measured on a recurring basis as at December 31, 2019 and December 31, 2018:

	As at December 31, 2019			Total
	Level 1	Level 2	Level 3	
	(\$ in millions)			
Available for sale financial assets, at fair value				
U.S. government	\$ 1,413.1	\$ —	\$ —	\$ 1,413.1
U.S. agency	—	39.6	—	39.6
Municipal	—	50.7	—	50.7
Corporate	—	1,959.8	—	1,959.8
Non-U.S. government-backed corporate	—	86.5	—	86.5
Non-U.S. government	199.8	129.0	—	328.8
Asset-backed	—	0.2	—	0.2
Non-agency commercial mortgage-backed	—	6.5	—	6.5
Agency mortgage-backed	—	1,073.0	—	1,073.0
Total fixed income securities available for sale, at fair value	1,612.9	3,345.3	—	4,958.2
Short-term investments available for sale, at fair value	108.1	9.5	—	117.6
Held for trading financial assets, at fair value				
U.S. government	185.0	—	—	185.0
Municipal	—	3.2	—	3.2
Corporate	—	243.2	—	243.2
Non-U.S. government-backed corporate	—	—	—	—
Non-U.S. government	48.3	102.9	—	151.2
Asset-backed	—	492.4	—	492.4
Agency mortgage-backed	—	53.8	—	53.8
Total fixed income securities trading, at fair value	233.3	895.5	—	1,128.8
Short-term investments trading, at fair value	79.2	—	—	79.2
Privately-held investments trading, at fair value	—	—	279.7	279.7
Catastrophe bonds trading, at fair value	—	28.6	—	28.6
Other investments ⁽¹⁾	—	—	—	111.4
Other financial assets and liabilities, at fair value				
Derivatives at fair value — foreign exchange contracts	—	12.9	—	12.9
Liabilities under derivative contracts — foreign exchange contracts	—	(8.9)	—	(8.9)
Derivatives at fair value — interest rate swaps	—	(78.3)	—	(78.3)
Loan notes issued by variable interest entities, at fair value (included within accrued expenses and other payables)	—	—	—	—
Total	\$ 2,033.5	\$ 4,204.6	\$ 279.7	\$ 6,629.2

⁽¹⁾ Other investments represents our investment in a real estate fund and is measured at fair value using the net asset value per share practical expedient. As a result this has not been classified in the fair value hierarchy. The fair value amounts presented in the table above are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets. The investment in the real estate fund is subject to restrictions as detailed in Note 20(a), "Commitments and Contingencies."

	At December 31, 2018			
	Level 1	Level 2	Level 3	Total
	(\$ in millions)			
Available for sale financial assets, at fair value				
U.S. government	\$ 1,404.2	\$ —	\$ —	\$ 1,404.2
U.S. agency	—	47.4	—	47.4
Municipal	—	47.2	—	47.2
Corporate	—	2,206.2	—	2,206.2
Non-U.S. government-backed corporate	—	93.2	—	93.2
Non-U.S. government	268.0	134.6	—	402.6
Asset-backed	—	17.3	—	17.3
Agency mortgage-backed	—	1,012.6	—	1,012.6
Total fixed income securities available for sale, at fair value	1,672.2	3,558.5	—	5,230.7
Short-term investments available for sale, at fair value	93.7	11.9	—	105.6
Held for trading financial assets, at fair value				
U.S. government	147.7	—	—	147.7
Municipal	—	2.7	—	2.7
Corporate	—	720.2	—	720.2
Non-U.S. government-backed corporate	—	—	—	—
Non-U.S. government	68.2	197.2	—	265.4
Asset-backed	—	2.4	—	2.4
Agency mortgage-backed	—	49.4	—	49.4
Total fixed income securities trading, at fair value	215.9	971.9	—	1,187.8
Short-term investments trading, at fair value	4.5	5.0	—	9.5
Catastrophe bonds trading, at fair value	—	36.2	—	36.2
Other investments ⁽¹⁾	—	—	—	102.5
Other financial assets and liabilities, at fair value				
Derivatives at fair value — foreign exchange contracts	—	14.6	—	14.6
Liabilities under derivative contracts — foreign exchange contracts	—	(15.1)	—	(15.1)
Loan notes issued by variable interest entities, at fair value (included within accrued expenses and other payables)	—	—	(4.6)	(4.6)
Total	\$ 1,986.3	\$ 4,583.0	\$ (4.6)	\$ 6,667.2

⁽¹⁾ Other investments represents our investment in a real estate fund and is measured at fair value using the net asset value per share practical expedient. As a result this has not been classified in the fair value hierarchy. The fair value amounts presented in the table above are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets. The investment in the real estate fund is subject to restrictions as detailed in Note 20(a), “Commitments and Contingencies.”

Transfers of assets into or out of a particular level are recorded at their fair values as of the end of each reporting period consistent with the date of the determination of fair value. During the twelve months ended December 31, 2019 and December 31, 2018, there were no transfers between Level 1, Level 2 and Level 3.

As at December 31, 2019, there were privately-held investments worth \$279.7 million (December 31, 2018 — \$Nil) classified as Level 3. The Company settled \$7.7 million Level 3 liabilities in respect of the Loan Notes issued by Silverton and therefore no other liabilities were classified as Level 3 for the twelve months ended December 31, 2019.

As at December 31, 2018, there were no assets classified as Level 3 and the Company’s Level 3 liabilities consisted solely of the Loan Notes issued by Silverton. The Company settled \$86.4 million Level 3 liabilities in respect to the Loan Notes issued by Silverton for the twelve months ended December 31, 2018.

The following table presents a reconciliation of the beginning and ending balances for all assets and liabilities measured at fair value on a recurring basis using Level 3 inputs for the twelve months ended December 31, 2019 and December 31, 2018:

Twelve Months Ended December 31, 2019	Balance at beginning of year	Purchases and issuances	Settlements and sales	Increase/ (decrease) in fair value included net income	Balance at end of year	Change in unrealized investment gains (losses) relating to assets held at end of year
Assets						
Privately-held investments — trading						
Commercial mortgage loans	\$ —	\$ 174.7	\$ (20.1)	\$ 1.7	\$ 156.4	\$ 0.3
Middle market loans	—	115.5	(3.8)	0.1	111.7	—
Asset-backed securities	—	8.7	—	—	8.7	—
Equity securities	—	2.7	—	—	2.7	—
Total Level 3 assets	<u>\$ —</u>	<u>\$ 301.5</u>	<u>\$ (23.9)</u>	<u>\$ 1.8</u>	<u>\$ 279.5</u>	<u>\$ 0.3</u>
Liabilities						
Loan notes issued by Silverton ⁽¹⁾	\$ 4.6	\$ —	\$ (7.7)	\$ 3.1	\$ —	\$ —
Total Level 3 liabilities	<u>\$ 4.6</u>	<u>\$ —</u>	<u>\$ (7.7)</u>	<u>\$ 3.1</u>	<u>\$ —</u>	<u>\$ —</u>
Twelve Months Ended December 31, 2018						
Liabilities						
Loan notes issued by Silverton ⁽¹⁾	\$ 86.6	\$ —	\$ (86.4)	\$ 4.4	\$ 4.6	\$ —
Total Level 3 liabilities	<u>\$ 86.6</u>	<u>\$ —</u>	<u>\$ (86.4)</u>	<u>\$ 4.4</u>	<u>\$ 4.6</u>	<u>\$ —</u>

⁽¹⁾ The amount classified as other payables was \$Nil and \$4.6 million as at December 31, 2019 and December 31, 2018, respectively.

Valuation of Fixed Income Securities. The Company's fixed income securities are classified as either available for sale or trading and are carried at fair value. As at December 31, 2019 and December 31, 2018, the Company's fixed income securities were valued by pricing services or broker-dealers using standard market conventions. The market conventions utilize market quotations, market transactions in comparable instruments and various relationships between instruments including, but not limited to, yield to maturity, dollar prices and spread prices in determining value.

Independent Pricing Services. The underlying methodology used to determine the fair value of securities in the Company's available for sale and trading portfolios is by the pricing services. Pricing services will gather observable pricing inputs from multiple external sources, including buy and sell-side contacts and broker-dealers, in order to develop their internal prices.

Pricing services provide pricing for less complex, liquid securities based on market quotations in active markets. Pricing services supply prices for a broad range of securities including those for actively traded securities, such as Treasury and other Government securities, in addition to those that trade less frequently or where valuation includes reference to credit spreads, pay down and pre-pay features and other observable inputs. These securities include Government agency, municipals, corporate and asset-backed securities.

For securities that may trade less frequently or do not trade on a listed exchange, these pricing services may use matrix pricing consisting of observable market inputs to estimate the fair value of a security. These observable market inputs include: reported trades, benchmark yields, broker-dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, reference data, and industry and economic factors. Additionally, pricing services may use a valuation model such as an option adjusted spread model commonly used for estimating fair values of mortgage-backed and asset-backed securities. The Company does not derive dollar prices using an index as a pricing input for any individual security.

Broker-Dealers. The Company obtains quotes from broker-dealers who are active in the corresponding markets when prices are unavailable from independent pricing services or index providers. Generally, broker-dealers value securities through their trading desks based on observable market inputs. Their pricing methodologies include mapping securities based on trade data, bids or offers, observed spreads and performance of newly issued securities. They may also establish pricing through observing secondary trading of similar securities. Quotes from broker-dealers are non-binding.

The Company obtains prices for all of its fixed income investment securities via its third-party accounting service provider, and in the majority of cases receiving a number of quotes so as to obtain the most comprehensive information available to determine a security's fair value. A single valuation is applied to each security based on the vendor hierarchy maintained by the Company's third-party accounting service provider.

As at December 31, 2019, the Company obtained an average of 2.4 quotes per fixed income investment compared to 2.2 quotes at December 31, 2018.

The Company, in conjunction with its third-party accounting service provider, obtains an understanding of the methods, models and inputs used by the third-party pricing service and index providers to assess the ongoing appropriateness of vendors' prices. The Company and its third-party accounting service provider also have controls in place to validate that amounts provided represent fair values. Processes to validate and review pricing include, but are not limited to:

- quantitative analysis (e.g., comparing the quarterly return for each managed portfolio to its target benchmark, with significant differences identified and investigated);
- comparison of market values obtained from pricing services and broker-dealers against alternative price sources for each security where further investigation is completed when significant differences exist for pricing of individual securities between pricing sources;
- initial and ongoing evaluation of methodologies used by outside parties to calculate fair value; and
- comparison of the fair value estimates to the Company's knowledge of the current market.

Prices obtained from pricing services and broker-dealers are not adjusted by us; however, prices provided by a pricing service, or broker-dealer in certain instances may be challenged based on market or information available from internal sources, including those available to the Company's third-party investment accounting service provider. Subsequent to any challenge, revisions made by the pricing service or broker-dealer to the quotes are supplied to the Company's investment accounting service provider.

Management reviews the vendor hierarchy maintained by the Company's third-party accounting service provider in order to determine which price source provides the most appropriate fair value (i.e., a price obtained from a pricing service with more seniority in the hierarchy will be used over a less senior one in all cases). The hierarchy level assigned to each security in the Company's available for sale and trading portfolios is based upon its assessment of the transparency and reliability of the inputs used in the valuation as of the measurement date. The hierarchy of pricing services is determined using various qualitative and quantitative points arising from reviews of the vendors conducted by the Company's third-party accounting service provider. Vendor reviews include annual onsite due diligence meetings with index providers and pricing services vendors covering valuation methodology, operational walkthroughs and legal and compliance updates.

Fixed Income Securities. Fixed income securities are traded on the over-the-counter ("OTC") market based on prices provided by one or more market makers in each security. Securities such as U.S. Government, U.S. Agency, Foreign Government and investment grade corporate bonds have multiple market makers in addition to readily observable market value indicators such as expected credit spread, except for Treasury securities, over the yield curve. The Company uses a variety of pricing sources to value fixed income securities including those securities that have pay down/prepay features such as mortgage-backed securities and asset-backed securities in order to ensure fair and accurate pricing. The fair value estimates for the investment grade securities in the Company's portfolio do not use significant unobservable inputs or modeling techniques.

U.S. Government and Agency Securities. U.S. government and agency securities consist primarily of bonds issued by the U.S. Treasury and corporate debt issued by agencies such as the Federal National Mortgage Association ("FNMA"), the Federal Home Loan Mortgage Corporation ("FHLMC") and the Federal Home Loan Bank. As the fair values of U.S. Treasury securities are based on unadjusted market prices in active markets, they are classified within Level 1. The fair values of U.S. government agency securities are priced using the spread above the risk-free yield curve. As the yields for the risk-free yield curve and the spreads for these securities are observable market inputs, the fair values of U.S. government agency securities are classified within Level 2.

Municipal Securities. The Company's municipal portfolio consist of bonds issued by U.S. domiciled state and municipality entities. The fair value of these securities is determined using spreads obtained from broker-dealers, trade prices and the new issue market which are Level 2 inputs in the fair value hierarchy. Consequently, these securities are classified within Level 2.

Non-U.S. Government. The issuers for securities in this category are non-U.S. governments and their agents including, but not limited to, the U.K., Australia, Canada, France and Germany. The fair values of certain non-U.S. government bonds, primarily sourced from international indices, are based on unadjusted market prices in active markets and are therefore classified within Level 1. The remaining non-U.S. government bonds are classified within level 2 as they are not actively traded. The fair values of the non-U.S. agency securities, again primarily sourced from international indices, are priced using the spread above the risk-free yield curve. As the yields for the risk-free yield curve and the spreads for these securities are observable market inputs, the fair values of non-U.S. agency securities are classified within Level 2. In addition, foreign government securities include a portion of the Emerging Market Debt ("EMD") portfolio which is also classified within Level 2.

Corporate. Corporate securities consist primarily of short-term, medium-term and long-term debt issued by U.S. and foreign corporations covering a variety of industries and are generally priced by index providers and pricing vendors. Some issuers may participate in government programs which guarantee timely payment of principal and interest in the event of a default. The fair values of these securities are generally determined using the spread above the risk-free yield curve. Inputs used in the evaluation of these securities include credit data, interest rate data, market observations and sector news, broker-dealer quotes and trade volumes. In addition, corporate securities include a portion of the EMD portfolio. The Company classifies all of these securities within Level 2.

Mortgage-backed Securities. Residential and commercial mortgage-backed securities consist of bonds issued by the Government National Mortgage Association, the FNMA and the FHLMC as well as private non-agency issuers. The fair values of these securities are determined through the use of a pricing model (including Option Adjusted Spread) which uses prepayment speeds and spreads to determine the appropriate average life of the mortgage-backed security. These spreads are generally obtained from broker-dealers, trade prices and the new issue market. As the significant inputs used to price mortgage-backed securities are observable market inputs, these securities are classified within Level 2.

Asset-backed Securities. Asset-backed securities are securities backed by notes or receivables against assets other than real estate. The underlying collateral for the Company's asset-backed securities consists mainly of student loans, automobile loans and credit card receivables. These securities are primarily priced by index providers and pricing vendors. Inputs to the valuation process include broker-dealer quotes and other available trade information, prepayment speeds, interest rate data and credit spreads. The Company classifies these securities within Level 2.

Short-term Investments. Short-term investments consist of highly liquid debt securities with a maturity greater than three months but less than one year from the date of purchase. Short-term investments are classified as either trading or available for sale according to the facts and circumstances of the investment held. Short-term investments are valued in a manner similar to the Company's fixed maturity investments and are classified within Levels 1 and 2.

Privately-Held Investments. Privately-held investments are initially valued at cost or transaction value which approximates fair value. In subsequent measurement periods, the fair values of these securities are determined using internally developed discounted cash flow models. These models include inputs that are specific to each investment. The inputs used in the fair value measurements include dividend or interest rates and appropriate discount rates. The selection of an appropriate discount rate is judgmental and is the most significant unobservable input used in the valuation of these securities. A significant increase (decrease) in this input in isolation could result in significantly lower (higher) fair value measurement for privately-held investments. In order to assess the reasonableness of the inputs the Company uses in the discounted cash flow models, the Company maintains an understanding of current market conditions, issuer specific information that may impact future cash flows as well as collaboration with independent vendors for most securities to assess the reasonableness of the discount rate being used.

The following table summarizes the quantitative inputs and assumptions used for financial assets and liabilities categorized as Level 3 under the fair value hierarchy as at December 31, 2019:

At December 31, 2019	Fair Value Level 3	Valuation Techniques	Unobservable (U) inputs	Ranges		Weighted Average
	(\$ in millions)					
Privately-held investments — Trading						
Commercial mortgage loans	\$ 125.7	Discounted cash flow	Discount rate	5.0%	6.3%	5.8%
Commercial mortgage loans	30.9	Transaction Value	n/a	n/a	n/a	n/a
Middle market loans	111.7	Discounted cash flow	Discount rate	6.8%	10.3%	7.9%
Asset-backed securities	8.7	Discounted cash flow	Discount rate	6.4%	6.4%	6.4%
Equity securities	\$ 2.7	Transaction Value	n/a	n/a	n/a	n/a
	\$ 279.7					

Catastrophe Bonds. Catastrophe bonds are variable rate fixed income instruments with redemption values adjusted based on the occurrence of a covered event, usually windstorms and earthquakes. Catastrophe bonds are classified as trading and carried at fair value. Catastrophe bonds are priced using an average of multiple broker-dealer quotes and as such, are considered Level 2.

Foreign Exchange Contracts. The foreign exchange contracts which the Company uses to mitigate currency risk are characterized as OTC due to their customized nature and the fact that they do not trade on a major exchange. These instruments trade in a very deep liquid market, providing substantial price transparency and accordingly are classified as Level 2.

Interest Rate Swaps. The interest rate swaps which the Company uses to mitigate interest risk are characterized as OTC and are valued by the counterparty using quantitative models with multiple market inputs. The market inputs, such as interest rates and yield curves, are observable and the valuation can be compared for reasonableness with third-party pricing services. Consequently, these instruments are classified as Level 2.

Other investments. The Company's other investments represent our investment in a real estate fund. Adjustments to the fair value are made based on the net asset value of the investment. The net valuation criteria established by the manager of such investments are established in accordance with the governing documents and the asset manager's valuation guidelines, which consider a two part approach: the discounted cash flows approach and the performance multiple approach, which uses a multiple/capitalization rate derived from market metrics from comparable companies or assets to produce operating performance metrics. Alternative valuation methodologies may be employed for investments with unusual characteristics.

Loan Notes Issued by Variable Interest Entities. Silverton, a Bermuda special purpose insurer, was consolidated into the Company's group accounts as a VIE. In the fourth quarter of 2014, Silverton issued \$85.0 million (\$70.0 million third-party funded) of Loan Notes that matured on September 18, 2017. During the fourth quarter of 2015, Silverton issued \$125.0 million (\$100.0 million third-party funded) of Loan Notes that matured on September 17, 2018. In the fourth quarter of 2016, Silverton issued \$130.0 million (\$105.0 million third-party funded) of Loan Notes. A final payment was made to noteholders after commutation of the reinsurance agreement on July 1, 2019. Silverton has no further reinsurance commitments outstanding.

The Company elected to account for the Loan Notes at fair value using the guidance as prescribed under ASC 825, *Financial Instruments* as the Company believes it represents the most meaningful measurement basis for these liabilities. The Loan Notes are recorded at fair value at each reporting period and, given they are not quoted on an active market and contain significant unobservable inputs, they have been classified as Level 3 instruments in the Company's fair value hierarchy. The Loan Notes are unique because they are linked to the specific risks of the Company's property catastrophe book.

To determine the fair value of the Loan Notes the Company runs an internal model which considers the seasonality of the risk assumed under the retrocessional agreement between Aspen Bermuda or a combination of Aspen Bermuda and Aspen U.K., as ceding reinsurers, and Silverton. The seasonality used in the model is determined by applying the percentage of property catastrophe losses planned by the Company's actuaries to the estimated written premium to determine earned premium for each quarter. The inputs to the internal valuation model are based on Company specific data due to the lack of observable market inputs. Reserves for losses are the most significant unobservable input. An increase in reserves for losses would normally result in a decrease in the fair value of the Loan Notes while a decrease in reserves would normally result in an increase in the fair value of the Loan Notes. The Loan Notes were redeemed as at December 31, 2019 and therefore the table below only presents the observable and unobservable inputs used to determine the fair value of the Loan Notes as at December 31, 2018.

At December 31, 2018	Fair Value Level 3	Valuation Method	Observable (O) and Unobservable (U) inputs	Low	High
	(\$ in millions)			(\$ in millions)	
Loan Notes	\$ 4.6 ⁽¹⁾	Internal Valuation Model	Gross premiums written (O)	\$ 50.1	\$ 61.1
			Reserve for losses (U)	\$ 4.2	\$ 61.9
			Contract period (O)	N/A	365 days
			Initial value of issuance (O)	\$ 325.0	\$ 325.0

⁽¹⁾ The amount classified as other payables was \$Nil and \$4.6 million as at December 31, 2019 and December 31, 2018, respectively.

The observable and unobservable inputs represent the potential variation around the inputs used in the valuation model. The contract period is defined in the respective Loan Notes agreement and the initial value represents the funds received from third parties.

7. Reinsurance

The Company purchases retrocession and reinsurance to limit and diversify the Company's risk exposure and to increase its own insurance and reinsurance underwriting capacity. These agreements provide for recovery of a portion of losses and loss adjustment expenses from reinsurers. As is the case with most reinsurance contracts, the Company remains liable to the extent that reinsurers do not meet their obligations under these agreements. In line with its risk management objectives, the Company evaluates the financial condition of its reinsurers and monitors concentrations of credit risk.

Balances pertaining to reinsurance transactions are reported "gross" on the consolidated balance sheet, meaning that reinsurance recoverable on unpaid losses and ceded unearned premiums are not deducted from insurance reserves but are recorded

as assets. For more information on reinsurance recoverables, refer to Note 20, “Concentrations of Credit Risk — Reinsurance recoverables” and Note 10, “Reserves for Losses and Loss Adjustment Expenses” of these consolidated financial statements.

The effect of assumed and ceded reinsurance on premiums written, premiums earned and insurance losses and loss adjustment expenses for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

	Twelve Months Ended December 31,		
	2019	2018	2017
	(\$ in millions)		
Premiums written:			
Direct	\$ 1,956.9	\$ 1,951.2	\$ 1,812.4
Assumed	1,485.5	1,495.7	1,548.5
Ceded	(1,014.5)	(1,364.9)	(1,148.4)
Net premiums written	<u>\$ 2,427.9</u>	<u>\$ 2,082.0</u>	<u>\$ 2,212.5</u>
Premiums earned:			
Direct	\$ 1,927.5	\$ 1,940.5	\$ 1,757.4
Assumed	1,494.9	1,593.9	1,451.8
Ceded	(1,129.1)	(1,319.7)	(902.6)
Net premiums earned	<u>\$ 2,293.3</u>	<u>\$ 2,214.7</u>	<u>\$ 2,306.6</u>
Insurance losses and loss adjustment expenses:			
Direct	\$ 1,415.5	\$ 1,458.9	\$ 1,673.6
Assumed	1,147.9	1,196.1	1,399.9
Ceded	(883.7)	(1,082.0)	(1,078.8)
Net insurance losses and loss adjustment expenses	<u>\$ 1,679.7</u>	<u>\$ 1,573.0</u>	<u>\$ 1,994.7</u>

The Company acquired retrospective reinsurance coverage during the twelve months ended December 31, 2017 as part of a loss portfolio transfer in the amount of \$125.5 million which has been recognized within ceded insurance losses. For more information on the loss portfolio transfer, refer to Note 10, “Reserves for Losses and Loss Adjustment Expenses” of these consolidated financial statements.

8. Derivative Contracts

The following table summarizes information on the location and amounts of derivative fair values on the consolidated balance sheet as at December 31, 2019 and 2018:

Derivatives Not Designated as Hedging Instruments Under ASC 815	Balance Sheet Location	As at December 31, 2019		As at December 31, 2018	
		Notional Amount	Fair Value	Notional Amount	Fair Value
		(\$ in millions)		(\$ in millions)	
Foreign Exchange Contracts	Derivatives at Fair Value	\$ 687.3	\$ 8.1 ⁽¹⁾	\$ 496.5	\$ 14.6 ⁽¹⁾
Foreign Exchange Contracts	Liabilities under Derivative Contracts	\$ 1,009.0	\$ (8.9)	\$ 760.8	\$ (13.9)
Interest Rate Swaps	Liabilities under Derivative Contracts	\$ 1,800.0	\$ (78.3) ⁽²⁾	\$ —	\$ —

⁽¹⁾ Net of \$2.9 million of cash collateral (December 31, 2018 — \$2.3 million).

⁽²⁾ Initial and variation margin of \$111.1 million has been posted (December 31, 2018 — \$Nil).

Derivatives Designated as Hedging Instruments Under ASC 815	Balance Sheet Location	As at December 31, 2019		As at December 31, 2018	
		Notional Amount	Fair Value	Notional Amount	Fair Value
		(\$ in millions)		(\$ in millions)	
Foreign Exchange Contracts	Derivatives at Fair Value	\$ 85.5	\$ 4.8	\$ —	\$ —
Foreign Exchange Contracts	Liabilities under Derivative Contracts	\$ —	\$ —	\$ 94.3	\$ (1.2)

The following table provides the unrealized and realized gains/(losses) recorded in the statements of operations and other comprehensive income for derivatives that are not designated or designated as hedging instruments under ASC 815 — “*Derivatives and Hedging*” for the twelve months ended December 31, 2019 and 2018:

Derivatives not designated as hedges	Location of Gain/(Loss) Recognized on Derivatives	Amount of (Loss)/Gain Recognized on Derivatives	
		For the Twelve Months Ended	
		December 31, 2019	December 31, 2018
		(\$ in millions)	
Foreign Exchange Contracts	Change in Fair Value of Derivatives	(14.0)	(31.8)
Interest Rate Swaps	Change in Fair Value of Derivatives	(130.2)	—
Derivatives designated as hedges			
Foreign Exchange Contracts	General, administrative and corporate expenses	0.9	(1.2)
Foreign Exchange Contracts	Net change from current period hedged transactions	4.8	(2.1)

Foreign Exchange Contracts. The Company uses foreign exchange contracts to manage foreign currency risk associated with our operating expenses but also foreign exchange risk associated with net assets or liabilities in currencies other than the U.S. dollar. A foreign exchange contract involves an obligation to purchase or sell a specified currency at a future date at a price set at the time of the contract. Foreign exchange contracts will not eliminate fluctuations in the value of the Company’s assets and liabilities denominated in foreign currencies but rather allow it to establish a rate of exchange for a future point in time.

As at December 31, 2019, the Company held foreign exchange contracts that were not designated as hedging under ASC 815 with an aggregate nominal amount of \$1,696.3 million (2018 — \$1,257.3 million). The foreign exchange contracts are recorded as derivatives at fair value in the balance sheet with changes recorded as a change in fair value of derivatives in the statement of operations. For the twelve months ended December 31, 2019, the impact of foreign exchange contracts on net income was a loss of \$14.0 million (December 31, 2018 — loss of \$31.8 million).

As at December 31, 2019, the Company held foreign exchange contracts that were designated as hedging under ASC 815 with an aggregate nominal amount of \$85.5 million (2018 — \$94.3 million). The foreign exchange contracts are recorded as derivatives at fair value in the balance sheet with the effective portion recorded in other comprehensive income and the ineffective portion recorded as a change in fair value of derivatives in the statement of operations. The contracts are considered to be effective and therefore the movement in other comprehensive income representing the effective portion for the twelve months ended December 31, 2019 was a gain of \$4.8 million (December 31, 2018 — loss of \$2.1 million).

As the foreign exchange contracts settle, the realized gain or loss is reclassified from other comprehensive income into general, administration and corporate expenses of the statement of operations and other comprehensive income. For the twelve months ended December 31, 2019, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$0.9 million (December 31, 2018 — loss of \$1.2 million).

Interest Rate Swaps. In the first quarter of 2019, the Company entered into fixed for floating interest rate swaps with a total notional amount of \$3,318.0 million due to mature between January 18, 2021 and January 18, 2034. The total notional amount as at December 31, 2019 was \$1,800.0 million. The interest rate swaps are used in the ordinary course of the Company’s investments activities to partially mitigate any negative impact of rises in interest rates on the market value of the Company’s fixed income portfolio. For the twelve months ended December 31, 2019, there was a loss of \$130.2 million (December 31, 2018 — \$Nil).

As at December 31, 2019, initial and variation margin with a fair value of \$111.1 million was posted to a Futures Commission Merchant to support the current valuation of the interest rate swaps (December 31, 2018 — \$Nil). As at December 31, 2019, no non-cash collateral was transferred to the Company by its counterparties (December 31, 2018 — \$Nil). Transfers of margin are recorded on the consolidated balance sheet within Derivatives at Fair Value, while transfers in respect of non-cash collateral are

disclosed but not recorded. As at December 31, 2019, no amount was recorded in the consolidated balance sheet for the pledged assets.

9. Deferred Policy Acquisition Costs

The following table represents a reconciliation of beginning and ending deferred policy acquisition costs for the twelve months ended December 31, 2019 and 2018:

	Twelve Months Ended December 31, 2019	Twelve Months Ended December 31, 2018
	(\$ in millions)	
Balance at the beginning of the period	\$ 248.5	\$ 294.3
Acquisition costs deferred	455.3	325.8
Amortization of deferred policy acquisition costs	(412.7)	(371.6)
Balance at the end of the period	<u>\$ 291.1</u>	<u>\$ 248.5</u>

10. Reserves for Losses and Loss Adjustment Expenses

The following table represents a reconciliation of beginning and ending consolidated loss and LAE reserves for the twelve months ended December 31, 2019, 2018 and 2017:

	As at December 31,		
	2019	2018	2017
	(\$ in millions)		
Provision for losses and LAE at the start of the year	\$ 7,074.2	\$ 6,749.5	\$ 5,319.9
Less reinsurance recoverable	(2,077.6)	(1,515.2)	(560.7)
Net loss and LAE at the start of the year	<u>4,996.6</u>	<u>5,234.3</u>	<u>4,759.2</u>
Net loss and LAE expenses (disposed)	—	—	(125.5)
Movement in net provision for losses and LAE for claims incurred:			
Current year	1,620.2	1,684.1	2,100.1
Prior years	59.5	(111.1)	(105.4)
Total incurred	<u>1,679.7</u>	<u>1,573.0</u>	<u>1,994.7</u>
Losses and LAE payments for claims incurred:			
Current year	(428.5)	(285.7)	(397.5)
Prior years	(1,694.1)	(1,441.0)	(1,157.6)
Total paid	<u>(2,122.6)</u>	<u>(1,726.7)</u>	<u>(1,555.1)</u>
Foreign exchange losses/(gains)	<u>78.3</u>	<u>(84.0)</u>	<u>161.0</u>
Net losses and LAE reserves at the end of the year	4,632.0	4,996.6	5,234.3
Plus reinsurance recoverable on unpaid losses at the end of the year	2,319.8	2,077.6	1,515.2
Provision for losses and LAE at the end of the year	<u>\$ 6,951.8</u>	<u>\$ 7,074.2</u>	<u>\$ 6,749.5</u>

For the twelve months ended December 31, 2019, there was an increase of \$59.5 million in the Company's estimate of the ultimate claims to be paid in respect of prior accident years compared to a reduction of \$111.1 million for the twelve months ended December 31, 2018. In the twelve months ended December 31, 2017, the Company ceded \$125.5 million as part of a loss portfolio transfer agreement.

The following tables show an analysis of incurred claims and allocated loss adjustment expenses, net of reinsurance and cumulative paid claims and allocated claim adjustment expenses, net of reinsurance as at December 31, 2019, 2018, 2017, 2016, 2015, 2014, 2013 and 2012. The loss development triangles are derived from all business written by the Company as although a limited number of contracts are written which have durations of greater than one year the contracts do not meet the definition of a long duration contract.

Property Insurance Lines										
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance									As at December 31, 2019	
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years								Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	2012	2013	2014	2015	2016	2017	2018	2019		
\$ (in millions)										
2012	169.8	167.9	166.6	165.5	159.9	154.0	153.0	153.0	—	6,075
2013		130.0	117.2	116.9	112.6	113.6	111.6	111.9	0.4	5,759
2014			165.4	157.3	134.2	134.9	134.1	132.6	1.5	9,989
2015				240.2	205.8	200.3	202.6	203.1	2.6	11,597
2016					238.8	249.6	244.5	245.8	7.4	10,738
2017						296.1	259.0	252.2	10.3	9,532
2018							203.7	206.3	18.4	7,913
2019								\$ 127.3	42.4	5,291
							Total	\$ 1,432.2		

Property Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years									
	2012	2013	2014	2015	2016	2017	2018	2019		
(\$ in millions)										
2012	41.3	129.1	138.7	152.7	156.8	154.3	153.6	153.6	153.6	
2013		38.9	75.9	89.1	101.1	105.7	108.4	110.2	110.2	
2014			40.4	86.6	114.1	123.8	127.9	129.3	129.3	
2015				57.3	142.9	170.8	179.9	196.4	196.4	
2016					67.0	169.0	201.6	223.7	223.7	
2017						96.6	188.9	222.0	222.0	
2018							62.2	161.1	161.1	
2019								49.3	49.3	
							Total	\$ 1,245.6		
										All outstanding liabilities for 2012 and subsequent years, net of reinsurance
										\$ 186.6
										All outstanding liabilities before 2012, net of reinsurance
										4.1
										Liabilities for claims and claim adjustment expenses, net of reinsurance
										\$ 190.7

Casualty Insurance Lines										
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance									As at December 31, 2019	
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years								Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	2012	2013	2014	2015	2016	2017	2018	2019		
	(\$ in millions)									
2012	78.0	62.8	70.0	61.1	69.0	66.6	68.6	70.5	8.0	2,951
2013		132.9	116.5	114.9	120.4	103.4	104.6	104.8	10.8	3,239
2014			144.9	127.2	139.0	129.2	136.3	140.4	24.8	3,723
2015				203.6	223.6	186.2	203.9	236.7	38.7	4,577
2016					217.4	188.5	183.8	190.4	70.4	4,509
2017						181.6	175.0	179.0	35.3	5,022
2018							123.0	125.9	57.7	4,938
2019								\$ 125.6	89.2	3,625
							Total	<u>1,173.3</u>		

Casualty Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years									
	2012	2013	2014	2015	2016	2017	2018	2019		
	(\$ in millions)									
2012	1.3	6.6	14.2	29.7	40.9	49.3	50.1	54.7		
2013		2.2	25.8	39.5	53.0	68.4	80.8	85.1		
2014			2.7	13.4	32.7	59.8	73.2	97.3		
2015				3.2	17.1	56.6	92.9	138.8		
2016					4.2	22.9	40.3	82.8		
2017						3.6	23.0	53.0		
2018							3.2	28.0		
2019								6.4		
							Total	<u>\$ 546.1</u>		
	All outstanding liabilities for 2012 and subsequent years, net of reinsurance									\$ 627.2
	All outstanding liabilities before 2012, net of reinsurance									42.0
	Liabilities for claims and claim adjustment expenses, net of reinsurance									<u>\$ 669.2</u>

Marine, Aviation and Energy Insurance Lines									As at December 31, 2019	
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Unaudited Prior Years										
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019	Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
(\$ in millions)										
2012	268.5	306.0	325.5	346.2	331.8	327.9	316.2	310.9	7.0	3,808
2013		320.8	333.7	342.3	325.8	332.9	346.4	345.1	5.2	4,171
2014			309.8	314.1	298.9	310.6	306.1	313.0	11.6	4,027
2015				297.3	300.3	282.5	286.5	310.0	24.9	4,030
2016					260.6	230.5	229.1	229.3	26.6	4,368
2017						210.7	201.0	207.3	17.2	5,894
2018							171.3	208.5	33.9	4,839
2019								\$ 146.5	67.7	2,532
								Total	2,070.6	

Marine, Aviation and Energy Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Unaudited Prior Years										
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019		
(\$ in millions)										
2012	51.3	132.2	174.7	210.9	239.7	250.6	273.5	274.4		
2013		41.5	131.6	204.9	235.3	264.7	284.3	300.4		
2014			53.5	116.8	189.3	210.0	232.7	250.9		
2015				44.9	123.4	174.4	194.2	222.2		
2016					30.9	82.6	142.5	164.1		
2017						40.2	97.7	140.3		
2018							26.8	104.9		
2019								\$ 33.5		
								Total	\$ 1,490.7	
All outstanding liabilities for 2012 and subsequent years, net of reinsurance									\$ 579.9	
All outstanding liabilities before 2012, net of reinsurance									11.6	
Liabilities for claims and claim adjustment expenses, net of reinsurance									\$ 591.5	

Financial and Professional Insurance Lines										
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance									As at December 31, 2019	
For the Years Ended December 31,										
Unaudited Prior Years									Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019		
(\$ in millions)										
2012	88.0	89.5	93.1	96.5	93.5	89.1	100.8	95.8	(1.6)	580
2013		105.6	100.1	104.5	101.2	100.2	91.3	90.3	7.7	572
2014			135.0	130.9	129.5	119.8	131.1	120.1	12.4	788
2015				174.2	175.6	185.6	189.8	191.0	47.7	1,077
2016					191.0	211.8	216.5	202.2	61.5	1,238
2017						206.8	183.1	187.9	70.9	1,688
2018							157.6	173.5	69.1	4,644
2019								\$ 249.7	195.9	10,797
								Total	\$ 1,310.5	

Financial and Professional Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Unaudited Prior Years										
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019		
(\$ in millions)										
2012	22.8	39.5	50.6	59.1	65.1	70.3	79.7	84.8		
2013		8.1	21.1	31.2	65.4	63.8	72.4	74.5		
2014			3.0	30.7	53.5	72.2	79.7	85.5		
2015				13.8	43.5	70.1	89.4	110.0		
2016					15.1	71.2	102.1	130.1		
2017						27.2	51.3	83.4		
2018							20.3	74.8		
2019								\$ 27.3		
								Total	\$ 670.4	
									All outstanding liabilities for 2012 and subsequent years, net of reinsurance	\$ 640.1
									All outstanding liabilities before 2012, net of reinsurance	17.3
									Liabilities for claims and claim adjustment expenses, net of reinsurance	\$ 657.4

Property Catastrophe and Other Property Reinsurance									As at December 31, 2019	
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Unaudited Prior Years										
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019	Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
\$(in millions)										
2012	280.3	303.5	286.6	279.2	282.6	279.6	272.1	262.0	8.5	664
2013		216.7	199.1	189.2	178.0	176.5	173.2	170.3	0.4	822
2014			190.3	177.7	161.8	150.5	150.9	146.0	2.2	905
2015				214.5	187.3	177.2	156.7	172.0	6.5	1,031
2016					271.6	271.5	269.8	248.1	8.2	1,278
2017						557.7	534.7	516.6	10.0	1,952
2018							349.9	406.8	14.2	1,769
2019								273.8	117.4	974
								<u>\$ 2,195.6</u>		

Property Catastrophe and Other Property Reinsurance										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Unaudited Prior Years										
Accident Year	2012	2013	2014	2015	2016	2017	2018	2019		
\$(in millions)										
2012	35.7	136.0	189.1	209.3	216.8	227.9	232.4	242.5		
2013		34.4	98.3	146.3	158.3	163.0	164.5	166.0		
2014			37.6	101.1	127.8	137.8	141.8	140.5		
2015				35.9	95.1	126.9	139.2	156.2		
2016					57.0	164.2	205.4	216.4		
2017						123.3	357.8	416.9		
2018							122.8	320.6		
2019								\$ 28.5		
							Total	<u>\$ 1,687.6</u>		
	All outstanding liabilities for 2012 and subsequent years, net of reinsurance								508.0	
	All outstanding liabilities before 2012, net of reinsurance								20.6	
	Liabilities for claims and claim adjustment expenses, net of reinsurance								<u>\$ 528.6</u>	

Casualty Reinsurance										
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance									As at December 31, 2019	
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years								Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	2012	2013	2014	2015	2016	2017	2018	2019		
\$ (in millions)										
2012	233.8	232.0	243.3	234.6	231.6	232.6	241.5	244.1	34.1	1,770
2013		214.5	229.7	225.0	222.3	205.4	200.6	203.3	39.6	1,648
2014			205.0	207.7	216.2	209.6	203.2	205.9	44.3	1,732
2015				194.3	201.2	210.7	213.3	210.9	56.3	1,832
2016					233.4	245.9	245.6	255.6	89.0	1,759
2017						245.2	242.9	253.6	129.0	1,474
2018							229.2	258.7	166.9	1,051
2019								235.3	207.6	375
								Total	<u>\$ 1,867.4</u>	

Casualty Reinsurance										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years									
	2012	2013	2014	2015	2016	2017	2018	2019		
(\$ in millions)										
2012	2.2	17.7	41.9	65.3	96.2	117.4	134.1	143.8		
2013		3.4	15.8	42.6	64.8	92.7	114.6	127.3		
2014			2.5	13.8	37.8	60.2	86.4	107.4		
2015				3.5	18.0	38.4	65.5	89.4		
2016					9.3	33.6	64.2	96.3		
2017						8.9	30.6	59.1		
2018							7.2	33.6		
2019										\$ 9.2
								Total		<u>\$ 666.1</u>
										1,201.2
										401.0
										<u>\$ 1,602.2</u>
All outstanding liabilities for 2012 and subsequent years, net of reinsurance										1,201.2
All outstanding liabilities before 2012, net of reinsurance										401.0
Liabilities for claims and claim adjustment expenses, net of reinsurance										<u>\$ 1,602.2</u>

Specialty Reinsurance										
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance									As at December 31, 2019	
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years								Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	2012	2013	2014	2015	2016	2017	2018	2019		
	(\$ in millions)									
2012	175.8	199.2	188.3	173.9	172.3	172.9	169.5	167.1	5.4	638
2013		144.1	139.3	131.5	119.7	118.9	115.1	114.9	4.8	574
2014			152.0	140.2	132.1	123.0	125.8	124.3	8.1	621
2015				166.3	170.2	164.8	159.1	157.9	11.1	765
2016					239.3	240.3	238.4	230.8	23.2	916
2017						379.9	392.6	376.1	51.0	1,303
2018							398.4	397.5	67.3	1,282
2019								\$ 476.7	154.6	1,080
							Total	\$ 2,045.3		

Specialty Reinsurance										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
For the Years Ended December 31,										
Accident Year	Unaudited Prior Years									
	2012	2013	2014	2015	2016	2017	2018	2019		
	(\$ in millions)									
2012	24.9	93.4	128.5	138.5	143.9	149.2	150.5	153.3		
2013		25.0	70.8	86.8	94.1	101.1	101.1	102.0		
2014			16.6	56.3	81.1	89.2	99.5	102.4		
2015				17.7	56.4	104.2	122.1	131.4		
2016					58.8	151.0	165.8	183.9		
2017						94.8	238.9	270.9		
2018							27.3	281.2		
2019								\$ 274.3		
							Total	\$ 1,499.4		
										545.9
										30.0
										\$ 575.9

Reconciliation of Incurred and Paid Claims Development to total Provision for Losses and LAE

	Twelve Months Ended December 31, 2019
	(\$ in millions)
Net outstanding liabilities:	
Insurance lines	
- Property insurance lines	190.7
- Casualty insurance lines	669.2
- Marine, aviation and energy insurance lines	591.5
- Financial and professional insurance lines	657.4
Total insurance lines	2,108.8
Reinsurance lines	
- Property catastrophe and other property reinsurance	528.6
- Casualty reinsurance	1,602.2
- Specialty reinsurance	575.9
Total reinsurance lines	2,706.7
Net loss and LAE	4,815.5
Reinsurance recoverable on unpaid losses:	
Insurance lines	1,772.8
Reinsurance lines	547.0
Total reinsurance recoverable on unpaid losses	2,319.8
Insurance lines other than short-duration	—
Unallocated claims incurred	44.0
Other reinsurance balances recoverable ⁽¹⁾	(227.4)
Other	(0.1)
	(183.5)
Provision for losses and LAE at the end of the year	6,951.8

⁽¹⁾ Other reinsurance balances recoverable primarily include amounts that have been billed but not yet received.

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance

Years	1	2	3	4	5	6	7	8
Insurance	15.8%	26.3%	16.1%	11.7%	8.5%	5.7%	4.4%	1.7%
Reinsurance	16.0%	29.7%	15.3%	8.8%	8.1%	5.0%	3.2%	3.3%

11. Income Taxes

Aspen Holdings and Aspen Bermuda are incorporated under the laws of Bermuda. Under Bermuda law, the corporate tax rate is zero and, as a result, Aspen Holdings and Aspen Bermuda are not taxed on any Bermudian income or capital gains. In the event of any Bermudian income or capital gains taxes being imposed, Aspen Holdings and Aspen Bermuda have received an undertaking from the Bermuda Minister of Finance that such entities will be exempt from those taxes until March 31, 2035.

The Company's U.S. operating companies were subject to a U.S. federal income tax rate of 34% prior to January 1, 2018. Effective January 1, 2018, the Company's U.S. operating companies are subject to a U.S. federal income tax rate of 21%. The reduction in U.S. federal income tax has been reflected in measuring the Company's deferred taxes.

The Company's U.K. operating companies are taxed at the U.K. corporate tax rate of 19%, which reduced from 20% effective April 1, 2017. The U.K. corporate tax rate will decrease further to 17% effective April 1, 2020. The reduction in the U.K. corporate tax rate has been reflected in measuring the Company's deferred taxes.

Total income tax (benefit)/expense for the twelve months ended December 31, 2019, 2018 and 2017 was allocated as follows:

	Twelve Months Ended December 31,		
	2019	2018	2017
	(\$ in millions)		
Income tax expense/(benefit) allocated to net loss	\$ 22.9	\$ (10.2)	\$ (15.4)
Income tax expense/(benefit) allocated to other comprehensive income	11.2	4.1	(17.4)
Total income tax expense/(benefit)	\$ 34.1	\$ (6.1)	\$ (32.8)

(Loss)/income from operations before tax and tax expense/(benefit) attributable to that (loss)/income for the twelve months ended December 31, 2019, 2018 and 2017 is provided in the tables below:

Twelve Months Ended December 31, 2019				
	(Loss) before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total tax (benefit)/expense
(\$ in millions)				
Bermuda	\$ (107.6)	\$ —	\$ —	\$ —
U.S. ⁽¹⁾⁽²⁾	(60.0)	1.0	6.5	7.4
U.K. ⁽³⁾	(45.7)	(6.7)	17.3	10.6
Other ⁽⁴⁾	(5.5)	4.0	0.9	4.9
Total	\$ (218.8)	\$ (1.7)	\$ 24.7	\$ 22.9

Twelve Months Ended December 31, 2018				
	(Loss) before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total tax (benefit)/expense
(\$ in millions)				
Bermuda	\$ (72.1)	\$ —	\$ —	\$ —
U.S.	(81.0)	6.1	(8.1)	(2.0)
U.K.	(4.7)	(12.2)	(0.1)	(12.3)
Other ⁽⁴⁾	1.8	4.4	(0.3)	4.1
Total	\$ (156.0)	\$ (1.7)	\$ (8.5)	\$ (10.2)

Twelve Months Ended December 31, 2017				
	(Loss) before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total tax (benefit)/expense
(\$ in millions)				
Bermuda	\$ (130.0)	\$ —	\$ —	\$ —
U.S.	(140.3)	—	1.1	1.1
U.K.	15.3	14.1	(33.3)	(19.2)
Other	(26.8)	3.0	(0.3)	2.7
Total	\$ (281.8)	\$ 17.1	\$ (32.5)	\$ (15.4)

⁽¹⁾ The \$1.0 million current tax expense includes \$1.0 million relating to prior years.

⁽²⁾ The \$6.5 million deferred tax expense includes a \$9.9 million valuation allowance against the losses incurred by the U.S. branch of Aspen U.K. Also included is a \$3.5 million benefit arising from an unrealized gain on investments, for which an equivalent tax expense has been included in Other Comprehensive Income.

⁽³⁾ The \$17.3 million deferred tax movement comprises of a \$10.9 million credit on operating losses and a \$28.2 million expense in respect of a valuation allowance against the net deferred tax assets in the U.K. subsidiaries.

⁽⁴⁾ Included in the current tax expense of \$4.0 million within “Other” is \$1.0 million (December 31, 2018 — \$4.4 million) withholding tax payable in Australia in respect of reinsurance premiums payable to Aspen Bermuda by the Australian branch of Aspen U.K.

As noted above, the tax rate in Bermuda, the Company's country of domicile, is zero. Application of the statutory tax rate for operations in other jurisdictions produces a differential to the expected tax (benefit)/expense as shown in the table below. The reconciliation between the income tax expense/(benefit) and the statutory rate for the Company for the twelve months ended December 31, 2019, 2018 and 2017 is provided in the table below:

	Twelve Months Ended December 31,		
	2019	2018	2017
	(\$ in millions)		
Income Tax Reconciliation			
Expected tax (benefit)/expense	\$ —	\$ —	\$ —
Overseas statutory tax rates differential	(21.2)	(17.1)	(41.5)
Base erosion and anti-abuse tax (BEAT) expense	0.3	6.0	—
Prior year adjustments ⁽¹⁾	(1.7)	1.4	1.3
Valuation allowance ⁽²⁾	42.6	7.1	(37.9)
Impact of unrecognized tax benefits ⁽³⁾	—	(12.8)	0.1
Restricted foreign tax credits	1.5	—	0.7
Australian non-resident withholding tax	1.0	4.4	0.9
Share-based payments	(0.6)	0.2	(0.9)
Foreign exchange	—	0.1	(2.1)
Non-deductible expenses	—	0.7	0.4
Non-taxable items	(0.1)	(0.3)	(0.9)
Impact of changes in statutory tax rates	1.1	0.1	64.5
Total income tax expense/(benefit)	<u>\$ 22.9</u>	<u>\$ (10.2)</u>	<u>\$ (15.4)</u>

⁽¹⁾ The submission dates for filing income tax returns for the Company's U.S. and U.K. operating subsidiaries are after the submission date of this report. Accordingly, the final tax liabilities may differ from the estimated tax expense included in this report and may result in prior year adjustments being reported. The prior period adjustments for the twelve months ended December 31, 2019, 2018 and 2017 predominantly relate to the determination of results under U.K. GAAP upon which the U.K. tax returns are based. These items can only be ultimately determined after this report is filed.

⁽²⁾ The 2019 valuation allowance includes \$9.9 million relating to the losses incurred by the U.S. branch of Aspen U.K. and \$28.2 million relating to deferred tax assets in U.K. subsidiaries.

⁽³⁾ In 2018, the \$12.8 million benefit relates to the successful conclusion of a U.K. tax inquiry which enabled the release of a provision we had been holding against the potential disallowance of a prior year adjustment.

Unrecognized tax benefits. An unrecognized tax benefit of \$11.0 million relating to tax deductions for certain expenses was released during the year ended December 31, 2018 following the completion of the U.K. tax authority review.

	Twelve Months Ended December 31,	
	2019	2018
	(\$ in millions)	
Unrecognized tax benefits balance at January 1	\$ —	\$ 11.2
Foreign exchange re-translation	—	(0.2)
Prior year reductions	\$ —	(11.0)
Unrecognized tax benefits balance at December 31	<u>\$ —</u>	<u>\$ —</u>

The Company accrues interest and penalties related to an underpayment of income taxes, if applicable, as income tax expense. The Company does not believe it will be subject to any penalties in any open tax years and has not accrued any such amounts for the twelve months ended December 31, 2019 (December 31, 2018 — \$Nil). In 2018, interest of \$1.8 million was released in respect of the tax position for the year 2011.

Income tax returns that have been filed by the Company's U.S. operating subsidiaries are subject to examination for 2016 and later tax years. The Company's U.K. operating subsidiaries' income tax returns are subject to examination for 2018 and later tax years.

The tax effects of temporary differences and carryforwards that give rise to deferred tax assets and deferred tax liabilities are presented in the following table as at December 31, 2019 and 2018:

	As at December 31,	
	2019	2018
	(\$ in millions)	
Deferred tax assets:		
Share-based payments	\$ 0.3	\$ 2.2
Operating loss carryforwards	121.5	126.4
Net loss reserves and loss adjustment expenses	5.0	5.0
Unrealized losses on investments	—	0.8
Accrued expenses	7.1	7.9
Foreign tax credit carryforwards	—	3.8
Unearned premiums	15.3	15.5
Deferred policy acquisition costs	0.1	—
Office properties and equipment	16.8	11.1
Operating lease liabilities	21.5	3.3
Other temporary differences	6.1	—
Total gross deferred tax assets	<u>193.7</u>	<u>176.0</u>
Less valuation allowance	(149.2)	(111.9)
Net deferred tax assets	<u>\$ 44.5</u>	<u>\$ 64.1</u>
Deferred tax liabilities:		
Equalization provision reserves	\$ —	\$ —
Unrealized (gains) on investments	(2.7)	—
Intangible assets	(1.6)	(2.5)
Deferred policy acquisition costs	(16.4)	(18.5)
Quota share losses	—	(0.6)
Loss portfolio transfer costs	—	(6.1)
Operating lease assets	(19.9)	—
Other temporary differences	(3.9)	(1.0)
Total gross deferred tax (liabilities)	<u>(44.5)</u>	<u>(28.7)</u>
Net deferred tax assets	<u>\$ —</u>	<u>\$ 35.4</u>

Deferred tax liabilities and assets represent the tax effect of temporary differences between the value of assets and liabilities for financial statement purposes and such values as measured by U.K. and U.S. tax laws and regulations. Deferred tax assets and liabilities from the same tax jurisdiction have been netted off resulting in assets and liabilities being recorded as deferred tax assets or liabilities in the consolidated balance sheet.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences and carry forwards become deductible or creditable. Management considers the scheduled reversal of existing taxable temporary differences, projected future taxable income, and tax-planning strategies in making this assessment.

As at December 31, 2019, the Company had incurred cumulative net operating losses carried forward for U.S. federal income tax purposes of \$606.8 million (2018 — \$599.4 million) and net operating losses carried forward for U.K. corporate tax purposes of \$93.2 million (2018 — \$59.3 million). Of the U.S. net operating losses, \$24.9 million is not accessible due to a §382 limitation arising from a change in ownership. Of the remaining \$581.9 million that are available to offset future U.S. federal taxable income, \$534.5 million will expire between 2026 and 2039 and \$47.4 million are available to offset future U.S. federal taxable income over an indefinite period. The U.K. net operating losses are available to offset future U.K. corporate income over an indefinite

period. For U.S. federal income tax purposes, the Company also has capital loss carryforwards of \$0.5 million (2018 — \$0.3 million) which will expire between 2023 and 2024 and charitable contribution carryforwards of \$1.1 million (2018 — \$0.8 million) with expiry periods between 2019 and 2024. For U.K. corporate tax purposes, the Company has capital loss carryforwards of \$3.8 million which is available to offset future U.K. capital gains over an indefinite period.

A full valuation allowance of \$117.4 million (2018 — \$108.2 million) on U.S. deferred tax assets (which includes these loss carryforwards) has been recognized at December 31, 2019 as management believes that it is probable that a tax benefit will not be realized. The increase in this portion of the valuation allowance totals \$9.2 million (2018 — \$7.1 million increase) with \$9.2 million (2018 — \$7.1 million increase) recorded in the consolidated income statement and \$Nil (2018 — \$Nil) recorded in other comprehensive income.

A valuation allowance of \$31.8 million (2018 — \$3.7 million) has been established against U.K. deferred tax assets. The increase in this portion of the valuation allowance totals \$28.2 million (2018 — \$Nil) with \$28.2 million (2018 — \$Nil) recorded in the consolidated income statement and \$Nil (2018 — \$Nil) recorded in other comprehensive income. The U.K. and U.S. valuation allowance combined total is \$149.2 million (2018 — \$111.9 million).

Aspen U.K. business includes income connected with a U.S. trade or business and therefore Aspen U.K. has a branch for U.S. tax purposes (“U.S. Branch”). The U.S. Branch could become subject to an additional branch profits tax if earnings are repatriated to the Aspen U.K. head office or upon termination of the U.S. branch. However, based on the plans currently in place, the U.S. Branch profits are being, and Aspen U.K. intends they will continue to be, indefinitely reinvested in the U.S. Branch such that there is no branch profits tax liability arising in the current period or in the foreseeable future. Furthermore, based on the cumulative earnings position as at December 31, 2019, \$Nil (2018 — \$Nil) branch profits tax liability would be expected to arise. Accordingly, the Company has determined that no deferred tax liability for branch profits tax has been recognized as permitted by ASC 740.

12. Capital Structure

The following table provides a summary of the Company’s authorized and issued share capital as at December 31, 2019 and 2018:

	As at December 31, 2019		At December 31, 2018	
	Number	\$ in Thousands	Number	\$ in Thousands
Authorized share capital:				
Ordinary Shares \$0.01 per share (2018 — 0.15144558¢ per share)	70,000,000	700	969,629,030	1,469
Non-Voting Shares 0.15144558¢ per share	—	—	6,787,880	10
Preference Shares 0.15144558¢ per share	30,000,000	45	100,000,000	152
Total authorized share capital		745		1,631
Issued share capital:				
Issued ordinary shares \$0.01 per share (2018 — 0.15144558¢ per share)	60,395,839	604	59,743,156	90
Issued 5.95% preference shares of 0.15144558¢ each with a liquidation preference of \$25 per share	11,000,000	17	11,000,000	17
Issued 5.625% preference shares of 0.15144558¢ each with a liquidation preference of \$25 per share	10,000,000	15	10,000,000	15
Issued 5.625% preference shares of 0.15144558¢ represented by depositary shares, each with a liquidation preference of \$25 per share ⁽¹⁾	10,000	—	—	—
Total issued share capital		636		122

⁽¹⁾ Each depositary share represents a 1/1000th interest in a share of the 5.625% preference shares.

Additional paid-in capital as at December 31, 2019 was \$1,201.7 million (December 31, 2018 — \$967.5 million). Included within additional paid-in capital is the aggregate liquidation preferences of the Company’s preference shares of \$775.0 million less issue costs of \$21.5 million (December 31, 2018 — \$525.0 million less issue costs of \$13.1 million).

(a) Ordinary Shares

The following table summarizes transactions in the Company's ordinary shares during the years ended December 31, 2019 and 2018:

	Number of Ordinary Shares	
	2019	2018
Ordinary shares of 0.015144558¢ per share		
Ordinary shares in issue at the beginning of the year	59,743,156	59,474,085
Ordinary shares issued to employees under the 2013 share incentive plan and/or 2008 share purchase plan	144,269	229,318
Ordinary shares issued to non-employee directors	6,993	39,753
Ordinary shares canceled	(59,894,418)	—
Total ordinary shares of 0.015144558¢ per share in issue	—	59,743,156
Ordinary shares of \$0.01 per share		
New ordinary shares issued of \$0.01 per share	60,395,839	
Ordinary shares issued at the end of the year	60,395,839	

Authorized and Issued Ordinary Shares. The Company's authorized share capital after the Merger, is 745,434 divided into 70,000,000 ordinary shares of par value \$0.01 and 30,000,000 preference shares of par value 0.15144558¢. Immediately prior to the effective time of the Merger, Parent held 60,395,839 of ordinary shares of Merger Sub, par value \$0.01. Pursuant to the terms of the Merger Agreement, each common share of Merger Sub issued and outstanding immediately prior to the effective time of the Merger was canceled and converted into and became one duly authorized, validly issued, fully paid and non-assessable ordinary share, par value of \$0.01, of the Company, as the surviving company. The Company's ordinary shares were canceled and ceased trading on the NYSE upon completion of the Merger.

The Company did not acquire any ordinary shares for the twelve months ended December 31, 2019.

(b) Preference Shares

Preference Shares Issuance. On May 2, 2013, we issued 11,000,000 5.950% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, with a liquidation preference of \$25 per share (the "5.950% Preference Shares") for an aggregate amount of \$275.0 million. Our 5.950% Preference Shares are listed on the NYSE under symbol "AHLPRC."

On September 20, 2016, the Company issued 10,000,000 shares of 5.625% Perpetual Non-Cumulative Preference Shares (the "5.625% Preference Shares"). The 5.625% Preference Shares have a liquidation preference of \$25 per share. Net proceeds were \$293.2 million, consisting of \$250.0 million of total liquidation preference less \$8.7 million of issuance expenses. The Company used \$133.2 million of the net proceeds from the offering to redeem all of the Company's outstanding 7.401% Preference Shares (defined below) and the remainder were used in the redemption of the Company's 7.250% Preference Shares (defined below) for \$160.0 million. The 5.625% Preference Shares rank equally with preference shares previously issued by the Company and have no fixed maturity date. The Company may redeem all or a portion of the 5.625% Preference Shares at a redemption price of \$25 per share on or after January 1, 2027. The 5.625% Preference Shares are listed on the NYSE under the symbol "AHLPRD".

On August 13, 2019, the Company issued 10,000,000 Depositary Shares, each of which represents 1/1000th interest in a share of the newly designated 5.625% Perpetual Non-Cumulative Preference Shares (the "Depositary Shares"). The Depositary Shares have a liquidation preference of \$25 per share. Net proceeds were \$241.6 million, comprising \$250.0 million of total liquidation preference less \$8.4 million of issuance expenses. The Depositary Shares are listed on the NYSE under the symbol "AHLPRE".

Preference Shares Redemption. On November 3, 2016, the Company issued a notice of redemption in connection with all of its issued and outstanding 7.401% Perpetual Non-Cumulative Preference Shares (the "7.401% Preference Shares") (NYSE: AHLPPRA). The redemption took place on January 3, 2017 and was conducted pursuant to the terms of the certificate of designation, dated November 15, 2006, governing the 7.401% Preference Shares. Each holder of a 7.401% Preference Share received \$25 per 7.401% Preference Share, representing an aggregate amount of \$133.2 million, plus all declared and unpaid dividends to the date of redemption.

On May 8, 2017, the Company issued a notice of redemption in connection with all of its issued and outstanding 7.250% Perpetual Non-Cumulative Preference Shares (the "7.250% Preference Shares") (NYSE: AHLPRB). The redemption took place on July 3, 2017 and was conducted pursuant to the terms of the certificate of designation, dated April 11, 2012, governing the

7.250% Preference Shares. Each holder of a 7.250% Preference Share received \$25 per 7.250% Preference Share, representing an aggregate amount of \$160.0 million, plus all declared and unpaid dividends to the date of redemption.

13. Statutory Requirements and Dividends Restrictions

As a holding company, Aspen Holdings relies on dividends and other distributions from its Operating Subsidiaries to provide cash flow to meet ongoing cash requirements, including any future debt service payments and other expenses, and to pay dividends, if any, to our preference and ordinary shareholders. Aspen Holdings must comply with the provisions of the Bermuda Companies Act 1981, as amended, (the “Companies Act”) regulating the payment of dividends and distributions. As at December 31, 2019, there were no restrictions under Bermuda law or the law of any other jurisdiction on the payment of dividends from retained earnings by Aspen Holdings.

The ability of the Company’s Operating Subsidiaries to pay the Company dividends or other distributions is subject to the laws and regulations applicable to each jurisdiction, as well as the Operating Subsidiaries’ need to maintain capital requirements adequate to maintain their insurance and reinsurance operations and their financial strength ratings issued by independent rating agencies.

The company law of England and Wales prohibits Aspen U.K. or AUL from declaring a dividend to its shareholders unless it has “profits available for distribution.” The determination of whether a company has profits available for distribution is based on its accumulated realized profits and other distributable reserves less its accumulated realized losses. While the U.K. insurance regulatory laws impose no statutory restrictions on a general insurer’s ability to declare a dividend, the rules of the Prudential Regulation Authority (the “PRA”) require each insurance company within its jurisdiction to maintain its solvency margin at all times. In line with common market practice for regulated institutions, the PRA previously requested that it be afforded with the opportunity to provide a “non-objection” prior to all future dividend payments made by Aspen U.K. In 2017, the PRA stated that they no longer routinely require Aspen U.K. to apply for a non-objection to dividends provided such dividend payment and Aspen U.K.’s resulting capital position are within Aspen U.K.’s board-approved solvency capital risk appetite. As at December 31, 2019, Aspen U.K. had an accumulated balance of retained losses of approximately \$243.0 million and AUL had an accumulated balance of retained losses of approximately £84.8 million. Aspen U.K. held a capital contribution reserve of \$470.0 million as at December 31, 2019 which, under certain circumstances, could be distributable.

Aspen Bermuda must comply with the provisions of the Companies Act regulating the payment of dividends and distributions. There were no significant restrictions under company law on the ability of Aspen Bermuda to pay dividends funded from its accumulated balances of retained income as at December 31, 2019. Aspen Bermuda may not in any financial year pay dividends which would exceed 25% of its total statutory capital and surplus, as shown on its statutory balance sheet in relation to the previous financial year, unless it files with the BMA a solvency affidavit at least seven days in advance. As at December 31, 2019, 25% of Aspen Bermuda’s statutory capital and surplus amounted to \$345.2 million. Aspen Bermuda must also obtain the prior approval of the BMA before reducing its total statutory capital as set out in its previous year’s financial statements by 15% or more.

Under both North Dakota and Texas law, insurance companies may only pay dividends out of earned surplus as distinguished from contributed surplus. As such, Aspen Specialty and AAIC could not pay a dividend as at December 31, 2019.

Actual and required statutory capital and surplus for the principal operating subsidiaries of the Company, excluding its Lloyd’s syndicate, as at December 31, 2019 and December 31, 2018 were estimated as follows:

	As at December 31, 2019		
	U.S.	Bermuda	U.K.
	(\$ in millions)		
Required statutory capital and surplus	\$ 404.0	\$ 788.4	\$ 782.0
Actual statutory capital and surplus	\$ 502.0	\$ 1,380.6	\$ 841.9

	As at December 31, 2018		
	U.S.	Bermuda	U.K.
	(\$ in millions)		
Required statutory capital and surplus	\$ 351.0	\$ 801.9	\$ 772.1
Actual statutory capital and surplus	\$ 543.0	\$ 1,575.5	\$ 857.9

As the sole corporate member of our Lloyd’s Syndicate, AUL was required to maintain Funds at Lloyd’s of \$491.9 million as at December 31, 2019. As at December 31, 2019, AUL had total funds at Lloyd’s of \$516.9 million of which \$482.3 million was provided by Aspen Bermuda.

The Bermuda Monetary Authority is the group supervisor of the Company. The laws and regulations of Bermuda require that the Company maintain a minimum amount of group statutory capital and surplus based on the enhanced capital requirement using the group standardized risk-based capital model of the Bermuda Monetary Authority. The Company is also subject to an early-warning level based on 120% of the enhanced capital requirement which may trigger additional reporting requirements or other enhanced oversight. The statutory capital requirements of our Operating Subsidiaries are set out above. To the extent that these requirements are met, we do not anticipate any dividend restrictions arising as a result of the Company’s enhanced capital requirement. For more information on the Company’s regulatory requirements, refer to Item 4, “Information on the Company — Regulatory Matters” above.

14. Dividends

Dividends. On February 28, 2020, the Company’s Board of Directors declared the following dividends:

	<u>Dividend</u>	<u>Payable on:</u>	<u>Record Date:</u>
5.950% Preference Shares (AHL PRC)	\$ 0.3719	April 1, 2020	March 15, 2020
5.625% Preference Shares (AHL PRD)	\$ 0.3516	April 1, 2020	March 15, 2020
5.625% Preference Shares, represented by Depositary Shares (AHL PRE) ⁽¹⁾	\$ 351.56	April 1, 2020	March 15, 2020

⁽¹⁾ The newly-designated 5.625% Preference Shares are represented by Depositary Shares, each representing a 1/1000th interest in a share of the 5.625% Preference Shares. The dividend paid per Depositary Share is likewise 1/1000th of the declared dividend, equivalent to \$0.35156 per Depositary Share.

15. Retirement Plans

The Company operates defined contribution retirement plans for the majority of its employees at varying rates of their salaries up to a maximum of 20.0%. Total contributions by the Company to the retirement plans were \$12.9 million in the twelve months ended December 31, 2019 (2018 — \$16.0 million, 2017 — \$16.3 million).

16. Share-Based Payments and Long-Term Incentive Plan

Pre-Merger. The Company had previously issued options and other equity incentives under the 2003 Share Incentive Plan, the 2013 Share Incentive Plan, the 2016 Stock Incentive Plan for Non-Employee Directors, the Amended 2006 Stock Option Plan, the 2008 Employee Share Purchase Plan (“ESPP”) and the Amended 2008 Sharesave Scheme. When options were exercised or other equity awards (excluding phantom shares) vested, new ordinary shares were issued as the Company did not hold treasury shares. Phantom shares were settled in cash in lieu of ordinary shares upon vesting. Immediately prior to the Merger, the Company took all actions necessary to enable and require existing participants in the ESPP to utilize their accumulated payroll deductions to purchase newly issued ordinary shares in accordance with the terms of the ESPP and, immediately after such purchases were completed, the Company terminated the ESPP.

In accordance with the Merger Agreement, at the effective time of the Merger each issued and outstanding ordinary share of the Company (other than any ordinary shares that were owned by any subsidiary of the Company or owned by Parent, Merger Sub or any subsidiary thereof) was automatically canceled and converted into the right to receive \$42.75 in cash, without interest and less any required tax withholdings (the “Merger Consideration”).

In addition, at the effective time of the Merger, all outstanding restricted share units and phantom shares, in each case, that were subject to performance-based vesting requirements, to the extent not vested, vested in full (with respect to any performance period that had been completed, determined based on actual level of performance achieved, and, with respect to any performance period that had not been completed, determined based on achievement of performance-based vesting requirements at target payout levels) and were cashed out based on the per share Merger Consideration. All other outstanding restricted share unit awards, to the extent not vested, vested in full and were cashed out based on the per share Merger Consideration plus a cash amount for any accrued but unpaid dividends in respect of such awards prior to the Effective Time. As a result, the total unrecognized share-based compensation expense related to the unvested awards was expensed and no share-based awards remain outstanding at December 31, 2019 in relation to Performance, Phantom or Restricted Share Units that were awarded pre-merger.

Post-Merger. The Company implemented a new long-term incentive scheme, under which annual awards are split equally between Performance Units and Exit Units. Performance Units vest after two years subject to the Company achieving pre-determined growth in book value per share targets. Exit Units vest upon change of control (Sale or IPO) and achieving pre-determined multiples of invested capital return targets. Both Performance Units and Exit Units are cash-based awards.

The Company's total share-based compensation / long-term incentive plan expense for the twelve months ended December 31, 2019 was \$3.5 million, which related primarily to the vesting of the share-based awards at the effective time of the Merger totaling \$21.6 million, offset by \$21.6 million compensation funded by Parent under the terms of the Merger Agreement for the settlement of these previously unvested share-based compensation awards, a charge of \$0.8 million in relation to Performance Units, \$0.8 million in relation to previously awarded deferred cash awards and \$1.9 million in relation to other share-based compensation expense. An income tax benefit of \$0.3 million has been recognized.

17. Intangible Assets and Goodwill

The following table provides a summary of the Company's intangible assets for the twelve months ended December 31, 2019 and 2018:

	Twelve Months Ended December 31, 2019				
	Beginning of the Year	Additions/ (Disposals)	Amortization	Impairment	End of the Year
	(\$ in millions)				
Intangible Assets					
Trademarks	\$ 2.5	\$ —	\$ (0.6)	\$ —	\$ 1.9
Agency Relationships	1.8	—	(0.6)	—	1.2
Renewal Rights	1.0	—	(0.1)	(0.9)	—
Non-compete Agreements	0.4	—	(0.2)	—	0.2
Insurance Licenses	16.7	—	—	—	16.7
Goodwill	3.9	—	—	—	3.9
Total	\$ 26.3	\$ —	\$ (1.5)	\$ (0.9)	\$ 23.9

	Twelve Months Ended December 31, 2018				
	Beginning of the Year	Additions/ (Disposals)	Amortization	Impairment	End of the Year
	(\$ in millions)				
Intangible Assets					
Trademarks	\$ 2.9	\$ —	\$ (0.4)	\$ —	\$ 2.5
Agency Relationships	2.3	—	(0.5)	—	1.8
Renewal Rights	1.4	—	(0.4)	—	1.0
Non-compete Agreements	0.7	—	(0.3)	—	0.4
Insurance Licenses	16.7	—	—	—	16.7
Goodwill	3.9	—	—	—	3.9
Total	\$ 27.9	\$ —	\$ (1.6)	\$ —	\$ 26.3

Aspen's intangible assets relate to trademarks, contracts to sell products through independent broker and agents (Agency Relationships), an agreement for renewal rights with Liberty Specialty Markets Limited, non-compete agreements and licenses to trade in the U.S. and U.K.

In addition, Aspen has recognized goodwill of \$2.1 million on the acquisition of equity voting interest of Blue Waters, a specialist marine insurance agency in October 2016 and of \$1.8 million on the purchase in January 2017 of 49% share of Digital Re, a digital risk and specialty insurer.

The "Aspen" trademark, valued at \$1.4 million, goodwill and insurance licenses are considered to have an indefinite life and are tested annually for impairment or when events or changes in circumstances indicate that these assets might be impaired. For the years ended December 31, 2019 and December 31, 2018, the Company performed its annual qualitative assessment and determined that it was not more likely than not that these were impaired.

The remaining intangible assets, including the “Blue Waters” trademark valued at \$0.5 million, were estimated to have an economic useful life of 5 years. The Company amortizes the estimated value of these assets over their estimated useful life which is included as an expense in the income statement.

18. Operating Leases

As at December 31, 2019, the Company has recognized right-of-use operating lease assets of \$93.5 million, net of impairment and operating lease liabilities of \$113.2 million. Right-of-use operating lease assets comprise primarily of leased office real estate globally and other assets. For all office real estate leases, rent incentives, including reduced-rent and rent free periods and contractually agreed rent increases during the lease term, have been included when determining the present value of future cash flows.

As part of the Company’s operating effectiveness and efficiency program, we are consolidating our office space. Where negotiations are either in advanced stages of discussion and it is probable that the sub-lease transactions will be completed, or we have agreed terms to sub-lease our office space, we have assessed our right-of-use lease assets for impairment and have recognized a \$12.3 million charge within the period.

The Company believes its office space is sufficient to conduct its operations for the foreseeable future in these locations.

The Company has no lease transactions between related parties.

Comparatives have not been presented due to 2019 being the first year of adoption of ASU 2016-2, “Leases (Topic 842)”.

Operating lease charge. The following table summarizes the operating lease charge for the twelve months ended December 31, 2019:

	For the Twelve Months Ended
	December 31, 2019
	(\$ in millions)
Amortization charge on right-of-use operating leased assets	\$ 13.4
Interest on operating lease liabilities	4.6
Operating lease charge	<u>\$ 18.0</u>

Lease Liabilities. The following table summarizes the maturity of lease liabilities under non-cancellable leases as of December 31, 2019:

	December 31, 2019
	(\$ in millions)
Operating leases — maturities	
2020	\$ 17.7
2021	16.4
2022	13.0
2023	12.2
2024	11.7
Later years	73.6
Total minimum lease payments	<u>\$ 144.6</u>
Less imputed interest	(31.4)
Total lease liabilities	<u>\$ 113.2</u>

Other lease information. The following table summarizes the cash flows on operating leases for the twelve months ended December 31, 2019 and other supplemental information:

	For the Twelve Months Ended
	December 31, 2019
	(\$ in millions)
Cash paid for amounts included in the measurement of lease liabilities	
- Operating cash outflow from operating leases	\$ (18.0)
Right-of-use assets obtained in exchange for lease obligations	
- Operating leases	\$ 37.3
Reduction to Right-of-use assets resulting from reductions to lease obligations	
- Operating leases	\$ 6.1
Weighted Averages	
- Operating leases, remaining lease terms (years)	10.1
- Operating leases, average discount rate	5.0%

19. Related Party Transactions

In the normal course of the Company's underwriting activities, the Company has entered into insurance and reinsurance agreements with companies affiliated with the Company.

In addition to the material related party contracts listed below, we also have a number of contracts with Apollo affiliates the net cost of which are individually and the aggregate less than \$50k.

Relationships and Related Party Transactions with Apollo or its Affiliates

Apollo's indirect subsidiary, Apollo Asset Management Europe PC LLP ("AAME"), serves as the investment manager for certain of the Company's subsidiaries, and Apollo's indirect subsidiary, Apollo Management Holdings, L.P. ("AMH"), provides the Company with management consulting services and advisory services.

Additionally, certain employees of Apollo and its affiliates serve on the Board.

A description of relationships we have with Apollo and its affiliates and transactions that have existed or that we have entered into with Apollo and its affiliates are described below.

Investment Management Relationships

AAME serves as the Company's investment manager and the investment manager for certain of our subsidiaries, and provides centralized asset management investment advisory and risk services for the portfolio of our investments and investments of such subsidiaries pursuant to the investment management agreements ("IMAs") that have been entered into with AAME. AAME is integrated into the Apollo investment platform and provides the Company with access to Apollo's investment expertise and fully-built infrastructure without the burden of incurring the development and maintenance costs of building an in-house investment asset manager with the capabilities of Apollo/AAME.

AAME is registered in England and Wales and is authorized and regulated by the Financial Conduct Authority in the United Kingdom under the Financial Services and Markets Act 2000 and the rules promulgated thereunder for the primary purpose of providing a centralized asset management and risk function to European clients in the financial services and insurance sectors. AAME has necessary permissions to engage in certain specified regulated activities including providing investment advice, undertaking discretionary investment management and arranging deals in relation to certain types of investment.

In addition, pursuant to the IMAs, AAME may engage sub-advisors or delegates to provide certain of the investment advisory and management services to our subsidiaries. In this regard, AAME is able to leverage its relationships with other Apollo-affiliated investment advisors in a sub-advisory capacity, pursuant to which AAME has mandated its affiliates, Apollo Management International LLP ("AMI") and Apollo Capital Management L.P. ("AMC"), to invest in asset classes in which they have investment expertise and sourcing capabilities, such as middle market loans, commercial mortgage loans, structured products and short term

secured investments. Pursuant to the IMAs, all sub-advisors and delegates are ultimately overseen by AAME to ensure they are appropriate for the business and consistent with the investment strategy of the Aspen Group and such sub-advisory delegations are revocable by AAME.

IMAs — U.S., Bermuda and U.K.

In April 2019, following the completion of the Merger, AAME was engaged as the investment advisor for certain of our subsidiaries in the U.S., Bermuda and U.K. The assets of those subsidiaries are managed by AAME and certain affiliates of AAME through a sub-advisory arrangement.

Under each of the IMAs, AAME will be paid an annual investment management fee (the “Management Fee”) which will be based on a cost-plus structure. The “cost” is comprised of the direct and indirect fees, costs, expenses and other liabilities arising in or otherwise connected with the services provided under the IMAs. The “plus” component will be a mark-up in an amount of up to 25% determined based on an applicable transfer pricing study. The Management Fee will be subject to certain maximum threshold levels, including an annual fee cap of 15 bps of the total amount of investable assets. Affiliated sub-advisors, including AMI and AMC, will also earn additional fees for sub-advisory services rendered.

Termination of Investment Management or Advisory Agreements with AAME

The IMAs have no stated term and may be terminated by either AAME or the relevant subsidiary, as applicable, upon 60 days’ notice at any time or when required by such party’s regulator or by applicable law. In addition, AAME may terminate the IMAs immediately upon notice if the implementation of any amendments to the applicable investment guidelines is impossible for, or cannot reasonably be expected of, AAME. Such termination rights may adversely affect the Company’s investment results.

Third Party Sub-Advisory Agreements

In the limited instances in which AAME desires to invest in asset classes for which neither AAME nor Apollo possesses the investment expertise or sourcing abilities required to manage the assets, or in instances in which AAME makes the determination that it is more effective or efficient to do so, AAME may mandate third-party sub-advisors to invest in such asset classes. Pursuant to IMAs, the Company’s subsidiaries will be responsible for fees paid to such sub-advisors.

Management Consulting Agreement

As previously disclosed, the Company entered into a Management Consulting Agreement, dated March 28, 2019 (the “Management Consulting Agreement”), with AMH. Pursuant to the Management Consulting Agreement, AMH will provide us with management consulting and advisory services related to the business and affairs of the Company and its subsidiaries and we will pay to AMH in consideration for its services under the Management Consulting Agreement an annual management consulting fee equal to the greater of (i) 1% of the consolidated net income of the Company and its subsidiaries for the applicable fiscal year, and (ii) \$5 million.

The Management Consulting Agreement is effective February 15, 2019 (the “Commencement Date”) and has an initial term period of eight years from the Commencement Date. The Management Consulting Agreement will be automatically extended for an additional 12-months term on each of the eight-year and nine-year anniversary of the Commencement Date absent contrary notice by either party given not less than 30 days prior to such anniversary date. The Management Consulting Agreement will be automatically terminated on the occurrence of the consummation of any transaction or series of transactions, whether or not related, as a result of which New Holders (as defined in the Management Consulting Agreement) become the beneficial owner, directly or indirectly, of more than ninety percent of the ordinary shares or other common equity and voting securities of the Company and its subsidiaries.

2019 IMA and Management Consulting Fees

During the year ended December 31, 2019, the Company recognized IMA fees of \$3.5 million, of which \$2.2 million remains payable to AAME at year end. During the year ended December 31, 2019, the Company recognized Management Consulting fees of \$4.4 million, of which \$1.3 million remains payable to AMH at year end.

Other Payables to Related Parties

As at year end December 31, 2019, the Company had an intercompany payable balance of \$18.1 million, due to its parent, Highlands Holdings Ltd.

20. Commitments and Contingent Liabilities

(a) Restricted assets

The Company's subsidiaries are obliged by the terms of its contractual obligations to U.S. policyholders and by obligations to certain regulatory authorities to facilitate issue of letters of credit or maintain certain balances in trust funds for the benefit of policyholders.

The following table details the forms and value of Company's material restricted assets as at December 31, 2019 and 2018:

	<u>As at December 31, 2019</u>	<u>At December 31, 2018</u>
	(\$ in millions, except percentages)	
Regulatory trusts and deposits:		
Affiliated transactions	\$ 754.9	\$ 1,033.9
Third party	2,766.6	2,511.7
Letters of credit / guarantees ⁽¹⁾	635.4	771.1
Other investments — real estate fund	111.4	102.5
Total restricted assets	<u>\$ 4,268.3</u>	<u>\$ 4,419.2</u>
Total as percent of investable assets ⁽²⁾	<u>54.4%</u>	<u>56.4%</u>

⁽¹⁾ As at December 31, 2019, the Company had pledged funds of \$635.4 million (December 31, 2018 — \$771.1 million) as collateral for the secured letters of credit.

⁽²⁾ Investable assets comprise total investments, cash and cash equivalents, accrued interest, receivables for securities sold and payables for securities purchased.

Real Estate Fund. On December 20, 2017, the Company committed \$100.0 million as a limited partner to a real estate fund. The investment objective of the fund is to achieve attractive risk-adjusted returns through the acquisition of income producing, high quality assets in gateway cities located in the U.S. and Canada in the office, retail, industrial and multifamily sectors of the real estate market. On May 1, 2018, the Company received a demand for an initial capital call of \$86.2 million and the capital call on May 10, 2018. On September 19, 2018, the Company received a demand for the final capital call of \$13.8 million and paid the capital on September 28, 2018.

Investments in the real estate fund may be redeemed on a quarterly basis with 90 days' notice subject to available cash in the fund once the lock-up period ends two years after the capital call. If sufficient cash is not available then all requested redemptions will be made on a pro rata basis. If a redemption request has not been met in full, as of such calendar quarter, the remaining portion of the request will be redeemed in subsequent quarters. There are no assurances as to when the Company may be able to withdraw, in whole or in part, its redemption request from the fund. A lock-up period is the initial amount of time an investor is contractually required to remain invested before having the ability to redeem.

On December 23, 2019, the Company committed \$5.0 million as an equity investment in the holding company of a multi-line reinsurer. The strategy for the multi-line reinsurer is to combine a diversified reinsurance business, focused primarily on long-tailed lines of property and casualty business and, potentially to a lesser extent, life business, with a diversified investment strategy. On December 27, 2019, the Company received a demand for an initial capital call of \$0.2 million and paid the capital on January 15, 2020.

The Company's current arrangements with our bankers for the issue of letters of credit require us to provide collateral in the form of cash and investments for the full amount of all secured and undrawn letters of credit that are outstanding. We monitor the proportion of our otherwise liquid assets that are committed to trust funds or to the collateralization of letters of credit. As at December 31, 2019 and 2018, these funds amounted to approximately 54.4% of the \$7.8 billion and approximately 56.4% of the \$7.8 billion of investable assets held by the Company, respectively. We do not consider that this unduly restricts our liquidity at this time. For more information on our credit facilities and long-term debt arrangements, refer to Note 23, "Credit Facility and Long-term Debt" of these consolidated financial statements.

Funds at Lloyd's. AUL operates at Lloyd's as the corporate member for Syndicate 4711. Lloyd's determines Syndicate 4711's required regulatory capital principally through the syndicate's annual business plan. Such capital, called Funds at Lloyd's, consists of investable assets as at December 31, 2019 in the amount of \$513.1 million (2018 — \$503.2 million).

The amounts provided as Funds at Lloyd's will be drawn upon and become a liability of the Company in the event of Syndicate 4711 declaring a loss at a level that cannot be funded from other resources, or if Syndicate 4711 requires funds to cover a short term liquidity gap. The amount which the Company provides as Funds at Lloyd's is not available for distribution to the Company for the payment of dividends. Aspen Managing Agency Limited, the managing agent to Syndicate 4711, is also required by Lloyd's

to maintain a minimum level of capital which as at December 31, 2019 was £0.4 million (December 31, 2018 — £0.4 million). This is not available for distribution by the Company for the payment of dividends.

U.S. Reinsurance Trust Fund. For its U.S. reinsurance activities, Aspen U.K. has established and must retain a multi-beneficiary U.S. trust fund for the benefit of its U.S. cedants so that they may take financial statement credit without the need to post cedant-specific security. The minimum trust fund amount is \$20.0 million plus an amount equal to 100% of Aspen U.K.'s U.S. reinsurance liabilities, which were \$1,374.4 million as at December 31, 2019 and \$1,311.4 million as at December 31, 2018. As at December 31, 2019, the balance (including applicable letter of credit facilities) held in the trust was \$1,395.2 million (2018 — \$1,336.4 million).

Aspen Bermuda has also established and must retain a multi-beneficiary U.S. trust fund for the benefit of its U.S. cedants so that they may take financial statement credit without the need to post cedant-specific security. The minimum trust fund amount is \$20.0 million plus an amount equal to 100% of Aspen Bermuda's liabilities to its U.S. cedants which was \$427.7 million and \$647.8 million as at December 31, 2019 and 2018, respectively. As at December 31, 2019, the balance held in the U.S. trust fund and other Aspen Bermuda trusts was \$846.2 million (2018 — \$1,112.4 million).

U.S. Surplus Lines Trust Fund. Aspen U.K. and Syndicate 4711 have also established a U.S. surplus lines trust fund with a U.S. bank to secure liabilities under U.S. surplus lines policies. The balance held in trust as at December 31, 2019 was \$215.5 million (2018 — \$198.8 million).

U.S. Regulatory Deposits. As at December 31, 2019, Aspen Specialty had a total of \$6.1 million (2018 — \$6.0 million) on deposit with six U.S. states in order to satisfy state regulations for writing business in those states. AAIC had a further \$6.7 million (2018 — \$6.1 million) on deposit with twelve U.S. states.

Canadian Trust Fund. Aspen U.K. has established a Canadian trust fund with a Canadian bank to secure a Canadian insurance license. As at December 31, 2019, the balance held in trust was CAD\$155.4 million (2018 — CAD\$152.7 million).

Australian Trust Fund. Aspen U.K. has established an Australian trust fund with an Australian bank to secure policyholder liabilities and as a condition for maintaining an Australian insurance license. As at December 31, 2019, the balance held in trust was AUD\$226.9 million (2018 — AUD\$209.3 million).

Swiss Trust Fund. Aspen U.K. has established a Swiss trust fund with a Swiss bank to secure policyholder liabilities and as a condition for maintaining a Swiss insurance license. As at December 31, 2019, the balance held in trust was CHF8.4 million (2018 — CHF9.0 million).

Singapore Fund. Aspen U.K. has established a segregated Singaporean bank account to secure policyholder liabilities and as a condition for maintaining a Singaporean insurance license and meet local solvency requirements. As at December 31, 2019, the balance in the account was SGD\$148.9 million (2018 — SGD\$135.9 million).

(b) Variable interest entities

As at December 31, 2019, the Company had investments in one (December 31, 2018 — two) variable interest entities, Peregrine Reinsurance Ltd.

Peregrine Reinsurance Ltd. For further information regarding the Company's investment in Peregrine Reinsurance Ltd, refer to Note 5, "Variable Interest Entities" of these consolidated financial statements.

(c) Contingent liabilities

In common with the rest of the insurance and reinsurance industry, the Company is also subject to litigation and arbitration in the ordinary course of business. The Company's Operating Subsidiaries are regularly engaged in the investigation, conduct and defense of disputes, or potential disputes, resulting from questions of insurance or reinsurance coverage or claims activities. Pursuant to insurance and reinsurance arrangements, many of these disputes are resolved by arbitration or other forms of alternative dispute resolution. Such legal proceedings are considered in connection with estimating the Company's Insurance Reserves — Loss and Loss Adjustment Expenses, as provided on the Company's consolidated balance sheet.

In some jurisdictions, noticeably the U.S., a failure to deal with such disputes or potential disputes in an appropriate manner could result in an award of "bad faith" punitive damages against the Company's Operating Subsidiaries. In accordance with ASC 450-20-50-4b, for (a) reasonably possible losses for which no accrual is made because any of the conditions for accrual in ASC 450-20-25-2 are not met and (b) reasonably possible losses in excess of the amounts accrued pursuant to ASC 450-20-30-1, the Company will provide an estimate of the possible loss or range of possible loss or state that such an estimate cannot be made.

As at December 31, 2019, it was the opinion of the Company's management based on available information that the probability of the ultimate resolution of pending or threatened litigation or arbitrations having a material effect on the Company's financial condition, results of operations or liquidity would be remote.

21. Concentrations of Credit Risk

The Company is potentially exposed to concentrations of credit risk in respect of amounts recoverable from reinsurers, investments and cash and cash equivalents, and insurance and reinsurance balances owed by the brokers with whom the Company transacts business.

The Company defines credit risk tolerances in line with the risk appetite set by our Board and they, together with the group's risk management function, monitor exposures to individual counterparties. Any exceptions are reported to senior management and the Risk Committee of the Board of Directors.

Reinsurance recoverables

The total amount recoverable by the Company from reinsurers as at December 31, 2019 was \$2,319.8 million (2018 — \$2,077.6 million) of which \$1,817.5 million was uncollateralized (2018 — \$1,497.8 million). As at December 31, 2019, of the Company's uncollateralized reinsurance recoverables 15.1% (2018 — 15.7%) were with Munich Re which is rated A+ by A.M. Best and AA- by S&P, 11.9% (2018 — 10.2%) were with Everest Re which is rated A+ by A.M. Best and A+ by S&P, and 9.1% (2018 — 10.0%) were with MS & AND Group which is rated A+ by A.M. Best and A+ by S&P. These are the Company's largest exposures to individual reinsurers. The Company has made no provision for doubtful debts from any of its reinsurers as at December 31, 2019.

Underwriting premium receivables

The total underwriting premium receivable by the Company as at December 31, 2019 was \$1,318.4 million (2018 — \$1,459.3 million). As at December 31, 2019, \$15.7 million of the total underwriting premium receivable balance has been due for settlement for more than one year. The Company assesses the recoverability of premium receivables through a review of policies and the concentration of receivables by broker. A bad debt provision was included of \$23.0 million as at December 31, 2019 (2018 — \$16.2 million) for underwriting premiums unlikely to be collected.

Investments and cash and cash equivalents

The Company's investment policies include specific provisions that limit the allowable holdings of a single issue and issuer. As at December 31, 2019, there were no investments in any single issuer, other than the U.S. government, U.S. government agencies, U.S. government sponsored enterprises, the Canadian government and the U.K. government in excess of 2% of the aggregate investment portfolio.

Balances owed by brokers

The Company underwrites a significant amount of its business through brokers and a credit risk exists should any of these brokers be unable to fulfill their contractual obligations in respect of insurance or reinsurance balances due to the Company. The following table shows the largest brokers that the Company transacted business within the three years ended December 31, 2019 and the proportion of gross written premiums from each of those brokers.

	Twelve Months Ended December 31,		
	2019	2018	2017
	(in percentages)		
Aon Corporation ⁽¹⁾	13.4%	15.8%	16.4%
Marsh & McLennan Companies, Inc.	13.6	15.8	16.0
Willis Group Holdings, Ltd.	10.3	12.4	13.1
Other brokers/non-broker sources ⁽²⁾	62.7	56.0	54.5
Total	100.0%	100.0%	100.0%
Gross written premiums (\$ millions)	\$ 3,442.4	\$ 3,446.9	\$ 3,360.9

⁽¹⁾ On March 9, 2020, Aon plc and Willis Towers Watson announced a definitive agreement to combine, and expect the transaction to close in the first half of 2021.

⁽²⁾ No other individual broker accounted for more than 10% of total gross written premiums.

22. Reclassifications from Accumulated Other Comprehensive Income

The following table sets out the components of the Company's AOCI that are reclassified into the audited condensed consolidated statement of operations for the twelve months ended December 31, 2019 and 2018:

Details about the AOCI Components	Amount Reclassified from AOCI		Affected Line Item in the Consolidated Statement of Operations
	Twelve Months Ended December 31, 2019	Twelve Months Ended December 31, 2018	
	(\$ in millions)		
Available for sale securities:			
Realized (losses)/gains on sale of securities	\$ (14.4)	\$ 6.7	Realized and unrealized investment gains
Realized gains/(losses) on sale of securities	7.6	(11.9)	Realized and unrealized investment losses
	(6.8)	(5.2)	(Loss) from operations before income tax
Tax on net realized gains of securities	—	0.7	Income tax (expense)/benefit
	\$ (6.8)	\$ (4.5)	Net (loss)
Realized derivatives:			
Net realized gains/(losses) on settled derivatives	4.8	(1.2)	General, administrative and corporate expenses
Tax on settled derivatives	(0.8)	0.2	Income tax (expense)/benefit
	\$ 4.0	\$ (1.0)	Net (loss)
Total reclassifications from AOCI to the statement of operations, net of income tax	\$ (2.8)	\$ (5.5)	Net (loss)

23. Credit Facility and Long-term Debt

Credit Agreement. On March 27, 2017, Aspen Holdings and certain of its direct or indirect subsidiaries (collectively, the "Borrowers") entered into a Second Amended and Restated Credit Agreement (the "Credit Agreement") with various lenders and Barclays Bank plc, as administrative agent, which amends and restates the Amended and Restated Credit Agreement, dated as of June 12, 2013, among the Company, certain subsidiaries thereof, various lenders and Barclays Bank plc, as administrative agent. The credit facility will be used by the Borrowers to finance the working capital needs of the Company and its subsidiaries, for letters of credit in connection with the insurance and reinsurance businesses of the Company and its subsidiaries and for other general corporate purposes. Initial availability under the credit facility is \$200,000,000 and the Company has the option (subject to obtaining commitments from acceptable lenders) to increase the credit facility by up to \$100,000,000. The credit facility will expire on March 27, 2022.

As at December 31, 2019, no borrowings were outstanding under the Credit Agreement. The fees and interest rates on the loans and the fees on the letters of credit payable by the Borrowers under the Credit Agreement are based upon the credit ratings for the Company's long-term unsecured senior debt by S&P and Moody's. In addition, the fees for a letter of credit vary based upon whether the applicable Borrower has provided collateral (in the form of cash or qualifying debt securities) to secure its reimbursement obligations with respect to such letter of credit.

Under the Credit Agreement, the Company must not permit (a) consolidated tangible net worth to be less than approximately \$2,323,100,000 plus 25% of consolidated net income and 25% of aggregate net cash proceeds from the issuance by the Company of its capital stock, in each case after January 1, 2017, (b) the ratio of its total consolidated debt to the sum of such debt plus our consolidated tangible net worth to exceed 35% or (c) any material insurance subsidiary to have a financial strength rating of less than "B++" from A.M. Best. The Credit Agreement contains other customary affirmative and negative covenants, including (subject to various exceptions) restrictions on the ability of the Company and its subsidiaries to incur indebtedness, create or permit liens on their assets, engage in mergers or consolidations, dispose of assets, pay dividends or other distributions, purchase or redeem the Company's equity securities, make investments and enter into transactions with affiliates. In addition, the Credit Agreement has customary events of default, including (subject to certain materiality thresholds and grace periods) payment default, failure to comply with covenants, material inaccuracy of representation or warranty, bankruptcy or insolvency proceedings, change of control and cross-default to other debt agreements.

On August 28, 2018, the Borrowers entered into a Waiver to Credit Agreement with various lenders and Barclays Bank plc, as administrative agent, to waive any Default or Event of Default that would result from any Change of Control caused by the Merger.

Other Credit Facilities. On September 20, 2019, Aspen Bermuda and Citibank Europe plc (“Citi Europe”) amended the committed letter of credit facility, dated June 30, 2012, as amended on June 30, 2014, June 30, 2016, and June 29, 2018 (the “LOC Facility”). The term of the LOC Facility is to June 30, 2020 and provides a maximum aggregate amount of up to \$500.0 million. Under the LOC Facility, Aspen Bermuda will pay to Citi Europe (a) a letter of credit fee based on the available amounts of each letter of credit and (b) a commitment fee, which varies based upon usage, on the unutilized portion of the LOC Facility. Aspen Bermuda will also pay interest on the amount drawn by any beneficiary under the LOC Facility at a rate per annum of LIBOR plus 1% (plus reserve asset costs, if any) from the date of drawing until the date of reimbursement by Aspen Bermuda. In addition, Aspen Bermuda and Citi Europe entered into an uncommitted letter of credit facility whereby Aspen Bermuda has the ability to request letters of credit under this facility subject to the prior approval of Citi Europe. The fee associated with the uncommitted facility is a letter of credit fee based on the available amounts of each letter of credit issued under the uncommitted facility. Both the LOC Facility and the uncommitted facility are used to secure obligations of Aspen Bermuda to its policyholders. In addition to these facilities, we also use regulatory trusts to secure our obligations to policyholders.

The terms of a pledge agreement between Aspen Bermuda and Citi Europe (pursuant to an assignment agreement dated October 11, 2006) dated January 17, 2006, as amended, were also amended on June 30, 2014 to change the types of securities or other assets that are acceptable as collateral under the New LOC Facility. All other agreements relating to Aspen Bermuda’s LOC Facility, which now apply to the LOC Facility with Citi Europe, as previously filed with the SEC, remain in full force and effect. As at December 31, 2019, we had \$444.2 million of outstanding collateralized letters of credit under the LOC Facility (December 31, 2018 — \$444.2 million).

Long-term Debt. On December 15, 2010, the Company closed its offering of \$250.0 million 6.00% Senior Notes due December 15, 2020. The net proceeds from this offering, before offering expenses, were \$247.5 million. On June 18, 2018, we redeemed \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment, of \$8.6 million. On September 30, 2019, we redeemed the remaining \$125.0 million of our 6.00% Senior Notes due 2020 resulting in a realized loss, or make-whole payment of \$5.5 million.

On November 13, 2013, the Company closed its offering of \$300.0 million 4.65% Senior Notes due November 15, 2023 (the “2023 Senior Notes”). The net proceeds from the 2023 Senior Notes offering, before offering expenses, were \$299.7 million and a portion of the proceeds was used to redeem the then outstanding 2014 Senior Notes. Subject to applicable law, the 2023 Senior Notes will be the senior unsecured obligations of Aspen Holdings and will rank equally in right of payment with all of our other senior unsecured indebtedness from time to time outstanding.

Subject to certain exceptions, so long as any of the senior notes described above remain outstanding, the Company has agreed that neither the Company nor any of its subsidiaries will (i) create a lien on any shares of capital stock of any designated subsidiary (currently Aspen U.K. and Aspen Bermuda, as defined in the Indenture), or (ii) issue, sell, assign, transfer or otherwise dispose of any shares of capital stock of any designated subsidiary. Certain events will constitute an event of default under the Indenture, including default in payment at maturity of any of our other indebtedness in excess of \$50.0 million.

Silverton, our Bermuda-domiciled special purpose insurer, was established in December 2013 to provide additional collateralized capacity to support Aspen Re’s global reinsurance business. On December 23, 2014, Silverton issued \$85.0 million of participating notes (of which \$70.0 million was issued to third parties), which provided quota share support for Aspen Re’s global property catastrophe excess of loss reinsurance business. The 2015 Loan Notes matured on September 18, 2017.

In the fourth quarter of 2015, Silverton issued \$125.0 million of participating notes (of which \$100.0 million was issued to third parties), which provided quota share support for Aspen Re’s global property catastrophe excess of loss reinsurance business. The 2016 Loan Notes matured on September 17, 2018.

In the fourth quarter of 2016, Silverton issued \$130.0 million of participating notes (of which \$105.0 million was issued to third parties), which provided quota share support for Aspen Re’s global property catastrophe excess of loss reinsurance business.

A final payment was made to noteholders after commutation of the reinsurance agreement on July 1, 2019. Silverton has no further reinsurance commitments outstanding.

The following table summarizes our contractual obligations under long-term debt as at December 31, 2019.

<u>Contractual Basis</u>	<u>Payments Due By Period</u>				
	<u>Less than 1 year</u>	<u>1-3 years</u>	<u>3-5 years</u>	<u>More than 5 years</u>	<u>Total</u>
	(\$ in millions)				
Long-term Debt Obligations	\$ —	\$ 300.0	\$ —	\$ —	\$ 300.0

The Senior Notes obligation disclosed above does not include the \$14.0 million annual interest payable associated with the Senior Notes or the loan notes issued by Silverton. For more information on Silverton, refer to Note 5, “Variable Interest Entities” of these consolidated financial statements.

24. Subsequent Events

Reinsurance Agreement. On March 2, 2020, the Company entered into an adverse development reinsurance agreement with a wholly-owned subsidiary of Enstar Group Limited.

Under this agreement, the Company will cede to the wholly-owned subsidiary of Enstar Group Limited, losses incurred on or prior to December 31, 2019, in excess of \$3.805 billion, up to an aggregate limit of \$4.575 billion (coverage of \$770.0 million). The reinsurance agreement also provides for \$250.0 million of cover in excess of \$4.815 billion.

The consideration for this agreement is \$770.0 million plus interest at 3.75% per annum, compounding daily, from the effective date January 1, 2020 to the closing date. Completion of the transaction is subject to regulatory approvals and satisfaction of various other closing conditions. The transaction is expected to close in the first half of 2020.

COVID-19. We continue to closely monitor developments related to the outbreak of COVID-19, also known as coronavirus, to assess any potential impact on our business. Like many property and casualty (re)insurers, we have possible exposure to the contingency market and cancellation losses stemming from the COVID-19 outbreak and could also face COVID-19 related claims from credit and surety lines and potential exposure from business interruption. Whether the virus could trigger coverage is dependent on specific policy language, terms and exclusions. There is a risk, however, that legislative, regulatory, judicial or social influences may extend coverage beyond our intended contractual obligations or result in an increase in the frequency or severity of claims beyond expected levels. The volatility in the financial markets resulting from the outbreak may also impact our investment portfolio. Our investment portfolio comprises primarily government and other fixed income securities and we are not significantly exposed to equity markets. However, our corporate bond portfolio could be subject to default risk in the event of extended disruption to trade, and our strategic asset allocation includes middle market loans, commercial and other mortgage loan arrangements which may be adversely affected by the outbreak. In addition, existing and potential future travel bans, preventative or government mandated closures of our offices or the offices of our outsource providers may affect our ability to conduct our business. A prolonged period of commercial disruption, reduced economic activity and other consequences of the outbreak could have a material impact on our results of operations, financial condition or liquidity. Because this is an evolving and highly uncertain situation it is not possible to provide an estimate of potential insurance, reinsurance or investment exposure or any other indirect effects the outbreak may have on our results of operations, financial condition or liquidity.

Recent Changes to Ratings. On March 26, 2020, S&P downgraded the financial strength and issuer credit ratings of Aspen Bermuda and Aspen U.K. to “A-” (Strong) from “A” (Strong). The long term issuer credit rating of Aspen Holdings was downgraded to “BBB” from “BBB+”. The outlook assigned to all these ratings is stable.

Our U.S. Operating subsidiaries, AAIC and Aspen Specialty, are not currently rated by S&P and have a financial strength rating of “A” (Excellent) by A.M. Best with a negative outlook. On April 1, 2020 A.M. Best affirmed the financial strength rating of “A” (Excellent) for Aspen Bermuda, Aspen U.K. Aspen Specialty and AAIC but revised its outlook to negative from stable. Our Lloyd’s operations benefit from the Lloyd’s market financial strength rating of “A” (Excellent) with a stable outlook by A.M. Best and “A+” (Strong) with a stable outlook by S&P.

Although the Company is still assessing the impact of this recent downgrade by S&P, we do not believe that this change in rating will significantly impact where the Company conducts its business operations. However, the downgrade may impair our ability to sell insurance policies and could materially and adversely affect our competitive position in the insurance industry, future financial condition and operating results.

REPORT OF THE INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Aspen Insurance Holdings Limited

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Aspen Insurance Holdings Limited and subsidiaries (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of operations and other comprehensive income, changes in shareholders’ equity and cash flows for each of the years in the three-year period ended December 31, 2019 and the related notes and financial statement schedules I to V (collectively, the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S Generally Accepted Accounting Principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

KPMG LLP

We have served as the Company’s auditor since 2002.

London, United Kingdom

April 6, 2020

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ASPEN INSURANCE HOLDINGS LIMITED

SCHEDULE I - INVESTMENTS

For the Twelve Months Ended December 31, 2019, 2018 and 2017

The Company's investments comprise investments in subsidiaries.

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE II - CONDENSED FINANCIAL INFORMATION OF REGISTRANT
BALANCE SHEETS
As at December 31, 2019 and 2018

	As at December 31, 2019	As at December 31, 2018
	(\$ in millions, except per share amounts)	
ASSETS		
Short-term investments (available for sale)	\$ —	\$ —
Fixed income maturities (trading)	75.6	—
Cash and cash equivalents	37.4	55.6
Investments in subsidiaries ^{(1) (2)}	2,973.6	3,163.1
Other investments (equity method)	—	3.7
Eurobond issued by subsidiary	—	—
Long-term debt issued by Silverton	—	1.1
Intercompany funds due from affiliates	0.1	—
Right-of-use operating lease assets	1.4	—
Other assets	6.9	9.0
Total assets	<u>\$ 3,095.0</u>	<u>\$ 3,232.5</u>
LIABILITIES		
Accrued expenses and other payables	7.2	47.3
Intercompany funds due to affiliates	61.2	120.1
Long-term debt	299.8	424.7
Operating lease liabilities	1.3	—
Total liabilities	<u>\$ 369.5</u>	<u>\$ 592.1</u>
SHAREHOLDERS' EQUITY		
Ordinary Shares:		
60,395,839 shares of par value \$.01 each (December 31, 2018 — 59,743,156 of par value 0.15144558¢ each)	\$ 0.6	\$ 0.1
Preference Shares:		
11,000,000 5.950% shares of par value 0.15144558¢ each (December 31, 2018 — 11,000,000)	—	—
10,000,000 5.625% shares of par value 0.15144558¢ each (December 31, 2018 — 10,000,000)	—	—
10,000,000 5.625% depository shares of par value 0.15144558¢ each (December 31, 2018 — Nil)	—	—
Additional paid in capital	1,201.7	967.5
Retained earnings ⁽²⁾	1,514.6	1,791.0
Non-controlling interest	—	3.7
Accumulated other comprehensive income, net of taxes:		
Unrealized gains on investments	84.5	(66.8)
Gain/(loss) on derivatives	4.3	0.3
Gains on foreign currency translation	(80.2)	(55.4)
Total accumulated other comprehensive (loss)/income	<u>8.6</u>	<u>(121.9)</u>
Total shareholders' equity	<u>2,725.5</u>	<u>2,640.4</u>
Total liabilities and shareholders' equity	<u>\$ 3,095.0</u>	<u>\$ 3,232.5</u>

(1) The Company's investment in subsidiaries are accounted for under the equity method and adjustments to the carrying value of these investments are made based on the Company's share of capital, including share of income and expenses. Changes in the value were recognized in realized and unrealized investment gains and losses in the statement of operations.

(2) Investment in subsidiaries and retained earnings have been restated by \$15.6 million from January 1, 2017 to account for additional ceded premiums on excess of loss ceded reinsurance contracts for periods December 31, 2016 and prior.

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE II - CONDENSED FINANCIAL INFORMATION OF REGISTRANT - Continued
STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
For the Twelve Months Ended December 31, 2019, 2018 and 2017

	Twelve Months Ended December 31, 2019	Twelve Months Ended December 31, 2018	Twelve Months Ended December 31, 2017
	(\$ in millions)		
Operating Activities:			
Equity in net earnings of subsidiaries and other investments, equity method	\$ (415.1)	\$ (371.3)	\$ (590.7)
Dividend income	270.0	340.3	373.6
Interest income on Eurobond	—	—	18.7
Net realized and unrealized investment gains/(losses)	2.6	(5.1)	(2.3)
Other income	—	—	—
Total revenues	<u>(142.5)</u>	<u>(36.1)</u>	<u>(200.7)</u>
Expenses:			
General, administrative and corporate expenses	(70.2)	(83.8)	(36.2)
Interest expense	(25.7)	(25.9)	(29.5)
Other expense	(3.3)	—	—
(Loss) from operations before income tax	(241.7)	(145.8)	(266.4)
Income tax	—	—	—
Net (loss)	<u>(241.7)</u>	<u>(145.8)</u>	<u>(266.4)</u>
Amount attributable to non-controlling interest	1.2	(1.0)	(1.3)
Net (loss) attributable to Aspen Insurance Holdings Limited ordinary shareholders	<u>(240.5)</u>	<u>(146.8)</u>	<u>(267.7)</u>
Other comprehensive (loss)/income, net of taxes:			
Change in unrealized gains on investments	151.3	(76.5)	(12.8)
Net change from current period hedged transactions	4.0	(1.8)	2.6
Change in foreign currency translation adjustment	(24.8)	12.3	(40.6)
Other comprehensive (loss)/income, net of tax	<u>130.5</u>	<u>(66.0)</u>	<u>(50.8)</u>
Comprehensive (loss)	<u>\$ (110.0)</u>	<u>\$ (212.8)</u>	<u>\$ (318.5)</u>

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE II - CONDENSED FINANCIAL INFORMATION OF REGISTRANT - Continued

STATEMENTS OF CASH FLOWS
For the Twelve Months Ended December 31, 2019, 2018 and 2017

	Twelve Months Ended December 31, 2019	Twelve Months Ended December 31, 2018	Twelve Months Ended December 31, 2017
	(\$ in millions)		
Cash Flows From/(Used In) Operating Activities:			
Net income ⁽¹⁾ (excluding equity in net earnings of subsidiaries)	\$ 174.6	\$ 224.5	\$ 323.0
Adjustments:			
Share-based compensation expenses	—	10.1	9.8
Realized and unrealized losses/(gains)	9.6	(0.7)	(2.0)
Loss on derivative contracts	(4.0)	1.8	(2.6)
Amortization of right-to-use operating lease assets	0.3	—	—
Interest on operating lease liabilities	0.2	—	—
Change in other receivables	—	—	—
Change in other assets	2.1	(0.2)	(0.2)
Change in accrued expenses and other payables	(51.2)	51.1	7.0
Change in intercompany activities	(59.0)	63.9	(27.5)
Change in operating lease liabilities	(0.5)	—	—
Net cash generated by operating activities	<u>72.1</u>	<u>350.5</u>	<u>307.5</u>
Cash Flows From/(Used in) Investing Activities:			
Proceeds/(purchases) of short term investments	—	—	25.1
Proceeds/(purchases) of fixed income securities	(75.6)	79.4	66.3
Investment in subsidiaries	(82.7)	(215.9)	(111.9)
Repayment of loan notes issued by Silverton	—	18.6	13.5
Investment in Micro-insurance	—	—	(0.1)
Net cash (used in) investing activities	<u>(158.3)</u>	<u>(117.9)</u>	<u>(7.1)</u>
Cash Flows From/(Used in) Financing Activities:			
Proceeds from issuance of ordinary shares, net of issuance costs	1.4	2.7	0.5
Proceeds from issuance of preference shares, net of issuance costs	241.6	—	—
Preference shares redeemed	—	—	(293.2)
Ordinary share repurchase	(0.1)	—	(30.0)
Ordinary and preference share dividends paid	(35.9)	(73.4)	(92.4)
Repayment of long-term debt issued by Silverton	(7.7)	—	—
Make-whole payment	(5.5)	(8.6)	—
Minority interest buy-out	(0.8)	—	—
Long-term debt redeemed	(125.0)	(125.0)	—
Cash paid for tax withholding purposes	—	(4.7)	(9.6)
Net cash from/(used in) financing activities	<u>68.0</u>	<u>(209.0)</u>	<u>(424.7)</u>
(Decrease)/increase in cash and cash equivalents	(18.2)	23.6	(124.3)
Cash and cash equivalents — beginning of period	55.6	32.0	156.3
Cash and cash equivalents — end of period	<u>\$ 37.4</u>	<u>\$ 55.6</u>	<u>\$ 32.0</u>

⁽¹⁾ Net income has been adjusted for the proportion due to non-controlling interest.

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE III - SUPPLEMENTARY INSURANCE INFORMATION
For the Twelve Months Ended December 31, 2019, 2018 and 2017

Supplementary Information
(\$ in millions)

Year Ended December 31, 2019	Deferred Policy Acquisition Costs	Net Reserves for Losses and LAE	Net Reserves for Unearned Premiums	Net Premiums Earned	Net Investment Income	Losses and LAE Expenses	Policy Acquisition Expenses	Net Premium Written	General and Administrative Expenses
Reinsurance	\$ 210.3	\$ 2,605.9	\$ 599.9	\$ 1,255.2		\$ 917.9	\$ 264.9	\$ 1,251.1	\$ 111.7
Insurance	80.8	2,026.1	694.1	1,038.1		761.8	147.8	1,176.8	229.8
Total	\$ 291.1	\$ 4,632.0	\$ 1,294.0	\$ 2,293.3	\$ 197.3	\$ 1,679.7	\$ 412.7	\$ 2,427.9	\$ 341.5

Year to date December 31, 2018	Deferred Policy Acquisition Costs	Net Reserves for Losses and LAE	Net Reserves for Unearned Premiums	Net Premiums Earned	Net Investment Income	Losses and LAE Expenses	Policy Acquisition Expenses	Net Premium Written	General and Administrative Expenses
Reinsurance	\$ 208.3	\$ 2,843.6	\$ 616.0	\$ 1,256.4		\$ 927.0	\$ 260.9	\$ 1,182.9	\$ 118.5
Insurance	40.2	2,153.0	534.3	958.3		646.0	110.7	899.1	239.2
Total	\$ 248.5	\$ 4,996.6	\$ 1,150.3	\$ 2,214.7	\$ 198.2	\$ 1,573.0	\$ 371.6	\$ 2,082.0	\$ 357.7

Year to date December 31, 2017	Deferred Policy Acquisition Costs	Net Reserves for Losses and LAE	Net Reserves for Unearned Premiums	Net Premiums Earned	Net Investment Income	Losses and LAE Expenses	Policy Acquisition Expenses	Net Premium Written	General and Administrative Expenses
Reinsurance	\$ 263.0	\$ 2,917.1	\$ 1,067.3	\$ 1,206.1		\$ 1,116.4	\$ 235.5	\$ 1,250.0	\$ 157.3
Insurance	31.3	2,317.2	268.0	1,100.5		878.3	165.0	962.5	253.9
Total	\$ 294.3	\$ 5,234.3	\$ 1,335.3	\$ 2,306.6	\$ 189.0	\$ 1,994.7	\$ 400.5	\$ 2,212.5	\$ 411.2

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE IV - REINSURANCE
For the Twelve Months Ended December 31, 2019, 2018 and 2017

Premiums Written

	<u>Direct</u>	<u>Assumed</u>	<u>Ceded</u>	<u>Net Amount</u>
	(\$ in millions)			
2019	\$ 1,956.9	\$ 1,485.5	\$ (1,014.5)	\$ 2,427.9
2018	\$ 1,951.2	\$ 1,495.7	\$ (1,364.9)	\$ 2,082.0
2017	\$ 1,812.4	\$ 1,548.5	\$ (1,148.4)	\$ 2,212.5

Premiums Earned

	<u>Gross Amount</u>	<u>Assumed From Other Companies</u>	<u>Ceded to Other Companies</u>	<u>Net Amount</u>	<u>Percentage of Amount Assumed to Net</u>
	(\$ in millions, except for percentages)				
2019	\$ 1,927.5	\$ 1,494.9	\$ (1,129.1)	\$ 2,293.3	65.2%
2018	\$ 1,940.5	\$ 1,593.9	\$ (1,319.7)	\$ 2,214.7	72.0%
2017	\$ 1,757.4	\$ 1,451.8	\$ (902.6)	\$ 2,306.6	62.9%

ASPEN INSURANCE HOLDINGS LIMITED

SCHEDULE V - VALUATION AND QUALIFYING ACCOUNTS

For the Twelve Months Ended December 31, 2019, 2018 and 2017

The following table shows the movement in the Company's bad debt provision during the twelve months ended December 31, 2019, 2018 and 2017:

Provisions for Bad Debt	Balance at Beginning of Year	Charged to Costs and Expenses	Charged to Other Accounts	Deductions	Balance at End of Year
	(\$ in millions)				
2019					
Premiums receivable from underwriting activities	\$ 16.2	\$ 6.8	\$ —	\$ —	\$ 23.0
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —
2018					
Premiums receivable from underwriting activities	\$ 5.2	\$ 11.0	\$ —	\$ —	\$ 16.2
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —
2017					
Premiums receivable from underwriting activities	\$ 5.0	\$ 0.2	\$ —	\$ —	\$ 5.2
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —

Item 19. Exhibit Index

(a) Financial Statements, Financial Statement Schedules and Exhibits

1. *Financial Statements*: The Consolidated Financial Statements of Aspen Insurance Holdings Limited and related Notes thereto are listed in the accompanying Index to Consolidated Financial Statements and Reports on page F-1 and are filed as part of this Report.

2. *Financial Statement Schedules*: The Schedules to the Consolidated Financial Statements of Aspen Insurance Holdings Limited are listed in the accompanying Index to Schedules to Consolidated Financial Statements on page S-1 and are filed as part of this Report.

3. *Exhibits*:

<u>Exhibit Number</u>	<u>Description</u>
1.1	Certificate of Incorporation and Memorandum of Association (incorporated herein by reference to exhibit 3.1 to the Company's 2003 Registration Statement on Form F-1 (Registration No. 333-110435))
1.2	Altered Memorandum of Association (incorporated herein by reference to exhibit 3.1 of the Company's Current Report on Form 6-K filed on July 29, 2019)
1.3	Amended and Restated Bye-laws (incorporated herein by reference to exhibit 3.2 of the Company's Current Report on Form 8-K filed on February 15, 2019)
3.1	Indenture, dated August 16, 2005, between the Company and Deutsche Bank Trust Company Americas, as trustee (incorporated herein by reference to exhibit 4.3 to the Company's 2004 Registration Statement on Form F-1 (Registration No. 333-119-314))
3.2	Third Supplemental Indenture, dated November 13, 2013, between the Company, as issuer, and Deutsche Bank Trust Company Americas, as trustee (incorporated herein by reference to exhibit 4.1 to the Company's Current Report on Form 8-K filed on November 13, 2013)
3.3	Fourth Supplemental Indenture, dated June 27, 2019, between the Company and Deutsche Bank Trust Company Americas, as trustee (incorporated herein by reference to exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 28, 2019)
3.4	Form of Certificate of Designations of the Company's 5.95% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, dated May 2, 2013 (incorporated herein by reference to exhibit 3.1 to the Company's Current Report on Form 8-K filed on May 2, 2013)
3.5	Specimen Certificate for the Company's 5.95% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares (incorporated herein by reference to the form of which is in exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 2, 2013)
3.6	Form of Certificate of Designation of the Company's 5.625% Perpetual Non-Cumulative Preference Shares, dated September 20, 2016 (incorporated herein by reference to exhibit 3.1 to the Company's Current Report on Form 8-K filed on September 21, 2016)
3.7	Specimen Certificate for the Company's 5.625% Perpetual Non-Cumulative Preference Shares (incorporated herein by reference to the form of which is in exhibit 4.1 to the Company's Current Report on Form 8-K filed on September 21, 2016)
3.8	Form of Certificate of Designation for the Company's 5.625% Perpetual Non-Cumulative Preference Shares represented by Depositary Shares, each such Depositary Share representing a 1/1000th interest in a 5.625% Perpetual Non-Cumulative Preference Share, dated August 13, 2019 (incorporated herein by reference to exhibit 4.1 to the Company's Current Report on Form 6-K filed on August 13, 2019)
3.9	Form of Share Certificate evidencing the 5.625% Perpetual Non-Cumulative Preference Shares represented by Depositary Shares (incorporated herein by reference to exhibit 4.2 to the Company's Current Report on Form 6-K filed on August 13, 2019)
3.10	Deposit Agreement dated as of August 13, 2019 among the Company, Computershare Inc. and Computershare Trust Company, N.A. (incorporated herein by reference to exhibit 4.3 to the Company's Current Report on Form 6-K filed on August 13, 2019)
3.11	Form of Depositary Receipt (incorporated herein by reference to exhibit 4.4 to the Company's Current Report on Form 6-K filed on August 13, 2019)

- 4.1 Agreement and Plan of Merger, dated as of August 27, 2018, by and among Aspen Insurance Holdings Limited, Highlands Holdings, Ltd, and Highlands Merger Sub, Ltd (incorporated herein by reference to exhibit 2.1 to the Current Report on Form 8-K filed on August 28, 2018)
- 4.2 Service Agreement, dated February 19, 2019, by and among Mark Cloutier, Aspen Insurance Holdings Limited and Aspen Bermuda Limited (incorporated herein by reference to exhibit 10.1 to the Company's Form 10-K/A filed on April 29, 2019)*
- 4.3 Settlement Agreement, dated as of March 28, 2019, by and among Charles Christopher O'Kane, Aspen Insurance UK Services Limited and Aspen Insurance Holdings Limited (incorporated by reference to exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 29, 2019)*
- 4.4 Management Consulting Agreement, dated March 28, 2019, between Aspen Insurance Holdings Limited and Apollo Management Holdings, L.P. (incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 29, 2019)
- 4.5 Service Agreement, dated May 19, 2014, between Scott Kirk and Aspen Insurance UK Services Limited (incorporated herein by reference to exhibit 10.17 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed on February 23, 2015)*
- 4.6 Change of Control Employment Agreement, dated February 23, 2015, between Scott Kirk, Aspen Insurance UK Services Limited and the Company (Addendum to Service Agreement) (incorporated herein by reference to exhibit 10.18 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed on February 23, 2015)*
- 4.7 Retention Letter, dated August 13, 2018, between Scott Kirk and Aspen Insurance Holdings Limited (incorporated herein by reference to exhibit 10.1 to the Current Report on Form 8-K filed on August 14, 2018)*
- 4.8 Addendum to a Change of Control Employment Agreement, dated March 15, 2018, between Scott Kirk, Aspen Insurance UK Services Limited and the Company (incorporated herein by reference to exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 19, 2018)*
- 4.9 Employment Agreement, dated October 26, 2015, by and among Aspen Insurance U.S. Services Inc. and Mr. David Cohen (incorporated herein by reference to exhibit 10.7 to the Company's Form 10-K/A filed on April 29, 2019)*
- 4.10 Aspen Insurance U.S. Services Inc. Nonqualified Deferred Compensation Plan (incorporated herein by reference to exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the three months ended March 31, 2014, filed on May 1, 2014)*
- 4.11 Amended and Restated Aspen Insurance U.S. Services Inc. Nonqualified Deferred Compensation Plan (incorporated herein by reference to exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the three months ended September 30, 2014, filed on November 7, 2014)*
- 4.12 Second Amended Restated Credit Agreement, dated March 27, 2017, among the Company, various subsidiaries therefor, various lenders and Barclays Bank plc, as administrative agent (incorporated herein by reference to exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the three months ended March 31, 2017 filed on May 4, 2017)
- 4.13 First Amendment to Second Amended and Restated Credit Agreement dated March 11, 2020, among the Company, various lenders and Barclays Bank plc, as administrative agent, filed with this report
- 4.14 Insurance Letters of Credit - Master Agreement, dated December 15, 2003, between Aspen Bermuda Limited (formerly known as Aspen Insurance Limited) and Citibank Ireland Financial Services plc. (incorporated herein by reference to exhibit 10.2 to the Company's Current Report on Form 8-K, filed on October 13, 2006)
- 4.15 Assignment Agreement, dated October 11, 2006, among Aspen Bermuda Limited (formerly known as Aspen Insurance Limited), Citibank, N.A., Citibank Ireland Financial Services plc and The Bank of New York (incorporated herein by reference to exhibit 10.5 to the Company's Current Report on Form 8-K, filed on October 13, 2006)
- 4.16 Reinsurance Deposit Agreement, dated October 11, 2006, between Aspen Bermuda Limited (formerly known as Aspen Insurance Limited) and Citibank Ireland Financial Services plc. (incorporated herein by reference to exhibit 10.6 to the Company's Current Report on Form 8-K, filed on October 13, 2006)
- 4.17 Committed Letter of Credit Facility, dated July 30, 2012, between Aspen Bermuda Limited and Citibank Europe plc (incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on July 31, 2012)
- 4.18 Committed Letter of Credit Facility, dated June 30, 2014, between Aspen Bermuda Limited and Citibank Europe plc (incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K, filed on July 3, 2014)
- 4.19 Committed Letter of Credit Facility, dated June 30, 2016, between Aspen Bermuda Limited and Citibank Europe plc (incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K, filed on June 30, 2016)

- 4.20 Deed of Amendment, dated June 29, 2018, between Aspen Bermuda Limited and Citibank Europe plc (incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on July 3, 2018)
- 4.21 Deed of Amendment, dated September 20, 2019, between Aspen Bermuda Limited and Citibank Europe plc, filed with this report
- 4.22 Amended and Restated Pledge Agreement, dated December 18, 2014, between Aspen Bermuda Limited and Citibank Europe plc, as successor by assignment to Citibank, N.A. (incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on December 18, 2014)
- 4.23 Outsourcing Agreement, dated April 20, 2018, between Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services, Inc., Aspen Bermuda Limited and Genpact International, Inc. (incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K filed on April 26, 2018)
- 4.24 Novation Agreement, dated June 29, 2018, between Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services Inc., Aspen Bermuda Limited, Genpact International, Inc. and Genpact (UK) Limited (incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K filed on July 5, 2018)
- 4.25 Outsourcing Agreement, dated as of August 31, 2018, between Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services Inc., Aspen Bermuda Limited and Cognizant Worldwide Limited (incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 7, 2018)
- 8.1 Subsidiaries of the Company, filed with this report
- 12.1 Officer Certification of Mark Cloutier, Chief Executive Officer of Aspen Insurance Holdings Limited, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed with this report
- 12.2 Officer Certification of Scott Kirk, Chief Financial Officer of Aspen Insurance Holdings Limited, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed with this report
- 13.1 Officer Certification of Mark Cloutier, Chief Executive Officer of Aspen Insurance Holdings Limited, and Scott Kirk, Chief Financial Officer of Aspen Insurance Holdings Limited, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, submitted with this report
- 101.0 The following financial information from Aspen Insurance Holdings Limited's annual report on Form 20-F for the year ended December 31, 2019 formatted in XBRL includes: (i) Consolidated Balance Sheets; (ii) Consolidated Statements of Operations and Comprehensive Income; (iii) Consolidated Statements of Shareholders' Equity; (iv) Consolidated Statements of Cash Flows; and (v) Notes to the Audited Consolidated Financial Statements, tagged as blocks of text and in detail**

* This exhibit is a management contract or compensatory plan or arrangement.

** As provided in Rule 406T of Regulation S-T, this information is "furnished" herewith and not "filed" for the purposes of Sections 11 and 12 of the Securities Act and Section 18 of the Exchange Act. Such exhibit will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act unless Aspen Insurance Holdings Limited specifically incorporates it by reference.

SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

ASPEN INSURANCE HOLDINGS LIMITED

By: /s/ Scott Kirk

Name: Scott Kirk

Title: Chief Financial Officer

Date: April 6, 2020