

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, 2022

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

Executive 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
5.625% Perpetual Non-Cumulative Preference Shares	AHL PRD	New York Stock Exchange
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

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

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

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report: 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 whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).¹ ☐

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 ☒

¹ Per SEC guidance, this blank checkbox is included on this cover page but not disclosure with respect thereto shall be made until the adopt and effectiveness of related stock exchange listing standards.

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. Our principal operating subsidiaries are: Aspen Bermuda Limited (“Aspen Bermuda”), Aspen Specialty Insurance Company (“Aspen Specialty”), Aspen American Insurance Company (“AAIC”), Aspen Insurance UK Limited (“Aspen UK”) and Aspen Underwriting Limited (“AUL”) (as corporate member of our Lloyd’s operations, Syndicate 4711, which are managed by Aspen Managing Agency Limited (“AMAL”) (together, “Aspen Lloyd’s”)), each referred to herein as an “Operating Subsidiary” and collectively referred to as the “Operating Subsidiaries”. References to “Aspen Capital Markets” or “ACM” means business conducted by our subsidiaries that participate in alternative reinsurance markets, including Peregrine Reinsurance Ltd (“Peregrine”), Aspen Cat Fund Limited (“ACF”) and related management entities, including Aspen Capital Advisors Inc. (“Aspen Advisors”) and Aspen Capital Management, Ltd (“ACML”).

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 (sometimes referred to herein as the “U.K.”) 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.

Since February 2019, the Company has been a wholly-owned subsidiary of Highlands Bermuda Holdco, Ltd. (“Parent”), which holds all of the Company’s ordinary shares. 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”). The Company’s preference shares and depositary shares are listed on the New York Stock Exchange (“NYSE”) under the following symbols: AHL PRC, AHL PRD and AHL PRE.

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. [Reserved]

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 which could adversely affect our financial condition and operating results. We have invested significant resources to develop and maintain 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.*”

Risks Related to Our Business

(Re)insurance Risks

Our financial condition and operating results may be adversely affected by the occurrence of natural disasters and other catastrophe events, as well as outbreaks of pandemic or contagious diseases.

As part of our insurance and reinsurance operations, we assume substantial exposure to losses resulting from weather-related natural catastrophes, other natural disasters 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, wildfires, drought, pandemic or contagious disease, volcanic eruptions, earthquakes and tsunamis. For the applicable period, the Company experienced exposure to Hurricane Ian, floods in Australia and South Africa and the Russia/Ukraine war, as detailed herein.

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, including the accumulation of risk exposures, to such events through a multitude of approaches (including geographic diversification, geographic limits, individual policy limits, exclusions or limitations from coverage, purchase of reinsurance, expansion of supportive collateralized capacity and adherence to Group-level risk tolerance criteria and key risk limits), 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. For further details, please refer to Item 4 - Information on the Company - Underwriting and Reinsurance Purchasing - Risk Management.

With regard to cyber-attacks, this is an area where the threat landscape continues to evolve, 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, as well as increasing regulation in the area of climate change, may have an adverse effect on our results of operations, financial condition or liquidity.

There is widespread consensus in the scientific community that there is a long-term upward trend in global air and sea temperatures that, along with shifting demographic trends in catastrophe exposed regions, has increased the severity and frequency of severe weather events and other natural catastrophes, and is likely to further increase the average economic value of expected losses in the future. Rising sea levels are also expected to increase the risk of coastal flooding in many geographical areas.

A substantial portion of our property coverages may be adversely impacted by climate change. While we have invested heavily to understand the influence of climate change on the weather and its impact on the risks that we take, we cannot predict with certainty the frequency or severity of tropical cyclones, wildfires or other natural catastrophes, and our risk assessments may not accurately reflect shifting environmental and climate related risks. Unanticipated factors could lead to additional insured losses that exceed our current estimates, resulting in disruptions to or adverse impacts on our business, the market, or our clients. Further, some of our investments, such as catastrophe-linked securities or other managed investment portfolios, could also be adversely impacted by climate change.

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

In addition, global climate change could impair our ability to predict the costs associated with future weather events. For example, a single catastrophic event could affect multiple geographic zones in unprecedented ways or the frequency or severity of such events could exceed our estimates, driving loss costs higher than we could have predicted.

In addition to exposure to the physical risks of climate change, there are transition risks associated with climate change that could impact Aspen's business and investment portfolio. Transition risks arise from the process of adjustment towards a low-carbon economy, including from the proliferation of governmental and regulatory scrutiny related to climate change and greenhouse gases and other factors, including international, federal, state, and local regulations, scrutiny, and enforcement and societal changes. A range of factors influence this adjustment, including climate-related developments in policy and regulation, the emergence of disruptive technology or business models, shifting sentiment and societal preferences, or evolving evidence, frameworks and legal interpretations. Climate change could also give rise to new environmental liability claims in the energy, manufacturing and other industries we serve, as those that have suffered losses seek compensation. In addition, the transition to a less polluting, greener economy could impact the value of our investments in impacted sectors, or demand for insurance in our casualty classes or energy exposed lines. Our investment assets could be affected by a market shift away from carbon-intensive industries or businesses, increased costs or fees associated with the production of greenhouse gases, and decreased profitability in sectors that produce or use carbon-based fuels. For example, rapid technological change, such as the development of electric vehicles or renewable energy technology, affecting the value of financial assets in these sectors; and companies in the wider economy that fail to mitigate, adapt, or disclose the financial risks from climate change being exposed to climate-related litigation, potentially leading to higher liability claims.

Additionally, demand for insurance coverage could be negatively impacted to the extent that carbon-intensive businesses are impacted by this transition, and claims and losses related to those industries could increase, either of which could have a material negative effect on our business and results of operations.

More broadly, environmental, social and governance ("ESG") and sustainability have become major topics that encompass a wide range of issues, including climate change and other environmental risks. We are subject to complex and changing laws, regulations and public policy debates relating to climate change which are difficult to predict and quantify and may have an adverse impact on our business. Changes in regulations relating to climate change or our own leadership decisions implemented as a result of assessing the impact of climate change on our business may result in an increase in the cost of doing business or a decrease in premiums. For further information, see this Item D - Strategic Risks - *"Increasing scrutiny and evolving expectations from investors, customers, regulators, policymakers and other stakeholders regarding environmental, social and governance matters may adversely affect our reputation or otherwise adversely impact our business and results of operations."*

Concerns over the negative impacts of climate change have led and will continue to lead to new regulatory responses. New laws and regulations relating sustainability and climate change are under consideration or being adopted, which may include specific disclosure requirements or obligations, including, but not limited to, underwriting and exposure data, and

this may result in additional investments and implementation of new practices and reporting processes, all entailing additional compliance costs and risk. As an example, refer to “*Regulatory Matters – Management of Climate Change Risks*” for information regarding the Bermuda Monetary Authority’s *Guidance Note on Management of Climate Change Risks for Commercial Insurers*. It is not possible to predict the impact of such regulatory changes, but they may affect the way we conduct our business and manage our capital and risk profile, which in turn could affect our results of operations, financial condition and liquidity.

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, such as the Russian invasion of Ukraine in 2022, 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 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 aim to avoid terms in our credit insurance contracts which introduce liquidity risk, most notably, in the form of a collateralization requirement upon a ratings downgrade. We also 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.

Our business may be negatively impacted as a result of the ongoing Russian invasion of Ukraine.

The ongoing Russian invasion of Ukraine has resulted in the continued imposition of broad, far-reaching economic or other sanctions by the U.S., E.U., United Kingdom and other jurisdictions on Russia and other involved countries. These sanctions frameworks continue to evolve in scope and which may have an impact on our business operations, including, but not limited to, compliance, legal and claims management, and our general financial condition, and which also present regulatory risks.

We cannot predict the direct or indirect impact of a prolonged war and any heightened military conflict, economic impact or geopolitical instability that may follow, including heightened operating risks in the E.U., heightened inflation, cyber disruptions or attacks, effects to supply chains or unrelated suppliers and service providers, and higher energy costs. A further prolonged war may also create uncertainty in the global economy in the form of oil shortages, inflationary pressures, loss of confidence and general increase in risks worldwide. It is also impossible to predict whether Russia will expand hostilities to other countries in Europe or elsewhere. Certain lines of business we write have been impacted by the invasion and the resulting sanctions packages, although the extent of the impact will depend on the ultimate outcome of the war in Ukraine, how long it is prolonged and the nature of future sanctions packages.

In addition, the Russian invasion of Ukraine may have the effect of triggering or intensifying many of the risks described elsewhere under this Item 3D. Risk Factors.

The ongoing impacts of the novel coronavirus (COVID-19), including any new or emerging variants thereof, has and may continue to pose a material risk to our business, results of operations, financial condition and liquidity.

The ongoing COVID-19 pandemic has resulted in material impacts on a global scale, including on the insurance and reinsurance industries. It is difficult to predict all of the potential impacts of COVID-19 on the markets in which we participate or the impact of any new or emerging pandemic events.

While COVID-19-related governmental and societal restrictions have been scaled back in the jurisdictions in which we operate, the pandemic significantly increased economic uncertainty. To the extent these conditions continue, recur or worsen, they could have the following impacts on our business operations and current and future financial performance and could impact us in other ways that we cannot predict:

- We have material exposure to direct and indirect losses stemming from COVID-19 related claims, and we remain exposed to additional losses or deterioration over time as the full impact of COVID-19 and its effects on the global economy are realized. The extent to which COVID-19 triggers coverage is dependent on specific policy language, terms and exclusions, the application or interpretation of which may be impacted adversely to our interests by ongoing responses to COVID-19 and other pandemics in the future by regulators and governments, as well as the courts.
- Ongoing disruption in global financial markets and economic uncertainty due to the continuing impact of COVID-19 could cause us to incur investment losses, including credit impairments in our fixed maturity portfolio, or decline in interest rates which may reduce our future net investment income.
- Responses to COVID-19, including by governments, may lead or contribute to continued high inflation.
- Our counterparty credit risk may also increase, as some of our counterparties may face increased financial difficulties due to the ongoing impacts of COVID-19 on the world economy and financial markets.
- From an operational perspective, while many of the jurisdictions in which we operate have relaxed COVID-19 restrictions, our employees, directors, officers and other stakeholders and business partners were recently and may in the future again be adversely affected by COVID-19 and any new variants thereof, or by any future pandemics, or efforts to mitigate COVID-19 and any new variants thereof, or by any future pandemics.

In addition, the COVID-19 pandemic may have the effect of triggering or intensifying many of the risks described elsewhere under this Item 3D. Risk Factors.

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

As industry practices and legislative, regulatory, judicial, socio-economic, financial, technological and other environmental conditions change, unexpected and unintended issues related to claims liabilities 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. Moreover, legislative, regulatory, judicial or social influences may impose new obligations on insurers or reinsurers in connection with the COVID-19 pandemic or climate change that extend coverage beyond the intended contractual obligations, or result in an increase in the frequency or severity of claims beyond expected levels, as described in the risk factors herein relating to COVID-19 and climate change.

In addition, increasing fraud and abuses at the primary claims level, as well as other forms of social inflation, have affected our reserving practices and loss exposures, and these trends may continue. In some instances, these changes may not become apparent until after we have issued insurance or reinsurance contracts that are affected by the changes. In addition, actual losses may vary materially from the current estimate of losses based on a number of factors, as described elsewhere in these risk factors. As a result, the full extent of liability under our insurance or reinsurance contracts may not be known for many years after issuance.

Our results may fluctuate as a result of many factors, including cyclical changes in the reinsurance and insurance industries.

Historically, the performance of the property and casualty reinsurance and insurance industries has tended to fluctuate in cyclical periods of price competition and excess underwriting capacity, followed by periods of high premium rates and

shortages of underwriting capacity. Although an individual reinsurance and insurance company's performance is dependent on its own specific business characteristics, the profitability of most property and casualty reinsurance and insurance companies tends to follow this market cycle. Further, this cyclical market pattern can be more pronounced in the reinsurance market in which Aspen Re competes and in the excess and surplus market in which Aspen Insurance primarily competes than in the standard insurance market. In addition, compared with historical cyclical periods, a cycle of increased price competition and excess underwriting capacity may continue for a prolonged period of time as new and existing reinsurance and insurance market participants and products continue to enter the reinsurance and insurance markets. Unfavorable market conditions may affect the ability of our reinsurance and insurance subsidiaries to write business at rates they consider appropriate relative to the risk assumed. If we cannot write business at appropriate rates, our business would be significantly and adversely affected.

When premium rates are high and there is a shortage of capacity in the standard insurance market, growth in the excess and surplus market can be significantly more rapid than growth in the standard insurance market. Similarly, when there is price competition and excess underwriting capacity in the standard insurance market, many customers that were previously driven into the excess and surplus market may return to the standard insurance market, exacerbating the effects of price competition.

Demand for reinsurance is influenced significantly by underwriting and investment results in both the standard insurance and the excess and surplus markets and market conditions. The supply of reinsurance is related to prevailing prices, the levels of insured losses and the levels of reinsurance industry surplus, among other factors. These in turn may fluctuate in response to changes in rates of return on investments being earned in the reinsurance industry. In addition, the supply of reinsurance is affected by a reinsurer's confidence in its ability to accurately assess the probability of expected underwriting outcomes, particularly with respect to catastrophe losses.

Since cyclicity is due in large part to the collective actions of insurers and reinsurers, general economic conditions and the occurrence of unpredictable events, we cannot predict the timing or duration of changes in the market cycle. These cyclical patterns cause our revenues and net earnings to fluctuate, which could have a material adverse effect on our financial condition or operating results

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 actions 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.

On January 10, 2022, the Company announced an agreement for a ground-up loss portfolio transfer (“LPT”) with a subsidiary of Enstar Group Limited (“Enstar”). See Item 5, Operating and Financial Review and Prospects, for further details. The LPT represents a repositioning of the adverse development cover previously entered into between the Company and Enstar in March 2020. The LPT transaction successfully closed on May 20, 2022. The nature and structure of the LPT present certain risks to the Company, including claims, marketing and reserving risks, as well as general management risks and the risk of differences in interpretation between the parties of the availability, scope and terms of coverage, all or any of which may have an uncertain impact across multiple operational functions and on our business generally.

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.

We use projections of possible losses from future catastrophic events of varying types and magnitudes as a strategic underwriting tool. 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, 2022 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. 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.

We cannot estimate losses from widespread catastrophic events, such as hurricanes, earthquakes or pandemic events like COVID-19, using traditional actuarial methods. The magnitude and complexity of losses associated with certain of these events inherently increase the level of uncertainty and, therefore, the level of management judgment involved in arriving at loss reserve estimates. Similarly, our estimate of ultimate losses related to the COVID-19 pandemic continues to be subject to significant uncertainty. This uncertainty is driven by the inherent difficulty in making assumptions around the impact of the COVID-19 pandemic due to the lack of comparable events, the ongoing nature of the event, lack of clarity as to how courts will rule on matters of coverage interpretation across different jurisdictions, and to the far-reaching impact of the

pandemic to world-wide economies and the health of the global population. As a result, actual losses for these events may ultimately differ materially from current estimates.

While we believe that our historical experience is 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, 2022. A significant portion 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 loss and claims handling expenses. 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 our reserve estimates, which could materially adversely affect our financial results.

Only reserves applicable to losses and loss adjustment expenses incurred up to the reporting date may be set aside in our financial statements, with no allowance for future losses. Our estimates of reserves for losses and loss expenses also include assumptions about future payments for settlement of claims and claims-handling expenses, such as medical treatment, awards for pain and suffering and litigation costs. We write casualty business in certain jurisdictions and other territories where claims inflation has for many years run at higher rates than general inflation. To the extent economic or social inflation, such as through outsized court awards, particularly in the U.S., 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.

We may be adversely impacted by economic inflation and social inflation.

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

During 2022, inflation reached and stayed unusually high in many parts of the world, and central banks in the U.S. and other countries aggressively raised interest rates to counter inflation by slowing economic activity. Monetary policy tightening actions were ongoing at December 31, 2022, and their long-term impact on financial markets and the real economy is still uncertain. Uncertainty and market turmoil has affected and may in the future affect, among other aspects of our business, the demand for and claims made under our products, the ability of customers, counterparties and others to establish or maintain their relationships with us, our ability to access and efficiently use internal and external capital resources and our investment performance and portfolio.

In addition, steps taken by central banks to control inflation and/or governments to stabilize financial markets and improve economic conditions may be ineffective, and actual or anticipated efforts to continue to unwind some of such steps could disrupt financial markets and/or could adversely impact the value of our investment portfolio. Further increases in interest rates would decrease unrealized gains and/or increase unrealized losses on our debt securities portfolio. Higher inflation could lead to even higher interest rates, which would continue to negatively impact the value of our existing fixed income or other investments.

We monitor the risk that the principal markets in which we operate could continue to experience increased inflationary conditions, which would, among other things, cause policyholder loss costs to increase, and negatively impact the performance of our investment portfolio. Inflation related to medical costs, wage costs, construction costs and tort issues in particular have impacted and continue to impact the property and casualty industry, and broader market inflation has increased and may continue to increase overall loss costs. The impact of inflation on loss costs could be more pronounced for those lines of business that are considered to be long-tail in nature, as they require a relatively long period of time to finalize and settle claims. We also provide coverage to the mortgage industry through insurance and reinsurance of mortgage insurance companies and U.S. government sponsored entity credit risk sharing transactions, and deteriorating economic conditions could cause mortgage insurance losses to increase and adversely affect our results of operations or financial condition.

The current inflationary environment and its potential future variability are sources of uncertainty for our business and industry, and are exacerbated by social inflation trends, including increased litigation, expanded theories of liability and rising settlement amounts and jury awards.

In response to these inflationary impacts, we continue to assess and, where appropriate, initiate new or enhanced modeling and monitoring approaches to forecast and manage our results; however, there can be no assurance these approaches will shield us from the negative effects of rising inflation, which could materially and adversely impact our results of operations or financial condition.

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 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 income comprises a substantial portion of our group income. We, subsequently are exposed to significant financial and capital market risks, including changes in interest rates, credit spreads, credit defaults, foreign exchange rates, market volatility impacting the valuation of our investments, the performance of the economy in general, and other factors outside our control. The impact of geopolitical tension, such as a deterioration in the bilateral relationship between the U.S. and China or an escalated or prolonged conflict between Russia and Ukraine, including any resulting sanctions, export controls or other restrictive actions that may be imposed by the U.S. and/or other countries against governmental or other entities in, for example, Russia, also could lead to disruption, instability and volatility in the global markets, which may have an impact on our investments across negatively impacted sectors or geographies.

A significant portion of our investments could be influenced by changes in interest rates across a number of geographies. 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, which we experienced in 2022. Furthermore, 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.

In 2022, many central banks have raised interest rates, which could act as a countervailing force against some inflationary pressures. Historic increases in interest rates have driven significant short-term mark-to-market losses in our investment portfolio. We expect to see a reversal of the mark-to-market losses from accretion to par for certain securities that we hold to maturity. However, 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.

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.

Our business may be negatively impacted by adverse developments affecting the financial services industry, such as actual events or concerns involving liquidity, defaults or non-performance by financial institutions and the potential contagion impact to, and resulting stress on, the financial services sector generally.

Actual events involving limited liquidity, defaults, non-performance or other adverse developments that affect financial institutions or other companies in the financial services industry or the financial services industry generally, or concerns or rumors about any events of these kinds or other similar risks, have in the past and may in the future lead to market-wide liquidity problems. For example, on March 10, 2023, Silicon Valley Bank, domiciled in Santa Clara, California (“SVB”) was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation (“FDIC”) as receiver. Following the collapse of SVB, similar distress has been seen across the banking sector; for example, on March 12, 2023, Signature Bank and Silvergate Capital were each placed into receivership. In addition, later that same week, Credit Suisse and UBS entered into a merger agreement following the intervention of the Swiss Federal Department of Finance, the Swiss National Bank and the Swiss Financial Market Supervisory Authority. UBS will be the surviving entity upon closing of the merger transaction.

Although we assess our banking relationships as we believe necessary or appropriate, we cannot guarantee that the banks or other financial institutions that hold our funds will not experience similar issues. We cannot predict the full impact of the stress on the financial services sector and any heightened macroeconomic or political instability that may follow, including any regulatory changes. This could include impacts on the availability of our existing cash and cash equivalents or market value of our investments, or those of our trading partners such as regional program managers. In addition, we may be exposed to losses through our underwriting segments, including, but not limited to, within our professional lines portfolio.

In addition, widespread investor concerns regarding the U.S. or international financial systems could result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Any decline in available funding or access to our cash and liquidity resources could, among other risks, adversely impact our ability to meet our operating expenses, financial obligations or fulfill our other obligations, or result in breaches of our financial and/or contractual obligations. Any of these impacts, or any other impacts resulting from the factors described above or other related or similar factors not described above, could have material adverse impacts on our liquidity and our current and/or projected business operations and financial condition and results of operations.

Our business may be adversely impacted by these developments in ways that we cannot predict at this time, there may be additional risks that we have not yet identified, and we cannot guarantee that we will be able to avoid negative consequences directly or indirectly from any failure of one or more banks or other financial institutions. Any of the foregoing could have a material adverse effect on our business, financial condition, liquidity and results of operations. In addition, the foregoing may have the effect of triggering or intensifying many of the risks described elsewhere under this Item 3D. Risk Factors.

LIBOR has been or will be discontinued as a floating rate benchmark; SOFR is expected to replace U.S. dollar LIBOR as the principal floating rate benchmark for U.S. dollars; the LIBOR discontinuation has affected and will continue to affect financial markets generally and may also affect our business, financial condition, results of operations and cash flows.

LIBOR has been the principal floating rate benchmark in the financial markets. However, as of December 31, 2021, all currencies and tenors of LIBOR, except the principal tenors of U.S. dollar LIBOR, were discontinued or ceased to be representative. The remaining tenors of U.S. dollar LIBOR are expected to be discontinued, or to become non-representative, as of June 30, 2023. For some existing LIBOR-based obligations, including certain of our assets, liabilities and securities, such as our 5.950% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, the contractual consequences of the discontinuation of LIBOR are not clear. In addition, there is no assurance that the remaining tenors of U.S. dollar LIBOR will continue to be published until June 30, 2023 or in any particular form, and there is no assurance regarding the consequences of the LIBOR discontinuation generally.

In the United States, there have been efforts to identify alternative reference interest rates for U.S. dollar LIBOR. It is expected that U.S. dollar LIBOR will be replaced principally by rates based on the Secured Overnight Financing Rate (“SOFR”), with SOFR having been identified by the Alternative Reference Rates Committee, convened by the Federal Reserve Bank, as its preferred alternative rate to U.S. dollar LIBOR. For purposes of the following discussion, the term “LIBOR” refers solely to U.S. dollar LIBOR. SOFR has a limited history, having been first published in April 2018. The future performance of SOFR, and SOFR-based reference rates, cannot be predicted based on SOFR’s history or otherwise. Future levels of SOFR may bear little or no relation to historical levels of SOFR, LIBOR or other rates. SOFR has been more volatile than other benchmark or market rates, such as three-month LIBOR, during certain periods. Moreover, SOFR-

based rates will differ from LIBOR, and the differences may be material. SOFR is intended to be a broad measure of the cost of borrowing funds overnight in transactions that are collateralized by U.S. Treasury securities. In contrast, LIBOR has been intended to be sensitive to bank credit risk and to short-term interest rate risk. It is expected that more than one SOFR-based rate will be used in the financial markets. Like LIBOR, some SOFR-based rates will be forward-looking term rates; other SOFR-based rates will be intended to resemble rates for term structures through their use of averaging mechanisms applied to rates from overnight transactions, as in the case of “simple average” or “compounded average” SOFR. Different kinds of SOFR-based rates will result in different interest rates. Mismatches between SOFR-based rates, and between SOFR-based rates and other rates, may cause economic inefficiencies, particularly if market participants seek to hedge one kind of SOFR-based rate by entering into hedge transactions based on another SOFR-based rate or another rate. Non-LIBOR floating rate obligations, including SOFR-based obligations, may have returns and values that fluctuate more than those of floating rate obligations that are based on LIBOR or other rates. Also, because SOFR and some alternative floating rates are relatively new market indexes, markets for certain non-LIBOR obligations may never develop or may not be liquid. Market terms for non-LIBOR floating rate obligations, such as the spread over the index reflected in interest rate provisions, may evolve over time, and prices of non-LIBOR floating rate obligations may be different depending on when they are issued and changing views about correct spread levels. Resulting changes in the financial markets may adversely affect financial markets generally and may also adversely affect our business, financial condition, results of operations and cash flows specifically.

As of December 31, 2022, certain of our assets, liabilities, investments and securities had LIBOR-based rates. For example, our investment portfolio included \$1.6 billion of floating-rate investments, of which 56% by market value (\$883.6 million) were tied to LIBOR. More than 91% by market value (\$807.8 million) of LIBOR-linked investments include fallback language for benchmark changes, while the remaining investments are currently in different stages of the amendment process to comply with LIBOR cessation.

We have taken, are taking, or expect to take, steps intended to result in LIBOR being replaced, in connection with such assets, liabilities and securities, with SOFR-based rates or other appropriate floating rates. Some jurisdictions have implemented legislation to expressly provide a mechanism for a transition away from LIBOR in affected assets, liabilities and securities, however, such legislation may not be applicable to Aspen Holdings or other members of the Aspen Group. The Bermuda Government has not passed any such transition legislation and the BMA has not issued any specific guidance in relation to the same.

There can be no assurance regarding how or when LIBOR will be replaced, or what the replacement rate or rates will be. Further, uncertainty regarding the continued use and reliability of LIBOR, regarding the calculation of applicable interest rates or payment amounts depending on the terms of our LIBOR-based assets, liabilities, investments and securities, or regarding the application or effectiveness of replacement reference rates, could affect the value of such instruments or our net investment income and, accordingly, may have an adverse effect on our business, financial condition, results of operations and cash flows, material or otherwise. Further, the appropriateness or effectiveness of, or ability to apply or rely on, fallback language or designated alternative benchmark rate language in the Company’s LIBOR-linked material instruments and agreements, in particular the Company’s 5.950% Fixed-to-Floating Rate Perpetual Non-Cumulative Preference Shares, cannot yet be determined. All or any of the foregoing could impact our results of operations, liquidity or the market value of such instruments and/or present meaningful litigation, reputational, capital, regulatory or execution risks.

Our investments in private, secured CMLs and private, secured MMLs 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, 2022, a small portion of our total invested assets were invested in private, secured CMLs and in private, secured MMLs. 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 portfolios that 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.

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 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 some or all of these 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 consequently sell these assets at significantly lower values to the recorded value. 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 and 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 investments.

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

In recent months due to significant inflation, the rapid and strong rise in interest rates, ongoing uncertainty as to the emergence of potential new COVID-19 variants, the collapse of Silicon Valley Bank, the merger of Credit Suisse and UBS and the associated stress on the financial services sector and the ongoing Russian invasion of Ukraine, 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 mortgage markets may also affect our counterparties which could adversely affect their ability to meet their obligations to us.

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 or any 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.

Such matters may have the effect of triggering or intensifying many of the risks described elsewhere under this Item 3D. Risk Factors.

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 a detailed analysis each reporting period end to assess declines in the fair values of available for sale debt securities in accordance with applicable accounting guidance regarding the recognition and presentation of current expected losses. The process of determining an allowance for available for sale securities requires judgment and involves analyzing many factors. For additional information regarding this process, and the 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 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 our current allowance is not material, the current allowance 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, the Euro, the Swiss Franc, the Australian Dollar, the Canadian Dollar and the Singapore Dollar. At December 31, 2022, approximately 13.8% 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.

Credit Risks

Our operating results may be adversely affected by the failure of policyholders, brokers or other intermediaries or reinsurers 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.

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.

During periods of economic uncertainty, such as the current environment, our consolidated credit risk to these parties may materially increase.

Strategic Risks

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. Until recently, new and alternative capital inflows in the (re)insurance market and the retention by cedants of more business had caused an excess supply of (re)insurance capital and may again in the future. We have sought to address this risk by developing our own capital markets capability.

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 and S&P 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 or S&P. Refer to Item 4, "Business Overview - Ratings." These ratings are intended to measure a company's ability to repay its obligations and are based upon criteria established by the rating agencies. Ratings may be solicited or unsolicited.

The rating agencies with whom we maintain an interactive rating relationship for the purposes of the solicited ratings, currently A.M. Best and S&P, continuously evaluate us to confirm that we continue to meet the criteria of the rating assigned to us. Our ratings may be revised downward or revoked at the sole discretion of the rating agencies. The financial strength ratings assigned by rating agencies to insurance or reinsurance companies are based upon factors relevant to cedants, which include factors not entirely within our control, including factors impacting the financial services, insurance and reinsurance industries generally. Financial strength ratings by rating agencies are not ratings of securities or recommendations to buy, hold or sell any security.

If our Operating Subsidiaries' or if Lloyd's ratings are reduced from their current levels by either A.M. Best 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 UK, Aspen Bermuda, AAIC or Aspen Specialty by A.M. Best below "B++" would constitute an event of default under one or more of our financing facilities. 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.

There can be no assurance that we and our subsidiaries will not experience 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. Our existing ratings by A.M. Best and 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.

The S&P financial strength and issuer credit ratings of Aspen Bermuda, AAIC and Aspen UK are “A-” (Strong), while the long-term issuer credit rating of Aspen Holdings is “BBB”. The outlook assigned to all these ratings is stable. Aspen Specialty is not currently rated by S&P and has a financial strength rating of “A” (Excellent) by A.M. Best with a stable outlook. On April 30, 2021, A.M. Best affirmed the financial strength rating of “A” (Excellent) for Aspen Bermuda, Aspen UK Aspen Specialty and AAIC and upgraded its outlook to stable from negative, and both the rating and outlook were affirmed on May 26, 2022. Aspen Lloyd’s benefits 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.

In addition, as a result of their rating of Highlands Holdings Bond Issuer, Ltd. and Highlands Holdings Bond Co-Issuer, Inc. (the “Issuers”) and the \$500 million aggregate principal amount of their 7.625% / 8.375% Senior Secured PIK Toggle Notes due 2025 (the “Notes”), S&P takes into consideration the Issuers in their view of the wider Aspen Group when evaluating the adequacy of our capital reserves for purposes of determining financial strength and issuer credit ratings accorded to our Operating Subsidiaries. In addition, S&P expects us to maintain capital adequacy above the “AAA” level to maintain our “A-” rating. Should we experience weaker than-expected underwriting performance, should our capital adequacy position decline and remain below the “AAA” level for a prolonged period, should our financial leverage materially increase or liquidity materially decrease, among other factors, we may be required to maintain a greater amount of capital in order to maintain our existing ratings or become subject to a ratings downgrade.

Both A.M. Best and S&P are widely recognized insurance company rating agencies and some policyholders are required to obtain insurance coverage from insurance companies that have an “A-” (Strong) rating or higher. Because A.M. Best and S&P continually monitor companies with regard to their ratings, our ratings could change at any time. Any downgrade in our ratings 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. In December 2021, S&P announced proposed changes to its rating methodologies. On March 14, 2023, S&P announced that it was still in the process of finalizing the new rating methodology, which is expected to be published during the second quarter of 2023. The proposed changes have not been finalized, so the impact, if any, these changes may have on our ratings or capital management framework is unknown.

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 and 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.

Increasing scrutiny and evolving expectations from investors, customers, regulators, policymakers and other stakeholders regarding environmental, social and governance matters may adversely affect our reputation or otherwise adversely impact our business and results of operations.

Internal and external stakeholders, including regulators and investors, have placed increased importance on how we are addressing ESG issues. In addition, regulators have adopted and likely will continue to adopt ESG-related rules and guidance, which may conflict with one another and impose additional costs and operational burdens on us. ESG encompasses a wide range of issues, including climate change and other environmental risks. Our senior management team and the board of directors of Aspen Holdings are actively engaged in understanding the ever-changing ESG landscape and assessing our business operations to ensure that our business strategy reflects our commitment to building a business that

embraces ESG principles. We cannot predict whether our business decisions, business strategy and disclosures relating to climate change and other ESG issues will meet the expectations or requirements of relevant stakeholders, including regulators. If we are unable to meet targets, standards, or expectations, whether established by us or third parties, it could result in adverse publicity, reputational harm, or loss of customer and/or investor confidence, which could adversely affect our business and results of operations.

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 or entering into strategic ventures with third parties. The negotiation of these transactions as well as the integration of an acquired business or new personnel could result in a substantial diversion of management resources. Successful integration depends, among other things, on our ability to effectively integrate acquired businesses or new personnel into our existing risk management and financial and operational reporting systems, establish satisfactory budgetary and other financial controls, 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.

There can be no assurance that the integration of acquired businesses or new personnel will be successful, that we will realize anticipated synergies, cost savings and operational efficiencies, or that the business acquired will prove to be profitable or sustainable. The failure to integrate acquired businesses successfully or to manage the challenges presented by the integration process may adversely impact our financial results. Acquisitions could involve numerous additional risks such as potential losses from unanticipated litigation or levels of claims and inability to generate sufficient revenue to offset acquisition costs. In addition, the value of assets acquired may be lower than expected or may diminish due to credit defaults or changes in interest rates or the liabilities assumed may be greater than expected. Our ability to grow through acquisitions will depend, in part, on our success in addressing these risks. Our failure to manage successfully any of the foregoing challenges and risks may adversely impact our 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. In 2022, three brokers, Aon Corporation, Marsh & McLennan Companies, Inc., and Willis Group Holdings, Ltd., accounted for 30.3%, 32.4%, and 10.6%, respectively, of our reinsurance gross written premiums. In our insurance business, ten brokers collectively accounted for 73.5% of our gross written premiums, with Aon Corporation and Marsh & McLennan Companies, Inc. accounting for 16.6% and 14.3%, respectively. Refer to Item 4, “Business Overview - Business Distribution” below for our principal brokers by segment. Our relationships with our brokers and agents 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 and agents 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 impact on our business and results of operations.

In addition, there has been a trend of increased consolidation of agents and brokers and of agents and brokers reducing the numbers of insurers with which they do business to gain efficiency for their placement efforts. 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 Lloyds’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.

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 (“ACM”) 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 to redeem their interests in the entities we manage, 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. In addition, the value of any collateral held may be impacted by macroeconomic, geopolitical or other factors that could lead to investment volatility.

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. Additionally, in a rising interest rate environment such as the one prevailing recently, such financing may result in a higher cost of capital. 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.

In addition, we may not achieve the desired regulatory capital treatment for any potential issuance of debt or equity securities due to changing solvency capital eligibility requirements under the Bermuda Insurance (Group Supervision) Rules 2011 (the “Group Supervision Rules”) to which we are subject. For these instruments to continue to receive the intended regulatory capital treatment, their terms must reflect the criteria contained in the Group Supervision Rules and any amendments thereto. If the BMA applies any changes to the Group Supervision Rules governing eligible capital such that our outstanding preferred shares and notes no longer receive their intended capital treatment under the Group Supervision Rules, we may be unable to maintain adequate regulatory capital. If we cannot obtain adequate capital or credit, our business, results of operations and financial condition could be adversely affected by, among other things, our inability to finance future acquisitions.

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.

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. Such agreements also typically contain reporting and disclosure affirmative covenants. 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 and require collateralization of any current or future obligations of the Company. Additionally, a default under our debt, credit facilities or ISDA agreements could limit our ability to obtain credit or enter into such transactions on favorable terms, or at all. 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. In addition, 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.

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 political, regulatory, governmental or industry 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. We maintain policies and procedures designed to comply with these laws and regulations. As part of our business, we may, from time to time, engage in limited sales and transactions involving certain countries that are targets of economic sanctions, provided that such sales and transactions are authorized pursuant to applicable economic sanctions laws and regulations. However, we cannot predict the nature, scope or effect of future regulatory requirements, including changes that may affect existing regulatory authorizations, and we cannot predict the manner in which existing laws and regulations might be administered or interpreted. Further, there can be no guarantee that our policies and procedures will be effective in preventing violations, which could adversely affect our reputation, business, financial condition or results of operations. If in the future we are found to be in violation of U.S. sanctions or export control laws, it could result in substantial fines and penalties for us. 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.

During 2022, Aspen Bermuda obtained reciprocal jurisdiction reinsurer status with Texas as its lead state. Reinsurers licensed in reciprocal jurisdictions (which include European Union member states, Bermuda, Japan and Switzerland) are not required to post reinsurance collateral if approved as reciprocal jurisdiction reinsurers. With its approval from Texas, Aspen Bermuda was able to facilitate passporting applications in additional states throughout 2022 and renewed the same for 2023. "Passporting" refers to the process under which a state has the discretion to defer to the determination by another state that a reinsurer is a reciprocal jurisdiction reinsurer, thereby excusing the approved reinsurer from collateral requirements in such state. Aspen Bermuda also retains its status as a certified reinsurer in a number of U.S. states, enabling it to provide reduced collateral for historical risks written. There is no guarantee that Aspen Bermuda will maintain its reciprocal jurisdiction reinsurer or certified reinsurer status, and changes in laws and regulations applicable to the provision of collateral by offshore or unauthorized reinsurers such as Aspen Bermuda may have a material adverse impact on our capital management approach, financial condition, results of operations, liquidity, cash flows and prospects. Refer to Item 4, "Information on the Company — Business - Regulatory Matters - U.S. Regulation - "Credit for Reinsurance".

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. Moreover, we could be, or our employees acting on our behalf, could be found to have violated existing laws, rules or regulations. Our regulators have the ability to make regulatory interventions using their powers, including through investigations, requests for data and analysis, interviews or reviews (including skilled persons reports under section 166 of FSMA), which regulatory intervention may require specific remediation, including via guidance on a confidential basis, in respect of historical practices, changes to our existing practices, public censure, the loss or restriction of regulatory permissions necessary to carry out our business in the same manner as before, and/or additional regulatory capital to be held.

We are involved in periodic meetings with, and reviews by, regulators, pursuant to which they review our business and provide challenges in order to test and validate the supervisory and work plan adopted by their supervisory teams. Through such processes, our regulators may validate and/or challenge, among other things, our strategy, business plans, internal governance, risk and capital management and compliance frameworks. Our regulators have required us, and we are under continuing obligations, to remediate failures, weaknesses and other issues that they have identified, including, but not limited to, with respect to our underwriting performance, reserving risk and capital management, and governance, which, if we are unsuccessful in remediating could result in greater regulatory intrusion, enforcement action and/or the exercise of our regulators' own initiative powers (including imposing restrictions on our underwriting and/or a requirement to maintain additional capital, which would reduce our underwriting capacity). We are currently in the process of implementing initiatives to improve our business, including our underwriting performance, risk and capital management and governance, which, if we are unable to successfully implement could result in greater regulatory intrusion and/or enforcement action or the exercise of our regulators' own initiative powers, which could have a material adverse effect on our business, results of operations and financial condition.

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 to which we are subject, 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 withdrawal from the E.U. and its potential adverse impact on our business, results of operations and financial condition.

The Company continues to face regulatory costs and challenges as a result of Brexit. The U.K. left the E.U. as of January 31, 2020 and economic relations between the U.K. and the E.U. are now governed by a Trade and Cooperation Agreement (“TCA”). In February, 2022, a U.K.-E.U. Financial Services inquiry was launched by U.K. Parliament. The European Affairs Committee published the report in June 2022, finding that the TCA is limited in scope, containing only limited provisions relating to insurance and financial services, with the House of Lords raising concerns about the lack of a functioning framework for U.K.-E.U. cooperation. The Memorandum of Understanding on regulatory cooperation, which was promised by both sides is yet to be signed and has been held up because of difficulties in the U.K.-E.U. relationship. The report also found an absence of E.U. equivalence in decisions over financial services, which will determine how London will fit into the E.U. market post-Brexit. Overall, the Committee called on Government to step up its political and diplomatic engagement with the E.U. regarding financial services. Accordingly, in June 2022, the Treasury Select Committee announced it is forming a subcommittee to scrutinize proposed post-Brexit financial regulations in the U.K., replacing the role previously held by the E.U.

As a result of Brexit, Aspen UK has lost its financial services passports which provided it the license to operate across borders within the European Economic Area (“EEA”) without obtaining local regulatory approval where insurers and cedants are located. The Company’s EEA Lloyd’s operations are able to continue through Lloyd’s Insurance Company, S.A. (“Lloyd’s Brussels”).

However, operational and capital requirements relating thereto might result in increased costs or Funds at Lloyd’s (as defined below in **Lloyd’s Regulation**) and might not provide the same access to markets that the Company formerly enjoyed to conduct business in the EEA. In addition, the ability to access the E.U. market through our Lloyd’s Syndicate depends on Lloyd’s being able to comply with E.U. regulations through its Belgium subsidiary. Lloyd’s continues to engage in discussions with the Belgium Financial Services Markets Authority (“FSMA”) and the National Bank of Belgium (“NBB”) regarding the Lloyd’s Brussels operating model and the activities performed for it by managing agents (through an outsourcing agreement between AMAL and Lloyd’s) and the question of whether it is possible that they could be construed as constituting insurance distribution under Directive (EU) 2016/97 (the “Insurance Distribution Directive”), which would therefore require them to be authorized within the EEA.

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

Our internal controls over financial reporting 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 designed 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 have gaps or other deficiencies. During 2022, we continued to identify a material weakness in internal control over financial reporting relating to insufficient resources with appropriate level of knowledge within our outwards reinsurance operations and accounting team to effectively design and execute our process level controls around reinsurance premiums payable and reinsurance receivables, and associated disclosure controls. For details of the remediation measures, refer to Item 15 “Changes in Internal Controls over Financial Reporting.”

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 it has been fully remediated in the future. 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.

In 2022 and 2021, as a result of material weaknesses in our internal control over financial reporting, management concluded that our internal controls over financial reporting were ineffective as of December 31, 2022 and 2021, respectively. There can be no guarantee that these material weaknesses will not recur, that additional material weaknesses will not develop, or that our remediation efforts will be successful.

We could be adversely affected by the loss of one or more of our senior underwriters or other members of our senior management team 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 may be exposed to general employee and third-party litigation risks, which could harm our business, financial condition, and results of operations.

In the ordinary course of business, we may be involved in various litigation matters, including but not limited to commercial disputes, employee claims and class actions (including, by way of example, employee allegations of improper termination and discrimination and claims related to violations of applicable government laws regarding religious freedom, advertising and intellectual property) and from time to time may be involved in governmental or regulatory investigations or similar matters arising out of our current or future business. Any claims asserted against us, regardless of merit or eventual outcome, could harm our reputation and have an adverse impact on our relationship with our customers, partners and other third parties and could lead to additional related claims. Our insurance or indemnities may not cover all claims that may be asserted against us, and any claims asserted against us, regardless of merit or eventual outcome, may harm our reputation and cause us to expend resources in our defense. Furthermore, there is no guarantee that we will be successful in defending ourselves in future litigation or similar matters under various laws. If judgments or settlements in any future litigation or investigation significantly exceed our insurance coverage, our business, financial condition, and results of operations could be adversely affected.

Management turnover creates uncertainties and could harm our business.

We rely heavily on our executive officers to manage our operations for the success of our business. Management must have a thorough understanding of our various business lines, as well as the skills and experience necessary to manage our organization. Often, the appointment of new executives leads to changes in strategic or operating goals, which can create uncertainty and negatively impact our ability to execute quickly and effectively, and may ultimately be unsuccessful. In addition, executive leadership transition periods are often difficult as the new executives gain detailed knowledge of our operations, and friction can result from changes in strategy and management style. Management turnover inherently causes some loss of institutional knowledge, which can negatively affect strategy and execution. If we do not integrate new executives successfully, we may be unable to manage and grow our business, and our financial condition and profitability may suffer as a result. In addition, to the extent we experience additional management turnover, competition for top management is high and it may take time to find a candidate that meets our requirements. If we are unable to attract and retain qualified management personnel, our business could suffer. We are unable to predict with certainty the impact that any leadership changes may have on our business operations, prospects, financial results, retention of key professionals and other employees or morale.

We may lose our foreign private issuer status which would then require us to comply with the Exchange Act's domestic reporting regime and cause us to incur significant legal, accounting and other expenses.

For so long as we qualify as a foreign private issuer, we are not required to comply with all of the periodic disclosure and current reporting requirements of the Exchange Act applicable to U.S. domestic issuers. We may no longer be a foreign private issuer as early as June 30, 2023 (the last business day of the second fiscal quarter of 2023), which would require us to comply with all of the periodic disclosure and current reporting requirements of the Exchange Act applicable to U.S. domestic issuers as of January 1, 2024. In order to maintain our current status as a foreign private issuer, either (a) a majority of our voting, common securities must be either directly or indirectly owned of record by non-residents of the United States or (b)(i) a majority of our executive officers or directors cannot be U.S. citizens or residents, (ii) more than 50% of our assets must be located outside the United States and (iii) our business must be administered principally outside the United States. If we lose our status as a foreign private issuer, we would be required to comply with the Exchange Act reporting and other requirements applicable to U.S. domestic issuers, which are more detailed and extensive than the requirements for foreign private issuers. We may also be required to make changes in our corporate governance practices in accordance with various SEC and NYSE rules. As a result of the above, you may not have the same protections afforded to shareholders of companies that are not foreign private issuers. Should we lose our foreign private issuer status, we will incur significant additional legal, accounting and other expenses that we would not incur as a foreign private issuer, which could have a material adverse effect on our business, nature of operations and financial results.

We rely on the execution of 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 effective execution of 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 data security and/or technology 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, (including ransomware), 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. 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 potentially resulting in a violation of applicable privacy, data protection or other laws, 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.

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.

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 conduct business or communicate with 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. 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 expose our business to reputational harm 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. Cybersecurity regulations vary by region or country in which we operate and can cover different aspects of business operations involving protecting data and information.

Our business is subject to the E.U. General Data Protection Regulation ("E.U. GDPR") which went into effect on May 25, 2018. The U.K. has implemented a similar law: the U.K. GDPR (and together with the E.U. GDPR, the "GDPR"). The GDPR has direct effect where an entity is established in the EEA or the U.K. and has extraterritorial effect where an entity established outside of the EEA or the U.K. processes personal data in relation to the offering of goods or services to individuals in the EEA and/or the U.K. The GDPR imposes a number of obligations on controllers, including, among others: (i) accountability and transparency requirements, which require controllers to demonstrate and record compliance with the GDPR and to provide more detailed information to data subjects regarding processing; (ii) enhanced requirements for obtaining valid consent; (iii) obligations to consider data protection as any new products or services are developed and to limit the amount of personal data processed; (iv) obligations to comply with data protection rights of data subjects including a right of access to and rectification of personal data, a right to obtain restriction of processing or to object to processing of personal data and a right to ask for a copy of personal data to be provided to a third party in a useable format and erasing personal data in certain circumstances; (v) obligations to implement appropriate technical and organizational security measures to safeguard personal data; and (vi) obligations to report certain personal data breaches to the relevant supervisory authority without undue delay (and no later than 72 hours where feasible).

In addition, the E.U. GDPR also prohibits the international transfer of personal data from the EEA/U.K. to countries outside of the EEA/U.K. unless made to a country deemed to have "adequate" data privacy laws by the European Commission or U.K. Government or a data transfer mechanism has been put in place. In July 2020, the Court of Justice of the European Union ("CJEU") in its Schrems II ruling invalidated the E.U.-U.S. Privacy Shield framework, a self-certification mechanism that facilitated the lawful transfer of personal data from the EEA/U.K. to the United States, with immediate effect. The CJEU upheld the validity of standard contractual clauses ("SCCs") as a legal mechanism to transfer

personal data but companies relying on SCCs will need to carry out a transfer privacy impact assessment, which among other things, assesses laws governing access to personal data in the recipient country and considers whether supplementary measures that provide privacy protections additional to those provided under SCCs will need to be implemented to ensure an essentially equivalent level of data protection to that afforded in the EEA. The U.K. has also published its own forms of these clauses called an International Data Transfer Agreement (“IDTA”) and its own transfer risk assessment tool. However, parties may alternatively choose to rely on the E.U. SCCs with a U.K. Addendum, and the E.U. transfer privacy impact assessment. In terms of international data transfers between the U.K. and U.S., it is understood that the U.K. and the U.S. are negotiating an adequacy agreement.

Furthermore, on 7 October 2022, the U.S. President introduced an Executive Order to facilitate a new Trans-Atlantic Data Privacy Framework which will act as a successor to the invalidated Privacy Shield. If approved by the European Commission and implemented, the agreement will facilitate the transatlantic flow of personal data and provide additional safeguards to any existing data transfer mechanisms (including SCCs) for companies transferring personal data from the E.U. to the U.S. However, before parties rely on the new Framework, there are still legislative and regulatory steps that must be undertaken both in the U.S. and in the E.U. Therefore, at present the new E.U. SCCs are still the primary safeguard available for personal data transfers from the E.U. to the U.S. As such, the current legal position may have implications for our cross-border data flows and may result in compliance costs.

Our business is also subject to the incoming Bermuda personal Information Protection Act (PIPA) For a description of the risks, refer to Item 4, “Information on the Company — Regulatory — Cybersecurity and Privacy Laws”. In addition to U.K./E.U. and Bermuda privacy laws, our Business is subject to various U.S. state and federal privacy legislation, with the most comprehensive having been enacted in California. U.S. states continue to develop and implement further standards and governance requirements.

In 2023, additional state privacy laws will become effective, including the California Privacy Rights Act, which will amend several key areas of the CCPA. These new laws are expected to define the U.S. privacy landscape in lieu of a federal privacy framework.

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. We also use vendor models where available and, where appropriate, we use our proprietary model in combination with vendor models. 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. In addition, from time to time in the future, we may issue additional ordinary shares, securities convertible into ordinary shares, or other equity securities (including those with rights, preferences and privileges that are senior to those of our other securities, including the preference shares) to raise additional capital or pursuant to a variety of transactions.

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. 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. As we are a holding company, our right, and hence the right of our creditors and shareholders, to participate in any distribution of assets by any of our subsidiaries, upon our liquidation or reorganization or otherwise, is subject to the prior claims of policyholders and creditors of these subsidiaries.

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

We are incorporated in Bermuda and many of our operating companies are domiciled in Bermuda. Therefore, changes in Bermuda law and regulation may have an adverse impact on our operations, such as the imposition of tax liability, increased regulatory supervision or changes in regulation.

In addition, we are subject to changes in the political environment in Bermuda, which could make it difficult to operate in, or attract talent to, Bermuda. In addition, Bermuda, which is currently an overseas territory of the U.K., may consider changes to its relationship with the U.K. in the future. These changes could adversely affect Bermuda or the international reinsurance market focused there, either of which could adversely impact us commercially.

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 may be subject to U.S. federal income tax on their net income, which may have a material adverse effect on our operating results and your investment.

Aspen Holdings and its non-U.S. subsidiaries (other than AUL and Aspen UK) intend to manage their business so that they are not treated as engaged in a trade or business within the United States and thus not subject to U.S. federal income tax on their net income. 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 one or more of these companies is engaged in a trade or business in the United States. If any of these companies is considered to be engaged in a trade or business in the United States during a taxable year, it generally will be subject to U.S. federal income tax (including an additional branch profits tax) on its net income that is treated as effectively connected with the conduct of a U.S. trade or business for such year (except to the extent an applicable income tax treaty provides otherwise), in which case its operating results could be materially adversely affected.

Our non-U.K. companies may be subject to U.K. tax, which may have a material adverse effect on our operating results and your investment.

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 APJ Jersey which, although not incorporated in the U.K., is treated as tax 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, including through compliance with established tax operating guidelines, where applicable.

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, His 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 comprehensive 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 tax treaty between the U.K. and the jurisdiction in which they are a resident may nonetheless also be exposed to corporation tax in the U.K. 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 this charge to corporation tax in the U.K.

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 or HMRC’s practice and interpretation of U.K. tax law could materially adversely affect the operations of the U.K. resident companies. The U.K. corporation tax rate is currently 25%.

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.

The implementation of recommendations arising from the action points comprising BEPS has resulted in significant changes to local tax legislation and international tax treaties over recent years. For example, BEPS has resulted in jurisdictions implementing laws which (among other things): limit deductibility of interest payments; expand the scope of permanent establishments (thereby extending the scope of jurisdictions’ taxing rights); counteract hybrid mismatch arrangements and strengthen ‘Controlled Foreign Company’ rules. U.K. domestic legislation introduced in relation to hybrid

mismatches came into effect on January 1, 2017, and legislation to restrict tax deductions for interest expenses of large groups was brought into effect from April 1, 2017.

In addition, domestic law implementation of BEPS has resulted in taxpayers and/or their advisers and intermediaries being required to engage in discussions and disclose information to tax authorities regarding their tax affairs and transactions. Accordingly, Aspen Group may be required to enter into discussions with and provide information to tax authorities which may require the disclosure of transactions and operations of the Aspen Group, in addition to obligations under the related information reporting measures (including E.U. and other mandatory disclosure regimes, such as Council Directive 2014/107/EU of 9 December 2014 and Council Directive 2018/822 EU of 25 May 2018) (commonly known as “DAC 6”) and the U.K. domestic MDR (referred to below)).

The impact of these changes to U.K. tax law in response to the BEPS Reports is still playing out, and it is expected that further reforms will be made in response to the proposed extensions of BEPS (i.e., BEPS: Pillar One and Two, commonly known as “BEPS 2.0”) (discussed in further detail in “Risk Factors — Risks Related to Taxation — The OECD’s initiative to limit harmful tax competition may result in higher taxation and increased complexity, burden and cost of compliance” below), BEPS and BEPS 2.0 may (depending on their final implementation) have a material adverse effect on our intra-group arrangements, our operations, and our results. Relevant to our U.K. Subsidiaries and APJ Jersey, on 23 March 2023 the United Kingdom published draft legislation in the Finance Bill (No. 2) 2023, which implements one aspect of Pillar Two (the income inclusion rule imposing top-up tax on a parent entity in respect of the low-taxed income of a constituent entity) via a “multinational top-up tax”. The draft legislation remains subject to further amendments by Parliament and will only enter into force after it receives Royal Assent. As currently drafted, the U.K.’s multinational top-up tax will apply to multinational enterprises for accounting periods beginning on or after 31 December 2023.

At the end of the Brexit transition period on December 31, 2020, obligations requiring the U.K. to implement DAC 6 fell away and temporary legislation (effective December 31, 2020) was published, narrowing the scope of the U.K.’s DAC 6 regulations. On 17 January 2023, HMRC published final regulations (to replace the U.K.’s DAC 6) which are broadly in line with the OECD’s mandatory disclosure rules (“MDR”) and which took effect from 28 March 2023. The regulations require taxpayers and intermediaries to disclose information regarding certain types of OECD Common Reporting Standard avoidant arrangements and opaque offshore structures to HMRC. Under the MDR regime as now in effect, the Company or any of its advisors or intermediaries may be required to enter into discussions with, or make certain disclosures to, HMRC regarding its arrangements and structure.

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 currently charged at a higher rate of 31%. The DPT 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 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.

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 or has been obtained, an adjustment will be required to compute U.K. taxable profits as if such an agreement were or had been 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. 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.

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

The Inflation Reduction Act of 2022 (the “IRA”) contains a number of tax-related provisions, including a 15% corporate alternative minimum tax imposed on certain corporations that meet an income-based test, as well as a 1% nondeductible excise tax on certain stock repurchases. It is unclear how these provisions of the IRA will be applied and what impact the IRA will have on our tax liability. We will continue to evaluate the IRA’s impact as further information becomes available.

It is possible that other legislation could be introduced and enacted by the current Congress or future Congresses, or that regulations or other interpretations could be issued, possibly with retroactive effect, that could have an adverse impact on us or our shareholders. These recent and potential future changes in law or interpretation could materially adversely affect our business, access to capital, financial condition and results of operations.

U.S. persons who hold 10% or more of the total voting power or value of our shares may be subject to U.S. federal income taxation on our undistributed earnings.

In general, a “10% U.S. Shareholder” (as defined below) of a non-U.S. corporation that is a controlled foreign corporation (“CFC”) at any time during a taxable year 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 “tested income” (with various adjustments) with respect to any shares that such 10% U.S. Shareholder owns in such non-U.S. corporation (directly or indirectly through certain entities) on the last day in the non-U.S. corporation’s taxable year on which it is a CFC, even if the subpart F income or tested income is not distributed. A “10% U.S. Shareholder” generally is a U.S. person that owns (directly, indirectly through non-U.S. entities or by attribution by application of the constructive ownership rules of section 958(b) of the U.S. Internal Revenue Code of 1986, as amended (the “Code”) (i.e., “constructively”)) at least 10% of the total combined voting power or value of all classes of stock of a non-U.S. corporation. “Subpart F income” of a CFC generally 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 tested income is generally any income of the CFC other than subpart F income and certain other categories of income. An entity treated as a foreign corporation for U.S. federal income tax purposes generally is considered a CFC if 10% U.S. Shareholders own (directly, indirectly through non-U.S. entities or constructively), in the aggregate, more than 50% of the total combined voting power of all classes of voting stock of that non-U.S. corporation or more than 50% of the total value of all stock of that non-U.S. corporation. However, for the purposes of taking into account insurance income, these 50% thresholds are generally reduced to 25%.

Whether Aspen Holdings is a CFC for a taxable year will depend upon facts regarding our direct and indirect shareholders, about which we have limited information. Accordingly, no assurance can be provided that Aspen Holdings will not be a CFC. Further, regardless of whether Aspen Holdings is a CFC, most or all of our non-U.S. subsidiaries are generally treated as CFCs because our U.S. subsidiaries generally are treated as constructively owning the stock of our non-U.S. subsidiaries. Accordingly, any 10% U.S. Shareholders of Aspen Holdings may be required to include in gross income for U.S. federal income tax purposes for each taxable year their pro rata shares of all or a portion of the subpart F income and tested income generated by our non-U.S. companies (with various adjustments), regardless of whether any distributions are made to them. Any such 10% U.S. Shareholders should consult their own tax advisors regarding the application of these rules to them.

U.S. persons who hold our shares may be subject to U.S. federal income taxation at ordinary income rates on their proportionate share of our related person insurance income.

In general, if a non-U.S. corporation is a “RPII CFC” (as defined below) at any time during a taxable year, a U.S. person who owns (directly or indirectly through certain entities) any shares of the non-U.S. corporation (a “U.S. RPII Shareholder”) must include in its gross income for U.S. federal income tax purposes its pro rata share of the non-U.S. corporation’s related person insurance income (“RPII”) with respect to any shares that such U.S. RPII Shareholder owns (directly or indirectly through certain entities) on the last day in the non-U.S. corporation’s taxable year, even if the RPII is not distributed. Further, a U.S. RPII Shareholder’s pro rata share of any RPII is determined as if all RPII for the taxable year were distributed proportionately only to U.S. RPII Shareholders on that date. In addition, a U.S. RPII Shareholder is required to comply with certain reporting requirements, regardless of the number of shares owned by the U.S. RPII Shareholder.

For these purposes, a “RPII CFC” generally is any non-U.S. corporation if U.S. RPII Shareholders collectively own (directly, indirectly through non-U.S. entities or constructively) 25% or more of the total combined voting power of all classes of stock of such corporation entitled to vote or 25% or more of the total value of the stock of such corporation. However, the RPII rules generally do not apply with respect to a non-U.S. corporation if either (i) at all times during its taxable year less than 20% of the total combined voting power of all classes of stock of the corporation entitled to vote and less than 20% of the total value of the corporation is owned (directly or indirectly) by persons who are (directly or indirectly) insured under any policy of insurance or reinsurance issued by the corporation or who are related persons to any such person (the “ownership exception”), or (ii) the RPII (determined on a gross basis) of the corporation for the taxable year is less than 20% of its gross insurance income for the taxable year (the “de minimis exception”).

We believe that each of our non-U.S. Operating Subsidiaries and each of Peregrine and APJ Jersey is a RPII CFC. Nonetheless, we expect that each such company will qualify for one or both of the ownership exception and the de minimis exception in the current taxable year and for the foreseeable future. However, the RPII provisions have never been interpreted by the courts, and regulations interpreting the RPII provisions exist only in proposed form. Certain recently issued proposed regulations would also expand the scope of RPII to potentially include all the insurance income any of our non-U.S. Operating Subsidiaries, Peregrine, or APJ Jersey earn from reinsuring affiliates if it is majority owned (directly, indirectly or by application of certain constructive ownership rules) by U.S. persons. It is not certain whether any of 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 U.S. 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. Further, the applicability of the ownership and de minimis exceptions and the RPII rules more generally depends upon facts regarding our direct and indirect shareholders and insureds, about which we have limited information. Accordingly, no assurances can be provided that any of our companies will satisfy either exception. Moreover, to the extent the exceptions do not apply, we may be unable to correctly determine the amount of RPII that any U.S. RPII Shareholder is required to take into account.

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, generally provides that if a U.S. person disposes of shares in a RPII CFC (determined without regard to the ownership or de minimis exceptions) that would be taxable as an insurance company under the Code if it were a U.S. corporation, 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 number 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. However, as discussed above, there is uncertainty in the interpretation of the RPII provisions and thus no assurances can be provided.

U.S. persons who hold our shares may be subject to adverse tax consequences if we are considered to be a passive foreign investment company.

If Aspen Holdings is characterized as a passive foreign investment company (“PFIC”), a U.S. person holding shares of Aspen Holdings generally would be subject to an increased tax liability at the time of the sale at a gain of, or receipt of an “excess distribution” with respect to, their shares. In addition, if Aspen Holdings is 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. Further, a distribution paid by Aspen Holdings to U.S. shareholders that is characterized as a dividend and is not characterized as an excess distribution will not be eligible for reduced rates of tax as qualified dividend income if Aspen Holdings is considered a PFIC in the taxable year in which such dividend is paid or was a PFIC in the preceding taxable year. A U.S. shareholder may also be subject to additional information reporting requirements, including the filing of an IRS Form 8621, if Aspen Holdings is a PFIC. These rules generally will apply to a U.S. person if Aspen Holdings was a PFIC at any time during the U.S. person’s holding period with respect to our shares. Different consequences may apply if the U.S. person has elected to treat Aspen Holdings as a “qualified electing fund” or if the U.S. person is a 10% U.S. Shareholder of Aspen Holdings and Aspen Holdings is a CFC.

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”). For these purposes, passive income generally includes interest, dividends, annuities and other

investment income. However, the PFIC provisions contain a look-through rule under which a non-U.S. corporation that directly or indirectly owns at least 25% of the value of the stock of another corporation generally is treated, for purposes of determining whether it is a PFIC, as if it received directly its proportionate share of the income, and held its proportionate share of the assets, of the other corporation (the “look-through rule”). In addition, pursuant to an insurance exception, (a) passive income does not include income that a qualifying insurance corporation (“QIC”) derives in the active conduct of an insurance business or income of a qualifying domestic insurance corporation (“QDIC”) (generally, a U.S. corporation with respect to which the look-through rule applies that is taxable as an insurance company and is subject to U.S. federal income tax on its net income), and (b) passive assets do not include assets of a QIC available to satisfy liabilities of the QIC related to its insurance business, if the QIC is engaged in the active conduct of an insurance business, or assets of a QDIC.

Generally, a non-U.S. corporation will be a QIC for a taxable year if it would be taxable as an insurance company if it were a U.S. corporation and its applicable insurance liabilities constitute more than 25% of its total assets for a taxable year. Further, under recently proposed regulations (the “2021 Proposed Regulations”), a QIC is engaged in the “active conduct” of an insurance business only if it satisfies either a “factual requirements test” or an “active conduct percentage test.” The factual requirements test requires that the officers and employees of the QIC carry out substantial managerial and operational activities on a regular and continuous basis with respect to its core functions and that they perform virtually all of the active decision-making functions relevant to underwriting functions. The active conduct percentage test generally requires that (i) the total costs incurred by the QIC with respect to its officers and employees for services rendered with respect to its core functions (other than investment activities) equal or exceed 50% of the total costs incurred by the QIC with respect to its officers and employees and any other person or entities for services rendered with respect to its core functions (other than investment activities) and (ii) to the extent the QIC outsources any part of its core functions to unrelated entities, officers and employees of the QIC with experience and relevant expertise must select and supervise the person that performs the outsourced functions, establish objectives for performance of the outsourced functions and prescribe rigorous guidelines relating to the outsourced functions which are routinely evaluated and updated. Under certain exceptions, however, a QIC that has no or only a nominal number of employees or that is a vehicle that has the effect of securitizing or collateralizing insurance risks underwritten by other insurance or reinsurance companies or is an insurance linked securities fund that invests in securitization vehicles generally is deemed not engaged in the active conduct of an insurance business. The officers and employees of certain related entities generally may be taken into account for these purposes, provided that the QIC exercises regular oversight and supervision over the services performed by the related entity’s officers and employees. The 2021 Proposed Regulations will not be effective unless and until adopted in final form, but taxpayers may rely on them for taxable years beginning after December 31, 2017 if they are consistently followed.

We believe that, based on the implementation of our current business plan and the application of the insurance exception, our non-U.S. insurance subsidiaries should be considered QICs engaged in the active conduct of an insurance business under one or both of the “factual requirements test” or the “active conduct percentage test,” our U.S. insurance subsidiaries should be considered QDICs and none of the income or assets of such insurance subsidiaries should be treated as passive. As a result, based on the application of the look-through rule, we believe that Aspen Holdings should not be characterized as a PFIC for the current year or the foreseeable future. However, because of legal uncertainties with respect to the interpretation of the PFIC rules and whether the 2021 Proposed Regulations will be adopted as final regulations in their current form, and factual uncertainties with respect to our planned operations, there is a risk that Aspen Holdings will be characterized as a PFIC in one or more years. If Aspen Holdings is 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 on an investment in our shares.

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

A U.S. tax-exempt organization generally will recognize unrelated business taxable income if the organization is required to include in gross income any of our insurance income under the CFC rules described above (including the RPII provisions). U.S. tax-exempt organizations are advised to consult their own tax advisors regarding the applicability of these rules to their ownership of our shares.

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 E.U. 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 E.U. 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.

The OECD's initiative to limit harmful tax competition may result in higher taxation and increased complexity, burden and cost of compliance.

On June 21, 2016, the E.U.'s ministers of Finance and Economic Affairs unanimously approved the Anti-Tax Avoidance Directive to harmonize potential BEPS changes in the E.U. These measures are largely directed at counteracting the effects of tax havens and preferential tax regimes in countries around the world. We expect that countries may change their tax laws in response to this project, and several countries have already changed or proposed changes to their tax laws. Council Directive (EU) 2017/952 of 29 May 2017 amending Council Directive (EU) 2016/1164 (commonly known as "ATAD II") was introduced (with effect from January 1, 2022) to prevent hybrid mismatches giving rise to a double deduction or to a deduction without taxation in different tax jurisdictions. In certain cases, taxpayers may be denied the right to recognize tax deductible costs on payments subject to a double deduction. On December 22, 2021, the E.U. published the draft Anti-Tax Avoidance Directive III ("ATAD III") designed to impose new minimum substance rules to prevent the misuse of shell entities for improper tax purposes. ATAD III proposes to introduce reporting requirements for certain E.U. tax resident companies with mobile and/or passive income (such as interest, dividends and royalty income) that have inadequate economic substance (as prescribed under ATAD III). If an entity fails to meet these substance requirements, it will be denied benefits under tax treaties and various E.U. directives. The European Parliament approved the European Commission's draft directive on ATAD III, which will now go before the Council of the EU prior to being implemented by member states of the EU. As currently drafted, E.U. member states will need to implement the proposed measures, once adopted, by June 30, 2023 (with effect from 1 January 2024). ATAD III is currently in draft form and is subject to public consultation. The details of these rules are therefore subject to change.

In addition, the OECD is continuing to work on a two-pillar initiative, "BEPS 2.0," which is aimed at (1) shifting taxing rights to the jurisdiction of the consumer ("Pillar One") and (2) ensuring all companies pay a global minimum tax ("Pillar Two"). Pillar One will, broadly, re-allocate taxing rights over 25% of the residual profits of multinational enterprises (MNEs) with global turnover in excess of 20 billion euros (excluding extractives and regulated financial services) to the jurisdictions where the customers and users of those MNEs are located. Pillar Two will, broadly, consist of two interlocking domestic rules (together the Global anti-Base Erosion Rules (the "GloBE Rules")): (i) an Income Inclusion Rule ("IIR"), which imposes top-up tax on a parent entity in respect of the low-taxed income of a constituent entity; and (ii) an Undertaxed Payment Rule, which denies deductions or requires an equivalent adjustment to the extent the low-taxed income of a constituent entity is not subject to tax under an IIR. There will also be a treaty-based Subject To Tax Rule that allows source jurisdictions to impose limited source taxation on certain related party payments subject to tax below a minimum rate.

For countries other than the U.S., the OECD recommended model GloBE Rules for Pillar Two in late 2021. The OECD also released further guidance on the model GloBE Rules during 2022 and is expected to continue to release guidance on a rolling basis throughout 2023. This includes the release in early February 2023 of further technical guidance which comments in particular on the interaction between the model GloBE Rules and current U.S. tax law. It was indicated by the OECD in May 2022 that the Two-Pillar Solution will not come into force until 2024 at the earliest. Relevant to our U.K. Subsidiaries and APJ Jersey, as U.K. tax resident entities, on March 23, 2023 the United Kingdom published draft

legislation in the Finance Bill (No. 2) 2023 which implements the IIR via a “multinational top-up tax”. The draft legislation remains subject to further amendment by Parliament and will only enter into force after it receives Royal Assent. As currently drafted, the U.K.’s multinational top-up tax will apply to multinational enterprises for accounting periods beginning on or after 31 December 2023. The Council Directive (EU) 2022/2523, adopted on 15 December 2022, requires that EU Member States implement the Pillar Two rules into domestic law by 31 December 2023. Additionally, in the 2023 Budget, the Bermuda government announced the formation of an International Tax Working Group consisting of specialists in international tax matters and representatives of various bodies whose members may be directly impacted by such to examine how Bermuda can appropriately implement the Global Minimum Tax initiative. The Working Group is scheduled to report its findings and provide recommendations to the Bermuda Government in July 2023 and thereafter the Tax Reform Commission will further consider the changes required to comply with the Global Minimum Tax reforms. The timing, scope and implementation of these provisions into domestic law in the U.K., Bermuda and other countries remains subject to significant uncertainty. Depending on how the model GloBE Rules are implemented or clarified by additional commentary or guidance in the future, they may result in additional tax being payable by the Aspen Group. Changes to tax laws and additional reporting requirements could increase the complexity, burden and cost of doing business with our Bermuda companies and/or subject our Bermuda companies to increased tax and compliance burdens.

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 in Bermuda as a holding company operating under the laws of 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).

Since February 2019, the Company has been a wholly owned subsidiary of Highlands Bermuda Holdco, Ltd. (“Parent”), which holds all of the Company’s ordinary shares. 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”). The Company’s preference shares and depositary shares are listed on the New York Stock Exchange (“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 principal business is marketing and underwriting specialty insurance and reinsurance on a global basis. Our business is comprised of: (i) underwriting operations, which includes our risk-bearing insurance and reinsurance operations; (ii) investing activities, which primarily support our underwriting operations; and (iii) our ACM operations, which earn 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. ACM forms part of the Aspen Capital Partners platform, in recognition of the synergies between ACM and the Company’s Outwards Reinsurance teams.

We manage our underwriting operations as two distinct business segments, Insurance (“Aspen Insurance”) and 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 offers a variety of reinsurance and retrocession products, including, but 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 (such as quota share) and non-proportional (such as excess of loss) basis.

Our reinsurance business is sourced principally through brokers and reinsurance intermediaries, with whom we aim to maintain strong relationships, having become a valued risk management partner to the leading insurers with whom we do business. We write property catastrophe, property, casualty and specialty reinsurance business through Aspen Bermuda and its branches in Singapore and Switzerland, Aspen Lloyd’s and AAIC. We write property catastrophe, property non-catastrophe, casualty and specialty reinsurance through Aspen Lloyd’s. We also access Lloyd’s Brussels through Lloyd’s Insurance Company, S.A. stamp 5383.

Aspen Insurance

Aspen Insurance offers a variety of insurance products, including, but not limited to: (i) first party insurance, (ii) specialty insurance, (iii) casualty insurance, and (iv) and financial and professional lines insurance. In our insurance segment, these products are written in the London Market primarily by Aspen UK and Aspen Lloyd’s via the Lloyd’s platform and, in the

United States, by Aspen American Insurance Company and Aspen Specialty Insurance Company (on an admitted and excess and surplus line, basis, respectively). We also write casualty and financial and professional lines business through Aspen Bermuda Limited. Although our products are underwritten according to the guidelines associated with each local entity, our insurance business is managed globally with individual product lines grouped and managed into four select portfolios. This allows for consistency of underwriting appetite, risk selection and application of underwriting guidelines across all our jurisdictions, as well as providing opportunities for integrated marketing and relationship management efforts. In several of our product lines, business consists of a combination of Open Market and Delegated Underwriting Authorities or Programs, and is primarily sourced through long-standing trading relationships with specialist brokers.

Investments

Our investment operations seek to deliver 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. Income from our investment operations is included in corporate and other income and expense.

Aspen Capital Markets

We participate in the alternative reinsurance market through ACM, which focuses on developing alternative reinsurance structures and products to leverage the Company's existing underwriting franchise and increase its operational flexibility in the capital markets. ACM provides investors direct access to 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 ILS funds and other offerings. It operates primarily two distinct strategies, namely, building insurance risk portfolios tailored to investor objectives through funds managed by Aspen Capital Management Ltd. ("ACML"), a Bermuda domiciled insurance manager and agent registered with the BMA, and strategically structuring and placing defined Aspen portfolios aligned with capital markets investors through the use of sidecars, including Peregrine Reinsurance Ltd. ("Peregrine"), a special purpose insurer. For more information on Peregrine, see "Regulatory Matters - Bermuda - Peregrine" below.

Aspen recognized the synergies between ACM and its Outwards Reinsurance teams – combining the two into Aspen Capital Partners. This move allows us to further enable our trading partners to access the full breadth of Aspen's capabilities, including risk sourcing, underwriting, modelling, actuarial and claims.

Income from ACM's activities is primarily allocated to the line of business being ceded within Aspen's current two segments, Aspen Insurance and Aspen Re, and serves to reduce acquisition expenses for that business and applicable operating entity. While ACM has historically focused on property catastrophe business, in recent years, it has expanded to provide capacity for property insurance and reinsurance, specialty reinsurance and casualty insurance and reinsurance.

Business Segments

We have determined our reportable segments, Aspen Insurance ("Insurance") and Aspen Re ("Reinsurance"), 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 income or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, acquisition costs and general and administrative expenses. Underwriting income 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, acquisition costs and general and administrative expenses by net earned premiums. 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.

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, 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 business segment separately from the results of our investment portfolio. Segment profit or loss for each of our business segments is measured by underwriting income or loss.

The table below sets forth the gross written premiums by business segment for the twelve months ended December 31, 2022, 2021 and 2020:

Business Segment	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Reinsurance	\$ 1,807.0	41.6 %	\$ 1,597.0	40.5 %	\$ 1,656.4	44.8 %
Insurance	2,531.7	58.4	2,341.4	59.5	2,042.1	55.2
Total	\$ 4,338.7	100.0 %	\$ 3,938.4	100.0 %	\$ 3,698.5	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, 2022, 2021 and 2020:

Reinsurance	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Australia/Asia	\$ 175.0	9.7 %	\$ 185.8	11.6 %	\$ 180.0	10.9 %
Europe	109.0	6.0	79.0	4.9	73.5	4.4
United Kingdom	13.9	0.8	18.6	1.2	4.9	0.3
United States & Canada ⁽¹⁾	960.3	53.1	724.0	45.3	871.0	52.6
Worldwide excluding United States ⁽²⁾	24.2	1.3	28.8	1.8	21.7	1.3
Worldwide including United States ⁽³⁾	464.5	25.7	499.0	31.3	425.0	25.7
Other ⁽⁴⁾	60.1	3.4	61.8	3.9	80.3	4.8
Total	\$ 1,807.0	100.0 %	\$ 1,597.0	100.0 %	\$ 1,656.4	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. In December 2020, we sold our interest in the strategic partnership with CGB Diversified Services, Inc. (“CGB DS”). 2020 includes gross written premium of \$334.8 million related to 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 global risks with the specific exclusion of the United States.
- (3) “Worldwide including the United States” consists of individual policies that insure global risks with the specific inclusion of the United States.
- (4) “Other” comprises individual policies that insure risk in other countries including, but not limited to, the Caribbean, South America and Middle East.

Aspen Re's gross written premiums by principal line of business were as follows for the twelve months ended December 31, 2022, 2021 and 2020:

	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
Reinsurance						
	(\$ in millions, except for percentages)					
Property catastrophe reinsurance	\$ 354.9	19.7 %	\$ 376.5	23.6 %	\$ 311.8	18.8 %
Other property reinsurance	428.8	23.7	473.6	29.6	399.6	24.1
Casualty reinsurance	596.4	33.0	445.5	27.9	390.5	23.6
Specialty reinsurance ⁽¹⁾	426.9	23.6	301.4	18.9	554.5	33.5
Total	\$ 1,807.0	100.0 %	\$ 1,597.0	100.0 %	\$ 1,656.4	100.0 %

(1) 2020 includes gross written premium of \$334.8 million related to CGB DS.

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.

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 agriculture reinsurance, mortgage reinsurance, marine, aviation, terrorism, engineering, cyber and other specialty lines. Our specialty agricultural reinsurance business covered crop and multi-peril business. Other specialty lines include reinsurance treaties and some insurance policies covering policyholders' interests in marine, energy, aviation liability, space, bloodstock, contingency, terrorism, engineering, nuclear and personal accident. Aspen ceased writing new and renewal reinsurance for the aviation, space and bloodstock business lines from October 2022.

In 2020 and prior, specialty reinsurance included 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. In September 2020, we received notice from CGB DS that its controlling parent entered into a definitive agreement for the sale of CGB DS to a third party. The sale of CGB DS triggered an option for CGB DS to purchase Aspen's 23.2% ownership interest in Crop Re. CGB DS exercised this right and purchased Aspen's interest in Crop Re on December 14, 2020 (the "CGB Sale"). The CGB Sale resulted in a material diminution of our U.S. agricultural business in 2021, although we continue to write a small amount of admitted primary U.S. crop insurance through AAIC.

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 excess of loss basis, specifically covering the peril of terrorism. These contracts typically exclude coverage for nuclear, biological, chemical or radiological attack, though we have written a small number of contracts that do not exclude coverage for 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, 2022, 2021 and 2020:

Insurance	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
Australia/Asia	\$ 82.5	3.3 %	\$ 90.0	3.8 %	\$ 71.2	3.5 %
Europe	85.5	3.4	61.6	2.6	59.5	2.9
United Kingdom	471.9	18.6	374.6	16.0	233.1	11.4
United States & Canada ⁽¹⁾	1,755.4	69.3	1,577.9	67.4	1,371.9	67.2
Worldwide excluding United States ⁽²⁾	—	—	2.7	0.1	1.4	0.1
Worldwide including United States ⁽³⁾	77.2	3.1	93.1	4.0	208.4	10.2
Other ⁽⁴⁾	59.2	2.3	141.5	6.1	96.6	4.7
Total	\$ 2,531.7	100.0 %	\$ 2,341.4	100.0 %	\$ 2,042.1	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 global risks with the specific exclusion of the United States.
- (3) “Worldwide including the United States” consists of individual policies that insure global risks with the specific inclusion of the United States.
- (4) “Other” comprises individual policies that insure risk in other countries including, but not limited to, the Caribbean, South America and Middle East.

Our gross written premiums by our principal line of business within our insurance segment were as follows for the twelve months ended December 31, 2022, 2021 and 2020:

Insurance	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
(\$ in millions, except for percentages)						
First party and specialty insurance	\$ 741.9	29.3 %	\$ 807.9	34.5 %	\$ 846.0	41.4 %
Casualty and liability insurance	678.6	26.8	615.4	26.3	513.1	25.1
Financial and professional lines insurance	1,081.2	42.7	907.6	38.8	683.0	33.4
Carbon Syndicate ⁽¹⁾	30.0	1.2	10.5	0.4	—	—
Total	\$ 2,531.7	100.0 %	\$ 2,341.4	100.0 %	\$ 2,042.1	100.0 %

⁽¹⁾ Relates to gross written premium written by Aspen Underwriting Limited via Carbon Syndicate 4747.

First Party and Specialty Insurance: Our first party and specialty insurance line consists of U.S. and U.K. commercial property, specie, inland and ocean marine, marine and energy liability, onshore energy physical damage, offshore energy physical damage, credit and political risks, crisis management, accident and health and surety risks 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.

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.

Marine and Energy Liability: In February 2020, we made the decision to cease writing marine and energy liability business and the business was put into runoff. Prior to that, the marine and energy liability business was based in the U.K. and included marine liability cover mainly related to the liabilities of ship-owners and port operators, including reinsurance of Protection and Indemnity Clubs. It also provided 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. This class also included commercial construction liability for U.S. companies in the oil and gas sector, which is now being written under our global excess casualty line.

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.

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. This book is written on a global basis, although capacity is selectively deployed. In December 2020, we sold the renewal rights to our U.S. food and beverage product recall business to a third party.

Surety Risks: In July 2020, we sold our renewal rights to our surety insurance book of business to a third party and executed a loss portfolio transfer transaction for the transfer of prior-year liabilities. Pursuant to the terms of the sale transaction, Aspen UK continues to underwrite only a small portion of surety business on a fronted basis to the purchaser in the transaction, which is subject to a 100% quota share reinsurance agreement.

Casualty and Liability Insurance: Our casualty and liability line consists of commercial liability, U.S. primary casualty, excess casualty, environmental liability and railroad liability, written on a primary, excess, quota share, program and facultative basis.

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.

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.

Financial and Professional Lines Insurance: Our financial and professional lines consists of financial and corporate risks, professional liability, management liability, and cyber liability, 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")), the United Kingdom 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 may also extend coverage for cyber liability and data protection insurance. The cyber liability and data protection insurance covers firms for first party costs and third-party liabilities associated with cybersecurity breach and 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.

Cyber Liability: This account is written globally and consists of our privacy and network security liability (cyber liability) products as well as technology liability. Our privacy and network security liability products provide first party costs and third-party liabilities associated with privacy and cybersecurity breaches. Our technology liability product 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.

On a significant portion of our insurance contracts across all our sub-segments, 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).

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:

- strive to build a diverse portfolio of risk that generates attractive returns by deploying capital in a targeted and efficient manner to deliver enhanced underwriting profitability;

- operate within agreed boundaries as defined by the business plan 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 Underwriting Committee or relevant entity executive or board of directors 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.

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 ACM 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 January 10, 2022, the Aspen Group entered into an Amended and Restated Reinsurance Agreement with a subsidiary of Enstar Group Limited (together, "Enstar") (the "LPT"), which amended and restated an adverse development cover reinsurance agreement, dated as of March 2, 2020, previously entered into between Enstar and the Aspen Group (the "Original Agreement"). Under the terms of the LPT, Enstar reinsured net losses with a date of loss incurred on or prior to December 31, 2019 on Aspen's diverse mix of property, liability and specialty lines across the U.S., U.K. and other jurisdictions (the "Subject Business") having net loss reserves of \$3.12 billion as of September 30, 2021. The LPT provides for a limit of \$3.57 billion in consideration for a premium of \$3.16 billion. The amount of net loss reserves ceded, as well as the premium and limit amounts provided under the Agreement, have been adjusted for claims paid between October 1, 2021 and the closing date of the transaction on May 20, 2022. The premium includes \$770.0 million of premium previously paid with respect to reserves ceded under the Original Agreement, which will continue to be held in trust accounts to secure Enstar's obligations under the LPT. The incremental new premium will initially be held in funds withheld accounts in their original currencies maintained by Aspen but will be released to the trust accounts maintained by Enstar no later than September 30, 2025. The funds withheld by Aspen

will be credited with interest at an annual rate of 1.75% plus, for periods after October 1, 2022, an additional amount equal to 50% of the amount by which the total return on the investments and cash and cash equivalents of the Company and its subsidiaries exceeds 1.75%. Under the LPT, the Enstar subsidiary has assumed claims control of the Subject Business, pursuant to the provisions of an administrative services agreement subsequently entered into between the parties on June 30, 2022.

The Agreement includes customary representations and warranties, indemnification obligations, covenants and termination rights of the parties. Following receipt of applicable regulatory approvals, the transaction closed on May 20, 2022.

Risk Management

Aspen has a comprehensive risk management framework that defines the corporate risk appetite, risk strategy and the policies in place to monitor, manage and mitigate the risk inherent in our business. Our risk management framework covers all risks in our risk universe, on a current and forward-looking basis, and is implemented in a consistent manner across the Aspen Group. It is the basis through which we protect our franchise value and seek to enable sustained profitable growth. Below is a summary of our current corporate governance bodies 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 Risk Committee of the Board also receives reports at each scheduled meeting 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 various standing committees of the Board (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, Audit, Investment and Conflicts Committees. The Audit and Conflicts Committees are comprised entirely of independent directors and all Board Committees are structured to ensure appropriate and objective challenge of, and discussion with, management. The chairs of the Board Committees report regularly to the Board on the committees' discussions, and in any event at each of the regular meetings of the Board. In addition, the Board Committees may facilitate informational calls with management from time to time where required and in accordance with the Company's operating guidelines.

Risk Committee: The Risk Committee assists the Board in its oversight of the framework that governs risk management and solvency assessment practices group-wide as articulated in the Board approved Group Risk Policy. This specifically includes oversight of processes undertaken by management to identify, evaluate and mitigate the material risks to the Group's strategic objectives, as well as monitoring adherence to the Board approved Risk Appetite Framework, solvency indicators, risk tolerance criteria, and key risk limits. The matters considered by the Risk Committee include cyber security trends and events as well as data privacy matters.

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, relating to the accounting and financial reporting process of the Company and audits of the Company's financial statements, and oversight of both internal and external auditors. In addition, the Audit Committee oversees the Company's compliance with applicable laws and regulations. The members of the Audit Committee regularly meet with management, the Group Head of Internal Audit and the Company's independent, registered public accounting firm to review matters relating to the quality of financial reporting and internal accounting controls, including the nature, extent and results of their audit.

Conflicts Committee: The Conflicts Committee reviews certain material transactions between Aspen Holdings and/or its subsidiaries and Apollo or its non-Aspen affiliates that may present a conflict of interest.

Investment Committee - The Investment Committee supports the Board in its oversight responsibilities by reviewing and monitoring the management and performance of the investment function of the Aspen Group, including the review of the investment strategy and annual investment plan and the ongoing monitoring of the Aspen Group's investment managers, including the governance and control framework in place in connection therewith.

Management Committees: The Group Chief Executive Officer maintains an executive committee (the “Group Executive Committee”), which is the primary executive committee of the Company. It is comprised of global heads of key functions and other key business leads and is responsible for advising the Group Chief Executive Officer and assisting in the execution of his responsibilities to the Board, including with respect to matters relating to the overall strategy and conduct of the Aspen Group’s business.

There are various standing committees (the “Executive Management Committees”) of the Group Executive Committee, which have oversight of certain, business, operational and risk management processes and support the Group Executive Committee in the achievement of its objectives. Membership of the Executive Management Committees includes members of the Group Executive Committee, and the structure of the Group Executive Committee contemplates appropriate reporting and feedback from the Executive Management Committees. As of the date of this report, these included:

Underwriting Committee - The primary purpose of the Underwriting Committee is to assist the Group Executive Committee through oversight of the design, implementation and operation of the strategic direction of the underwriting function of the Aspen Group, including the review and management of overall underwriting risk and appetite across the underwriting segments and all underwriting platforms.

Risk Management Committee - The primary purpose of the Risk Management Committee is to assist the Group Executive Committee through oversight of the internal control and risk management framework of the Aspen Group. In particular, the Risk Management Committee has specific responsibilities in relation to the review of the internal model, monitoring of solvency, capital and liquidity considerations and risk limits for accumulating underwriting and investment exposures.

Claims Committee - The primary purpose of the Claims Committee is to support the Group Executive Committee in its oversight of the strategy, transformation and management of the global claims function of the Aspen Group, across both Aspen Insurance and Aspen Re, including the monitoring of adherence to claims management policies, reporting procedures and standards and the development of an annual strategic plan for the claims function.

Operating Committee - The primary purpose of the Operating Committee is to assist the Group Executive Committee through oversight of the operational activities of the Aspen Group, including both in-house and outsourced activities, and the interaction of the Operations function with other business function of the Company, including the oversight of the operational risks associated with such functions, to ensure that they are strategically aligned with each other in order to provide coordinated, efficient and cost-effective operational support to the execution of the Aspen Group’s strategic objectives.

Change Board - The primary purpose of the Change Board is to assist the Group Executive Committee through oversight of the definition, prioritization and initiation of change projects in connection with the change program of Aspen Group and as part of the overall corporate strategy.

Marketing, Communications and Sustainability Committee - The primary purpose of the Marketing, Communications & Sustainability Committee is to oversee the design, implementation and operation of the Aspen Group’s marketing, communications and sustainability strategies. This includes the development and maintenance of the Company’s strategic innovation and cultural framework, in collaboration with other function leads of the Group Executive Committee, including monitoring the interaction of the marketing and communications function with other functions of the Aspen Group. This also includes management of environmental, social and governance (“ESG”) matters, for determination by the Group Executive Committee and ultimately by the Board. With respect to ESG governance, management regularly reviews its operating processes and structure to ensure appropriate, robust and effective oversight of ESG matters.

Asset and Liability Management Committee - The Asset and Liability Management Committee has oversight of the operation of the investment portfolio of the Aspen Group, including the development of, and monitoring the adherence to, the Aspen Group’s investment management policies, procedures and standards, development of an annual strategic plan for the investments function, in collaboration with the underwriting segments and all underwriting platforms.

Valuation Committee - The primary purpose of the Risk Management Committee is to assist the Group Executive Committee, in particular, the Group Chief Financial Officer, in its oversight of the valuation framework of the investment portfolio of the Aspen Group, including, but not limited to, hard-to-value and illiquid investments.

In addition to the Group Executive Committee, the Group Chief Executive Officer maintains a Group Disclosure Committee, which assists the Group Chief Executive Officer and the Group Chief Financial Officer, as the Company’s certifying officers, in fulfilling their duties for oversight of the accuracy and timeliness of any disclosures made by the Company to ensure that the Company meets its legal and regulatory obligations. This includes the review and approval of disclosures and reports, in accordance with its governance framework, and the maintenance and oversight of a management committee responsible for overseeing compliance with the Sarbanes-Oxley Act of 2002, as amended, to the extent applicable.

Risk Management Strategy

We operate an integrated enterprise-wide risk management strategy designed to protect shareholder value in a sustainable and efficient manner while providing a high level of policyholder protection and regulatory compliance. 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 (internal audit) (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 which translate the risk appetite into measurable criteria and provides the primary control for accumulated risk exposures;
- the cascading of risk appetite and key risk limits for material risks to each risk-assuming operating subsidiary;
- 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, and provides the foundation for decision making during the implementation of our strategy and business plans. 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 objective:* a description of earnings volatility tolerance;
- *Capital objective:* a description of the target level of risk adjusted capital; and
- *Liquidity objective:* a description of the target level of liquidity.

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. This includes the risk of material misstatement in financial reporting and non-compliance with regulatory requirements.

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.

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 distinguish between “core” and “non-core” risks. Core risks comprise those risks which are inherent in the operation and value creation strategy of our business, including insurance risks in respect of our underwriting operations and market risks in respect of our investment activity. We actively seek 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 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.

Risk Limits Frameworks. Aspen’s Risk Limit Framework translates the risk appetite objectives into measurable criteria. Limits provide primary control for Group-wide accumulated risk exposures and establishes the connections to business planning and monitoring by placing constraints on risk taking decisions.

Limits are established for the most important drivers of risk at the Group level and express the maximum level of allowable exposure per risk driver. At the highest level, risk limits are approved by the Board of Directors. Monitoring of the Group position against these limits is included in regular reporting to the Board of Directors or one or more of the Board Committees.

Natural Catastrophe Risk: The following discussion of the Company’s natural catastrophe probable maximum losses (“PMLs”) information contains forward-looking statements based upon assumptions and expectations concerning the potential effect of future events that are subject to uncertainties. See Item 3D, “Risk Factors” for further information. Any of these risk factors could result in actual losses that are materially different from the Company’s PML estimates below.

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

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

The Company has exposures in other peril zones that can potentially generate losses greater than the PML estimates below. The Company’s PMLs represent an estimate of loss for a single event for a given return period. The table below discloses the Company’s 1-in-100 and 1-in-250 year return period estimated loss for a single occurrence of a natural catastrophe event in a one-year period.

The Company’s single occurrence and worldwide estimated net PML exposures (net of retrocession and reinstatement premiums) of the major peril zones and worldwide as at January 1, 2023 were as follows:

(in US\$ millions, except parentheses)	As at January 1, 2023			
	1-in-100 year PML ⁽¹⁾	1-in-100 year PML as % of Shareholders’ Equity ⁽¹⁾	1-in-250 year PML ⁽¹⁾	1-in-250 year PML as % of Shareholders’ Equity ⁽¹⁾
Europe Windstorm	\$ 116.0	4.9 %	\$ 130.0	5.5 %
Japan All Perils	\$ 118.0	5.0 %	\$ 129.0	5.5 %
Northeast and Mid-Atlantic Windstorm	\$ 124.0	5.3 %	\$ 155.0	6.6 %
Texas and Gulf Windstorm	\$ 141.0	6.0 %	\$ 172.0	7.3 %
Florida and Southeast Windstorm	\$ 160.0	6.8 %	\$ 188.0	8.0 %
California Earthquake	\$ 176.0	7.5 %	\$ 222.0	9.4 %
Worldwide All Perils ⁽²⁾	\$ 219.0	9.3 %	\$ 294.0	12.5 %

⁽¹⁾ Based on total shareholders’ equity of \$2,358.0 million as at December 31, 2022. The estimates reflect Aspen’s view of the modelled maximum losses at the return periods shown which include input from various third party vendor models and Aspen’s proprietary adjustments to these models and planned reinsurance purchases. Catastrophe loss experience may materially differ from the modelled PMLs due to limitations in one or more of the models or uncertainties in the application of policy terms and limits.

⁽²⁾ Includes all natural catastrophe perils where Aspen has identified an appropriate stochastic model, such as hurricanes, typhoons, wildfire, earthquakes, etc., and includes a loading for non-modelled classes for our most material peril regions.

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 otherwise incurred in creating wholly-owned distribution networks. The brokers and reinsurance intermediaries typically act in the interest of insureds, 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, 2022, 2021 and 2020:

	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total
Reinsurance						
	(\$ in millions, except for percentages)					
Aon Corporation	\$ 548.2	30.3 %	\$ 465.4	29.1 %	\$ 358.0	21.6 %
Marsh & McLennan Companies, Inc.	585.8	32.4	449.8	28.2	358.7	21.7
Willis Group Holdings, Ltd.	191.2	10.6	282.7	17.7	283.4	17.1
Others ⁽¹⁾	481.8	26.7	399.1	25.0	656.3	39.6
Total	\$ 1,807.0	100.0 %	\$ 1,597.0	100.0 %	\$ 1,656.4	100.0 %

⁽¹⁾ 2020 includes gross written premium of \$334.8 million related to CGB DS.

	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021		Twelve Months Ended December 31, 2020	
	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total	Gross Written Premiums	% of Total ⁽¹⁾
Insurance						
	(\$ in millions, except for percentages)					
Aon Corporation	\$ 421.2	16.6 %	\$ 215.8	9.2 %	\$ 226.7	11.1 %
Marsh & McLennan Companies, Inc.	361.2	14.3	238.6	10.2	211.5	10.4
Ryan Specialty	235.4	9.3	214.9	9.2	151.7	7.4
Willis Group Holdings, Ltd.	154.2	6.1	94.6	4.0	103.1	5.0
Euclid	152.3	6.0	121.1	5.2	29.3	1.4
Brown & Brown Inc.	135.9	5.4	131.5	5.6	122.1	6.0
AmWINS Group Inc.	113.7	4.5	105.7	4.5	74.6	3.7
Lockton Inc.	109.8	4.3	61.2	2.6	59.3	2.9
CRC Swett	93.0	3.7	77.9	3.3	82.2	4.0
Arthur J Gallagher (UK) Limited	82.6	3.3	73.3	3.1	62.0	3.0
Business Risk Partners	38.7	1.5	29.8	1.3	26.3	1.3
All Risks Limited	26.4	1.0	—	—	14.8	0.7
Others	607.3	24.0	\$ 977.0	41.7	\$ 878.6	43.0
Total	\$ 2,531.7	100.0 %	\$ 2,341.4	100.0 %	\$ 2,042.1	100.0 %

⁽¹⁾ The prior periods are re-presented to ensure consistency and replicate the current year breakdown for the addition of new material brokers.

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 making 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 claims 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 and permitted, external auditing firms in conjunction with 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. Under the terms of the LPT with Enstar, Enstar has assumed claims control of the subject business since closing of the transaction and entrance on June 30, 2022 into an administrative services agreement (“ASA”), which sets forth the operational framework for the handling of the subject business. Claims Handling Guidelines were entered into setting out the management and oversight of the subject business. The transaction presents certain operational and reputational risks for the Company, including in respect of claims management. For a description of the risks, refer to Item 3, “Risk Factors — Risks Related to Our Business — We rely on the execution of 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” and for a description of the transaction, refer to Item 5, “Operating and Financial Review and Prospects — Operating Results — Strategic Initiatives”

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 Estimates — Reserving Approach” and, in connection with the risks associated therewith, 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.

As at December 31, 2022, we maintained an Asset and Liability Management Committee as an Executive Management Committee, which reports into the Group Executive Committee. The Chair of the Asset and Liability Management Committee also provides updates to the Group Investment Committee of the Board at its regular meetings, which in turn reports up to the

Board. The Asset and Liability Management Committee develops and oversees adherence to the Company's investment management policies, procedures and expected standards, including monitoring performance against our overall investment results and performance against our investment objectives, guidelines and key performance indicators. The Asset and Liability Management Committee supervises our investment activity, in accordance with the investment plan, which includes the investment strategy, for the Company as determined by the Board. The investment guidelines set by the Board 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. The Asset and Liability Management Committee and other members of management 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 addition, the Company maintains a Valuation Committee, which works alongside the Asset and Liability Management Committee to assess the scope and adequacy of the Company's valuation framework, particularly in respect of hard-to-value and illiquid asset classes.

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 Current Expected Credit Losses ("CECL") on 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.

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. This also includes new companies that enter the insurance and reinsurance industries. In addition, we compete with capital market participants that create alternative products, such as catastrophe bonds, that are intended to compete with traditional reinsurance products.

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. For a further discussion on the risks related to competition in our industry, please refer to Item 3D, "Risk Factors — Strategic Risks — Competition and consolidation in the (re)insurance industry could reduce our growth and profitability."

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 UK, Aspen Bermuda, and AAIC*	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 Company, Inc. ("A.M. Best")	A (Excellent) (Stable)	Aspen UK, 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.

**Note that Aspen Specialty does not maintain its own rating from S&P.*

These ratings reflect the respective opinions of S&P and A.M. Best 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 and A.M. Best, respectively. Additionally, rating organizations may change their rating methodology, which could have a material impact on our financial strength ratings.

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 and S&P 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 — There can be no assurance that we and our subsidiaries will not experience 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. Our companies have met or exceeded the solvency margins and ratios applicable to them under relevant laws and regulations as at December 31, 2022.

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 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 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 relevant or essential information for going concern or emergency situations; (ii) convening and conducting ongoing supervisory reviews and assessments of the Aspen Group’s financial situation and governance systems; (iii) assessing the Aspen Group’s compliance with the rules on solvency, risk concentration and intra-group transactions; (iv) planning and coordinating supervisory activities that are proportionate to the nature, scale and complexity of the risks inherent in the business of the Aspen Group and its members; (v) planning and coordinating supervisory colleges with other supervisory authorities that have regulatory oversight of entities within the Aspen Group; and (vi) coordinating any enforcement action that may need to be taken against the Aspen Group or any member of the Aspen Group. As the designated insurer, Aspen Bermuda is required to facilitate and maintain compliance by the Aspen Group with the Insurance Act and the Group Supervision Regime.

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, which includes the Group Bermuda Solvency Capital Requirement (“BSCR”), a risk-based capital adequacy model, and associated schedules, including, amongst others, 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 public website.

Group Minimum Solvency Margin and Group Enhanced Capital Requirements. Aspen Holdings must ensure that the Aspen 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, 2022. While an insurance group is not currently required to maintain its statutory capital and surplus at this level, the TCL serves as an early warning tool for the BMA and failure to maintain statutory capital at least equal to the TCL will result in additional reporting requirements and enhanced regulatory monitoring, as well as the submission of a remediation plan to restore capital above the TCL.

Bermuda

Aspen Bermuda is licensed as a Class 4 insurer and is subject to the Insurance Act 1978, as amended (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, 2022, 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 (“MSM”) and minimum liquidity ratio in respect of its business. The MSM is the greater of: (i) \$100,000,000; or (ii) 50% of net written premiums (being gross written premiums 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.

Any applicable insurer which at any time fails to meet the MSM requirements must, upon becoming aware of such failure, immediately notify the BMA and, within 14 days thereafter, file a written report with the BMA describing the circumstances that gave rise to the failure and setting out its plan detailing specific actions to be taken and the expected time frame in which the company intends to rectify the failure.

Any applicable insurer which at any time fails to meet the ECR applicable to it must, upon becoming aware of that failure, or of having reason to believe that such a failure has occurred, immediately notify the BMA in writing. In addition, within 14 days of such notification, the insurer must file with the BMA a written report describing the circumstances leading to the failure and a remediation plan, including specific actions to be taken to rectify the failure. Further, within 45 days of becoming aware of that failure, or of having reason to believe that such a failure has occurred, the impacted insurer must furnish the BMA with: (1) unaudited statutory economic balance sheets and unaudited interim financial statements prepared in accordance with GAAP covering such period as the BMA may require, (2) the opinion of a loss reserve specialist, where applicable, (3) a general business solvency certificate in respect of those financial statements, where applicable, (4) a capital and solvency return reflecting an ECR prepared using post-failure data, where applicable, (5) a long-term business solvency certificate in respect of those statements, where applicable and (6) the opinion of an approved actuary, where applicable. An insurer to whom this applies shall not declare or pay any dividends until the failure is rectified.

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

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

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

The BMA implemented an EBS framework which is used as the basis to determine the ECR for all commercial insurers, including Aspen Bermuda. The EBS framework applies prudential filters and other EBS valuation adjustments to an insurer’s GAAP balance sheet to produce an economic valuation of the assets and liabilities of the insurer. The Insurance (Prudential Standards) Amendment Rules 2018 provide updates to certain aspects of the EBS framework and increase the ECR over a 3-year transition period for general business and a 10-year transition period for long-term business.

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, enhanced capital requirements or liquidity ratio, and an insurer which fails to meet its relevant margins 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 of payment. 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 unsecured 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 Companies Act 1981, as amended (the "Companies Act"), which, amongst other matters, regulates 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.

Fit and Proper Controllers

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

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

Where the shares of a registered insurer, or the shares of its parent company, are traded on a recognized stock exchange (as is the case for Aspen Bermuda and Peregrine), and a person becomes, or ceases to be, a 10%, 20%, 33%, or 50% shareholder controller of the insurer, that shareholder shall, within 45 days, notify the BMA in writing that such shareholder has become, or as a result of a disposition ceased to be, a shareholder controller of any such category. Accordingly, Aspen Bermuda and Peregrine must notify the BMA in writing if any person becomes, or ceases to be, a 10%, 20%, 33%, or 50% shareholder controller within 45 days of the acquisition or disposition.

Material Change

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

Similarly, each designated insurer is required to give notice to the BMA of any material change in respect of the insurance group of which it is a member. This obligation will apply to Aspen Bermuda, as the designated insurer of the Aspen Group, for which the BMA acts as group supervisor.

Peregrine

Special Purpose Insurers and Segregated Account Companies. Peregrine is registered as a special purpose insurer ("SPI") under the Insurance Act and licensed to carry on special purpose business. Special purpose business is defined under the Insurance Act as insurance business under which an insurer fully collateralizes its liabilities to the persons insured, in the forms contemplated by the Insurance Act.

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 is also registered as segregated accounts company under the Segregated Accounts Companies Act 2000, as amended. As a segregated accounts company, Peregrine is 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, the Company and certain of our Bermuda-domiciled subsidiaries 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 provides that a registered entity other than an entity which is resident for tax purposes in certain jurisdictions outside Bermuda (“non-resident entity”) that carries on as a business any one or more of the “relevant activities” referred to in the ESA must comply with economic substance requirements. The list of “relevant activities” includes carrying on any one or more of the following activities: banking, insurance, fund management, financing, leasing, headquarters, shipping, distribution and service center, intellectual property and holding entities. Under the ESA, if an entity is engaged in one or more “relevant activities”, it is required to maintain a substantial economic presence in Bermuda and to comply with the economic substance requirements set forth in the ESA. An entity will comply with those economic substance requirements if it: (a) is managed and directed in Bermuda; (b) undertakes “core income generating activities” (as may be prescribed under the ESA) in Bermuda in respect of the relevant activity; (c) maintains adequate physical presence in Bermuda; (d) has adequate senior executives, employees or other persons in Bermuda with suitable qualifications; and (e) incurs adequate operating expenditure in Bermuda in relation to the relevant activity undertaken by it.

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. Companies that are licensed to and carry on insurance as a relevant activity are generally considered to operate in Bermuda with adequate substance, with respect to their insurance business, if they comply with the existing provisions of (a) the Companies Act relating to corporate governance; and (b) the Insurance Act, that are applicable to the economic substance requirements, and the Registrar will have regard to such companies’ compliance with the Insurance Act (in addition to compliance with the Companies Act) in his assessment of compliance with the economic substance requirements. For those Aspen entities subject to the ESA, we expect that the filings will continue to meet the ESA requirements.

Amendments to insurance code of conduct

In August 2022, the BMA published various revisions to the Insurance Code of Conduct (the “Code”), effective September 1, 2022. Aspen Group and Aspen Bermuda are required to be compliant with the bulk of the amended Code by September 1, 2023. These revisions are intended to ensure that the Code remains aligned with international standards and able to address emerging issues. Overall, the amendments aim to improve and enhance the Code and its application, while at the same time, incorporating various housekeeping changes intended to simplify the document.

The BMA will continue to assess an insurer’s compliance with the Code based on the nature, scale and complexity of the insurer’s operations. The BMA does not prescribe the exact manner in which regulated insurers can demonstrate compliance with the Code and expects individual insurers to use their best judgment when determining what is proportional to their individual circumstances.

The most substantive changes to the Code include the following:

- i. Confirmation that section 1 (Introduction) of the Code includes “Collateralized Insurer” and “Class Innovative Insurer General Business” in the definition of limited purpose insurer;
- ii. Expansion of section 4 (Corporate Governance) to clarify that an insurer’s Board of Directors must include an appropriate number of independent directors without executive responsibility. In this regard, the Code now includes definitions of ‘independent non-executive director’ (that is to say, an independent director with no past ties to the company) and ‘non-executive director’ (which includes board members or senior executives of the parent company or the parent company’s subsidiaries, but not executives of the insurer or its subsidiaries). Pursuant to these changes, an insurer that is a subsidiary of another Bermuda regulated entity and/or Bermuda registered insurance group or that is a subsidiary of an entity which is not a Bermuda registered entity or group but is subject to prudential regulation in another country, the Board must have an appropriate number of non-executive directors. A Board of an insurer that is registered in Bermuda and is a subsidiary of a parent company that is not a Bermuda registered entity and is not prudentially regulated must have an appropriate number of independent non-executive directors;

- iii. Amendment of section 4 (Corporate Governance) to require that the Board review board membership and the composition of its committees not less than every three years and upon a material change in the insurer's business activities or risk profile;
- iv. Amendment of section 4 (Corporate Governance) to require the insurer to adopt a risk culture that encourages behavior and conduct that aligns with its risk appetite and develops governance mechanisms for measuring and monitoring risk culture effectiveness, with such assessments to be conducted on a regular basis;
- v. Amendment of section 5 (Risk Management Framework) to require the insurer to demonstrate the economic impact of the risk mitigation techniques that originate from its reinsurance contracts;
- vi. Inclusion of a definition of "Environment, Social and Governance Risk" in section 5 (Risk Management Framework), to incorporate more specific climate risk requirements in the Code, bringing it in line with the BMA's 11 August 2022 guidance note setting out the BMA's minimum expectations for insurers generally regarding the management and reporting of climate risks;
- vii. Further expansion of section 5 (Risk Management Framework) to require each insurer to have a Business Continuity and Disaster Recovery plan that addresses all its key business processes and critical business functions. The effectiveness of the plan should be tested regularly and the documents constituting the plan must be available for inspection by the BMA; and
- viii. Amendment of section 7 (Outsourcing) to enhance the requirements for material outsourcing arrangements critical to the insurer's operations to ensure that the insurer's due diligence and risk processes are undertaken prior to the insurer entering into an outsourcing arrangement. The BMA also requires the insurer to carry out contingency planning in the event that the service provider is unable to provide the outsourced activity for any reason.

Privacy & Cybersecurity 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 Privacy commissioner ("Privacy Commissioner"), the hiring of the Privacy Commissioner's staff, and the general authority of the Privacy Commissioner to inform the public about PIPA. Following the Privacy Commissioner's appointment, effective January 20, 2020, the PIPA Commissioner's office has begun communications with the public and stakeholders regarding full implementation of PIPA. On October 30, 2020 the Privacy Commissioner issued guidance regarding privacy safeguarding of personal information by public companies, however, PIPA's remaining provisions have not been fully implemented and regulations under PIPA have not yet been provided. The Privacy Commissioner has recommended that organizations in Bermuda start to conduct data due-diligence across their existing business lines as a first stage towards PIPA compliance and, whilst the effective date has not yet been announced, it is currently anticipated to be announced this year and the Privacy Commissioner has recommended to the Bermuda Government that a period of 6 to 9 months between announcement and the effective date of PIPA be granted to allow adequate time to prepare.

In addition, the Insurance Amendment Act of 2020 became operative in August 2020 and requires entities regulated by the BMA to provide notice to the BMA of certain cybersecurity events. As a result, the BMA's Insurance Sector Operational Cyber Risk Management Code of Conduct ("Cyber Risk Code"), which includes a series of minimum and recommended cybersecurity standards, became effective on January 1, 2021. The Cyber Risk Code is designed to promote the stable and secure management of information technology systems of regulated entities and requires that all registrants implement their own technology risk programs, determine what their top risks are and develop an appropriate risk response. This requires all registrants to develop a cyber risk policy which is to be delivered pursuant to an operation cyber risk management program and appoint an appropriately qualified member of staff or outsourced resource to the role of Chief Information Security Officer. The role of the Chief Information Security Officer is to deliver the operational cyber risk management program. The Insurance (Group Supervision) Amendment Rules 2022, effective January 1, 2023, enhance the regime by imposing a requirement to report cyber events when an insurance group has knowledge, or reason to believe, that an event resulting in a significant adverse impact to the group's operations, policyholders or clients has occurred within, at most, 72 hours and additionally within 14 days of the notification, the group must furnish the BMA with a report setting out known particulars of the case.

In November 2021, the board of directors of Aspen Bermuda approved a cyber risk policy. The board of directors of Aspen Bermuda must review and approve such policy on at least an annual basis, and reaffirmed its approval of the cyber risk policy in November 2022. The BMA will assess a registrant's compliance with the Cyber Risk Code in a proportionate manner relative to the nature, scale and complexity of its business. While it is acknowledged that some registrants will use a third party to provide technology services and that they may outsource their IT resources (for example, to an insurance manager where applicable), when so outsourced, the overall responsibility for the outsourced functions will remain with the registrant's board

of directors. Failure to comply with the requirements of the Cyber Risk Code will be taken into account by the BMA in determining whether a registrant is conducting its business in a sound and prudent manner as prescribed by the Insurance Act and may result in the BMA exercising its powers of intervention and investigation.

Management of climate change risks

On August 11 2022, the BMA published Guidance Notes on Management of Climate Change Risks for Commercial Insurers ("Climate Guidance Notes"). The Climate Guidance Notes apply to the Aspen Group and Aspen Bermuda and outline the BMA's expectations regarding management and reporting of climate change risks. The Climate Guidance Notes focus on corporate governance and risk management practices for climate risk in the context of environmental, social and governance risks of insurance business.

Although the Climate Guidance Notes focus on how climate change impacts risks that are transferred to insurers, the BMA expects insurers to also specifically consider their own external impact on climate change as it may also revert back and affect in short, mid or long-term their own financial performance, reputation and operations and, by extension, the financial soundness of the sector as a whole.

The Climate Guidance Notes seek to take into account the diversity of such insurers in the market. While it targets minimum standards the BMA expects insurers to embed into their operations, the BMA's expectations continue to be based on the principle of proportionality. Therefore, the application to the Aspen Group and Aspen Bermuda will be dependent on the nature of our operations and the scale, complexity and risk profile of our insurance business.

U.K. and E.U. Regulation

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

Prior to the U.K.'s decision to withdraw from the E.U. customs union and single market, an insurance company with authorization to write insurance business in the U.K. could provide cross-border services in other member states of the 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. Aspen UK had notified the Financial Services Authority (the PRA/FCA's predecessor) of its intention to write insurance and reinsurance business in all other EEA member states. As a result, prior to Brexit, Aspen UK was 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 Solvency II and the Distribution Directive. Also prior to Brexit, as a general insurer, Aspen UK was also able to carry out reinsurance business on a cross-border services basis across the EEA.

Brexit Transition Update

As a result of Brexit concluding on December 31, 2020, Aspen UK lost its EEA financial services Passporting Rights. However, AMAL continues to be able to access the EEA market through 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.

In 2020, Aspen UK contacted all thirty EEA regulators where Aspen UK had written policies to advise them that Aspen UK had ceased writing insurance business in their jurisdiction, and that Aspen UK would not actively underwrite new insurance risks, renew risks, or make mid-term adjustments to existing policies in their jurisdiction. Aspen UK requested their permission to continue to collect premiums and pay claims (including those that arise in the future) without requiring local authorization.

No objection was received from twenty-six EEA regulators to Aspen UK continuing to collect premium and pay claims under temporary transitional arrangements; where such transitional arrangements are limited in time, Aspen UK is taking action so that regulated activities in respect of impacted policies are completed within the scope of such arrangements. Aspen UK had no material remaining exposures in three of the four other remaining EEA jurisdictions, with only Sweden having live policies and claims outstanding. Action (including novation) is being taken and further options evaluated to ensure that valid claims on Swedish policies can be settled. Aspen UK did not receive a response from two of the regulators, however Aspen UK does not have any live policies or claims in these jurisdictions. In 2021, Aspen UK wrote to all EEA regulators who have requested further information (e.g., run-off plans) to comply with their temporary transitional arrangements. The temporary transition

regime in the Netherlands expired on March 17, 2023; Aspen UK has taken steps to seek to ensure that all policies will have expired and claims where it is the lead insurer settled prior to March 17, 2023, and has updated the DNB as to the small number of outstanding claims where Aspen UK is a follow insurer and not a decision-making party. We have also subsequently become aware that the novation of a single coverholder-sourced risk may not have completed prior to the deadline and will take actions to address this with the DNB.

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 withdrawal from the E.U. could adversely impact our business, results of operations and financial condition”.

Solvency Requirements. Aspen UK and AMAL (by virtue of being a managing agent at Lloyd’s) are required to meet economic risk-based solvency requirements that were originally set out by the E.U. directive covering the capital adequacy, risk management and regulatory reporting for insurers (the “Solvency II Directive”). The Solvency II Directive, together with European Commission ‘delegated acts’ and guidance issued by the European Insurance and Occupational Pensions Authority (“EIOPA”), has been adopted by the PRA in the U.K. and sets out classification and eligibility requirements, including the features which capital must display in order to qualify as regulatory capital.

Despite the Brexit transitional period coming to an end, the European Union (Withdrawal) Act 2018, as amended, has transposed all applicable direct E.U. legislation into domestic U.K. law (legislation which applied directly or indirectly to the U.K. before 11:00 pm on December 31, 2020), thus ensuring the continuing application of the regulatory framework brought about by the Solvency II Directive under the U.K.’s financial services regulatory regime.

In June 2020, the U.K. government revealed plans to review the Solvency II Directive, together with the associated regulations and the European Commission delegated acts (“Solvency II Review”) to ensure that it is properly tailored to take account of the structural features of the U.K. insurance sector, with His Majesty’s Treasury (“HM Treasury”) publishing a ‘Call for Evidence’ in October 2020, outlining the motives behind the review and inviting feedback on various areas, including, amongst others, the standard formula for capital requirements, the risk margin, the matching adjustment and reporting requirements. In early July 2021, the HM Treasury published the response to the Solvency II Review along with its next steps. The response suggest that the Solvency II Directive could be enhanced by being more effective and efficient, including the removal of certain requirements. The HM Treasury report also considers that material change might create future discrepancy between EIOPA and PRA regimes. The PRA is also undertaking a review of the Solvency II Directive so that the U.K. can develop an appropriate post-Brexit replacement. On July 20, 2021, the PRA launched a quantitative impact study (“QIS”) for its review of the Solvency II Directive. The QIS, which contains both quantitative studies and qualitative questions, is focused on three main areas: a) calculation of the matching adjustment, b) risk margin, and c) transitional measures on technical provision. The scenarios tested in the QIS are designed to gather relevant data to allow the modelling of a range of potential policy options and do not represent reform proposals or decisions.

The HM Treasury published a second consultation on the Future Regulatory Framework Review in November 2021 and jointly with the PRA will evaluate the 2021 quantitative impact study outcomes, in order to comprehend which combination of improvements would best meet the U.K government’s objectives and what the total effect would be. The Future Regulatory Framework Review was established to determine how the financial services regulatory framework should adapt to the U.K.’s new position outside of the E.U. and to address how the framework is fit for the future. It looks to ensure that the government establishes a coherent, agile and internationally respected approach to financial services regulation in the U.K.

On April 28, 2022, the HM Treasury announced a third consultation period for Solvency II, which will inform the design of the final reform package. The reformed Solvency II regime will be known as “Solvency U.K.” In HM Treasury’s consultation response, published on November 17, 2022, the Government stated it will introduce a simpler, clearer and more tailored regime. Significant changes to be introduced by these reforms include the reduction in risk margin by 30% for non-life insurers and the proposal to remove branch capital requirements. This will benefit branches of foreign insurers based in the U.K. immediately upon implementation, as well as reduce barriers for foreign insurers wishing to establish a U.K. branch in the future. The U.K. Government has also decided to introduce a new mobilization scheme for insurers which would create an optional stage in a prospective insurer’s entry to the market, including adjusted entry requirements such as a lower capital floor, lower expectations for key personnel and governance structures, and exemptions from certain reporting requirements. This should help start-up firms to raise the capital they need for authorization and market entry; boost competition in the sector; and support firms to launch new innovative products. The U.K. Government has also decided to increase the thresholds for the size and complexity of insurers before Solvency II applies to £15 million in annual gross written premiums and to £50 million in gross technical provisions.

In January 2022, the U.K. Parliament, via its Industry and Regulators Committee, launched an inquiry and with it a ‘Call for Evidence’ into the U.K. insurance and reinsurance industry and, specifically, into the regulation of the London market, the U.K.’s market for commercial and wholesale specialty risks. The purpose of the inquiry was to “explore the extent to which

regulatory policy is well-designed and proportionately applied and the possibilities for optimizing policy following Brexit.” The inquiry will further consider the roles of the current regulators, such as the FCA and the Bank of England, as well as the appropriateness of regulation. Following its inquiry, the Industry and Regulators Committee wrote to the Economic Secretary to the Treasury, John Glen MP, outlining industry concerns regarding the lack of proportionality in the regulation of the London Market by the PRA and FCA, which was described as overly burdensome and demanding. The Committee explained industry concerns that an overly inflexible culture within the regulators may inhibit new forms of business within the U.K. commercial re(insurance) industry, proposing that the governments secondary objective of growth and competitiveness needs to be reinforced with clear criteria and appropriate performance measures for the regulators to report on.

On September 22, 2021, the European Commission published its proposals (2021/0295(COD)) (“EC Proposals”) for amendments to the Solvency II Directive. The EC Proposals relate to proportionality, quality of supervision, reporting, long-term guarantee measures, macro-prudential tools, sustainability risks, group and cross-border supervision. Such proposals include a new category of low risk profile reinsurers benefiting from more proportionate rules, improvement to the quality of supervision, reporting requirements for low-risk profile undertakings, and an increased percentage of the risk-adjusted credit spread. Further proposals also include giving national supervisory authorities tools to prevent the materialization of risks for financial stability in insurance markets, and changing the application of the regime to insurance holding companies and mixed financing holding companies. The EC Proposals also place an emphasis on sustainability risks, and proposes a requirement on insurers to identify material exposure to climate change risks, with EIOPA being given additional mandates in relation to sustainability risk. As a result of the EC Proposals the capital requirements may be set to change through reforms to reduce the risk margin provision that insurers must hold against certain long-term business and to lower the capital charges for equities that are treated as “long-term”. These amendments to the Solvency II Directive may have a bearing on how the PRA and the HM Treasury consider their regulatory analysis in the U.K., going forward.

The Solvency II Directive 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 the Solvency II Directive. Aspen UK has received approval from the PRA, and AMAL has received approval from Lloyd’s, to use an agreed internal model to calculate their respective SCR (the “Internal Model”). Aspen UK 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 the Solvency II Directive, and, with respect to AMAL, within the Lloyd’s regulatory framework, including the principles for doing business at Lloyd’s. If Aspen UK fails to comply with these requirements, the PRA may revoke its approval for Aspen UK to use the Internal Model. In addition, failure to adequately capture areas of risk (including as may be identified in the Own Risk and Solvency Assessment (“ORSA”) in the calculation of the SCR may result in the PRA applying a capital add-on to the SCR calculated by the Internal Model. Aspen UK must also maintain the ability to calculate its SCR using the Standard Formula as prescribed by Solvency II.

Aspen UK 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 UK or Lloyd’s with respect to AMAL, considers that there are insufficient capital resources, it can impose additional requirements in relation to the amount and quality of the resources it considers necessary. Any failure to comply with such requirements introduced by regulators can result in intervention by regulators or imposition of sanctions, which could have an adverse effect on Aspen UK and/or Aspen Lloyd’s results and financial position.

Solvency II Regime Reports and Returns. Under the Solvency II Directive regime, Aspen UK 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 UK must submit an annual 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 2021, the PRA granted Aspen UK 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 UK, 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 UK, AMAL and AUL may not pay a dividend if the payment of such dividend would result in their SCR coverage ratio falling below certain levels. In addition, any

future changes regarding regulatory requirements, including those described above, may restrict the ability of Aspen UK, AMAL and AUL to pay dividends in the future.

Brexit and the U.K. GDPR. Under the U.K. GDPR, companies not established in the U.K. but who process personal data in relation to the offering of goods or services to individuals in the U.K., or to monitor their behavior will be subject to the U.K. GDPR and will be required to appoint a data protection representative in the U.K., provided certain exceptions are not met. Otherwise, the requirements of the U.K. GDPR are virtually identical to those of the E.U. GDPR and as such, may lead to similar compliance and operational costs. For information on E.U. GDPR and U.K. GDPR, refer to Item 3, “Risk Factors — Other Operational Risks — Evolving privacy and data security regulations could expose our business to reputational harm and cause losses.”

In addition, Brexit has implications for transfers of personal data between the U.K. and the E.U. and vice versa. Transfers of personal data from the U.K. to the E.U. and vice versa are unrestricted and do not require additional safeguards since the E.U. has formally declared the U.K.’s data protection regime as “adequate” and similarly the U.K. has formally approved the adequacy of the E.U. and all 12 nations deemed adequate by the E.U. As a result, transfers of personal data from the EEA to the U.K. and vice versa, remain unrestricted and do not require any additional safeguards. The duration of the current adequacy decision will expire on June 27, 2025, at which point the European Commission can decide whether to extend the adequacy decision for a further period up to a maximum of another four years.

Risk Placement Services. In January 2021, Lloyd’s released a communication stating that its discussions with supervisors had focused on certain risk placement services for open market business which was being performed by managing agents on behalf of Lloyd’s Brussels. Lloyd’s Brussels is in an ongoing dialogue with the FSMA in its effort to overhaul its initial underwriting structures and is deploying significant efforts and investment to adjust its operating model to satisfy the Belgian authority in the post-Brexit environment. This may have an impact on the way managing agents and syndicates access and operate on the Lloyd’s platform. Lloyd’s Brussels is seeking to ensure that the claims it pays and complaints it processes preserve the objectives of policyholder protection and market discipline under the Insurance Distribution Directive. According to a statement by Lloyd’s Brussels chief executive, Amelie Breitburd, Lloyd’s Brussels is now well-positioned with a refreshed operating model to ensure that the needs of E.U. businesses are properly addressed under a new regime that is due to be enforced.

Branch Regulations

General

Aspen UK 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 and specialty reinsurance with inception dates from January 1, 2020. A branch that writes only reinsurance is not currently subject to supervision under the Insurance Supervision Act (Switzerland) by the Financial Markets Supervisory Authority (“FINMA”).

Aspen UK established a property and casualty reinsurance branch in Zurich, Switzerland in 2007. In 2010, Aspen UK established an insurance branch in Zurich, Switzerland, which was regulated by FINMA pursuant to the Insurance Supervision Act (Switzerland). In 2017, Aspen UK discontinued writing insurance business via the insurance branch in Switzerland. In 2020, Aspen UK ceased writing reinsurance via the reinsurance branch in Switzerland, however, FINMA maintains supervision over the Aspen UK branch while the business is in run off.

Singapore

In February 2021, Aspen Bermuda received approval from the Monetary Authority of Singapore (“MAS”) and established a reinsurance branch in Singapore. The activities of this branch are regulated by the MAS pursuant to The Insurance Act of Singapore. Aspen Bermuda is also regulated by the Accounting and Corporate Regulatory Authority (“ACRA”) as a foreign company in Singapore.

Aspen UK has a reinsurance branch in Singapore that is regulated by the MAS and pursuant to The Insurance Act of Singapore and by ACRA as a foreign company in Singapore. Action was taken in 2021 to transition the business currently written through our Aspen UK Singapore branch to the Aspen Bermuda branch 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. ASPL went into run-off in September 2021, with APSL currently intending ultimately to seek a deregistration in Singapore, in accordance with local regulatory requirements.

Canada

Aspen UK 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 UK 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 UK is also registered by the Australian Securities and Investments Commission as a foreign company in Australia under the Corporations Act of Australia 2001.

In 2021, the Company formed Aspen Australia Service Company Pty Limited (“AASC”), a coverholder which underwrote reinsurance business on behalf of Syndicate 4711 at Lloyd’s. As at December 31, 2021, Aspen UK’s Australia branch ceased underwriting new or renewal business and the Company intended for the Aspen UK Australia branch to go into run-off in accordance with APRA regulation. Subsequently, in August 2022, the Company decided to cease writing new or renewal business in AASC effective as at October 31, 2022. AASC’s office in Australia will be closing as of April 1, 2023 and the Company intends ultimately to dissolve AASC in accordance with applicable law and regulation.

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

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

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 its own bylaws and regulations, including requirements made under those bylaws 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 by Lloyd’s.

Each member of Lloyd’s is required to contribute a percentage of that member’s underwriting capacity for the relevant year of account to the Lloyd’s central fund (the “Central Fund”). If a member of Lloyd’s is unable to pay its debts to policyholders, such debts may be payable by the Central Fund, which in many respects acts as an equivalent to a state guaranty fund in the U.S. If Lloyd’s determines that the Central Fund needs to be increased, it has the power to assess premium levies on current Lloyd’s members. The Council of Lloyd’s has discretion to call or assess up to an additional 5% of a member’s underwriting capacity in any one year as a Central Fund contribution. Our syndicate capacity for the 2023 underwriting year is £1,115.0 million (2022— £900.0 million).

Lloyd's Brussels. Lloyd's Brussels is authorized and regulated by the NBB and regulated by the FSMA. Lloyd's Brussels is an authorized insurance company licensed to write non-life risks across the EEA and the U.K. and also maintains 19 branches across Europe. The use of Lloyd's Brussels provides AMAL with access to the European market to write non-life insurance risks.

Principles for doing business at Lloyd's (the "Principles"). Replacing the Lloyd's Minimum Standards (the previous regime which set out the Lloyd's regulatory requirements for Lloyd's managing agents) and effective from Q3 2022, the Principles set out the fundamental responsibilities expected of all managing agents, including AMAL and is the basis against which Lloyd's will review and categorize all syndicates and managing agents in terms of their capacity and performance.

Jersey Regulation

In 2010, we purchased APJ Asset Protection Jersey Limited ("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. APJ Jersey ceased underwriting new and renewal business in April 2020 and was placed into run-off in June 2020. APJ Jersey's last policy expired in May 2022, and its Category B insurer permit from the JFSC was voluntarily revoked as of October 14, 2022. The Company intends to commence the liquidation of APJ Jersey in the first half of 2023.

In 2020, we identified that APJ Jersey, in connection with an intra-group outsourcing arrangement with Aspen U.K. Syndicate Services Limited ("AUKSSL") (previously APJ Services Limited), had potentially carried out the regulated activities of effecting and carrying out contracts of insurance as principal in contravention of U.K. law as it did not have the necessary licenses and/or authorizations to undertake these activities in the U.K. We have since stopped writing new business via APJ Jersey, and contracts that were in run-off were handled by an outsourced provider who is authorized to do so. APJ's last live contract expired in May 2022. Our regulators and Lloyd's have been notified and, in February 2022, the U.K.'s Financial Conduct Authority ("FCA") and the Jersey Financial Services Commission ("JFSC") were provided with a full review of the APJ Jersey operating model and AUKSSL's U.K. permissions undertaken by a third-party U.K. law firm. The FCA and JFSC have now indicated that they no further questions in relation to the review and has confirmed that it will not be pursuing APJ Jersey or AUKSSL for retroactive fees, and the JFSC has confirmed that it will be taking no further action regarding the review. As noted above, APJ Jersey's permit has been voluntarily revoked and a formal liquidation of APJ Jersey will be pursued in due course.

Other Matters

In 2017, the European Commission opened an investigation into alleged anti-competitive practices in the aviation insurance segment by Aspen UK and other carriers and brokers in the market, but subsequently confirmed in 2021 that it had discontinued its investigation. A similar investigation was opened by the Competition and Consumer Commission of Singapore ("CCCS") in early 2021, although so specific feedback or request for information has been received. In addition, a similar investigation was commenced in 2017 by the Brazilian anti-trust regulator, CADE, and, in 2022, formal allegations of anti-competitive practices in this segment have been alleged against Aspen UK and others in the market. A formal defense has been lodged by Aspen UK and we continue to engage with local counsel to address the questions raised by CADE.

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, Puerto Rico and the District of Columbia. Aspen UK 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, Puerto Rico 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. by promulgating model insurance laws and regulations for adoption by the states. However, model insurance laws and regulations are only effective when adopted by the states. Pursuant to IID requirements, Aspen UK 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, 2022, Aspen UK's and Syndicate 4711's surplus lines trust fund was \$215.1 million (December 31, 2021 — \$216.0 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 the Iowa Insurance Division.

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.

Although the U.S. federal government does not directly regulate the insurance business, federal legislation and administrative policies in several areas can significantly affect the insurance business. The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") established the Federal Insurance Office (the "FIO") within the U.S. Department of the Treasury headed by a Director appointed by the Treasury Secretary. While currently not having a general supervisory or regulatory authority over the business of insurance, the Director of the FIO performs various functions with respect to insurance. The Director of the FIO has also submitted reports to the U.S. Congress on (i) modernization of U.S. insurance regulation (provided in December 2013) and (ii) the U.S. and global reinsurance market (provided in November 2013 and January 2015, respectively). Such reports could ultimately lead to changes in the regulation of insurers and reinsurers in the U.S. 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 reasonable.

As a result of the NAIC's Solvency Modernization Effort, which dates back to 2008, in 2014, 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 state 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, without prior regulatory approval. 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 risk-based capital requirement for property and

casualty insurers measures: (i) underwriting risk, which is the risk of errors in pricing and reserves; (ii) asset risk, which is the risk of asset default for fixed assets and loss-in-market value for equity assets; (iii) credit risk, which is the risk of losses from unrecoverable reinsurance and the inability of insurers to collect agents' balances and other receivables; and (iv) off-balance sheet risk, which is primarily the risk created by excessive growth. The capital requirements for each risk category are determined by applying specified factors to assets, premiums, reserves and other items, with higher factors for items with greater underlying risk and lower factors for items with less risk. The formula is used by insurance regulators as an early warning tool to identify deteriorating or weakly capitalized companies for the purpose of initiating corrective company action or regulatory action. Insurers having less statutory surplus than required by the RBC model formula will be subject to varying degrees of regulatory action depending on the level of capital inadequacy. As of December 31, 2022, AAIC and Aspen Specialty exceeded the levels that would require company action or regulatory action.

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. The Gramm-Leach-Bliley Act requires financial institutions to safeguard the confidentiality and security of nonpublic personal information. 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 requirements 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; however, several states are developing and/or have enacted their own laws and regulations imposing obligations regarding the handling of personal data. For example, in 2018 California enacted the California Consumer Privacy Act ("CCPA"), which came into effect on January 1, 2020, and broadly regulates the collection, processing and disclosure of the personal information of California residents, imposes limits on the "sale" of personal information and grants California residents certain rights to, among other things, access and delete data about them in certain circumstances. CCPA also established a private right of action, with potentially significant statutory damages, whereby businesses that fail to implement reasonable security measures to protect against breaches of personal information could be liable to affected consumers. The CCPA was expanded substantially on January 1, 2023, when the California Privacy Rights Act of 2020 ("CPRA") amendments to the CCPA became fully operative. The amended CCPA, among other things, gives California residents the ability to limit use of certain sensitive personal information, further restricts the use of cross-contextual advertising, establishes restrictions on the retention of personal information, expands the types of data breaches subject to the CCPA's private right of action, provides for increased penalties for CCPA violations concerning California residents under the age of 16, and establishes a new California Privacy Protection Agency to implement and enforce the new law. Other states, such as Colorado, Connecticut, Utah, and Virginia, have already passed similar comprehensive privacy laws that will also go into effect in 2023, and several more are considering their own versions of privacy legislation, demonstrating a strong trend towards more stringent state privacy, data protection and data security legislation in the U.S., which could increase our potential liability and increase the cost of providing our services, and could adversely affect our business.

Operations of Aspen UK and Syndicate 4711. As stated above, Aspen UK 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 UK 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 UK 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 UK and Aspen Bermuda also provide reinsurance to U.S. cedants. In general, a U.S. domiciled 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 UK 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., 50% versus 100%).

The Dodd-Frank Act authorized the U.S. Department of the 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 preempt state insurance laws. Pursuant to this authority, in September 2017, the U.S. federal authorities and the E.U. signed a covered agreement (the "E.U. Covered Agreement") to address, among other things, group supervision and reinsurance collateral requirements and, in anticipation of Brexit, the U.S. and U.K. signed a covered agreement in December 2018 consistent with the U.S. and E.U. agreement (the "U.K. Covered Agreement" and, together with the E.U. Covered Agreement, the "Covered Agreements"). The U.S. also released a "Statement of the United States on the Covered Agreement with the European Union" (the "Policy Statement") providing the U.S.'s interpretation of certain provisions in the E.U. Covered Agreement. In terms of reinsurance, both Covered Agreements eliminate collateral and local presence requirements for alien reinsurers that satisfy certain criteria, including being domiciled in a "reciprocal jurisdiction." Under the Covered Agreements, U.S. state regulators were required to adopt reinsurance reforms removing reinsurance collateral requirements for reinsurers covered under such agreements that meet the prescribed minimum conditions set forth in the applicable Covered Agreement prior to September 1, 2022 or state laws imposing such reinsurance collateral requirements could have been 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. Texas and North Dakota adopted the 2019 Amended Credit for Reinsurance Model Act. The NAIC has approved Bermuda as a "reciprocal jurisdiction." As of March 31, 2023, Aspen Bermuda has been approved as a reciprocal jurisdiction reinsurer eligible for zero collateral in forty-nine states, with one pending application.

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 is 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 group supervision, group capital requirements, uniform standards for insurer corporate governance, enterprise risk management and other control functions and resolution planning applicable to an IAIG in addition to the current legal entity capital requirements imposed by relevant insurance laws and regulations. The NAIC has also promulgated amendments to the insurance holding company system model law that addresses supervision of IAIGs to allow state insurance regulators in the U.S. to be designated as group-wide supervisors for U.S.-based IAIGs or acknowledge another regulatory official acting as the group wide supervisor of an IAIG. In November 2019, the IAIS also adopted a revised version of the risk-based global insurance capital standard (ICS), which is the group capital component of ComFrame. In December 2020, the NAIC adopted a group capital calculation tool ("GCC") 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 NAIC has also adopted changes to the insurance holding company system model law to require, subject to certain exceptions, the ultimate controlling person of every insurer subject to the holding company registration requirement to file an annual group capital calculation with its lead state regulator. 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 Policy Statement with respect to the U.S. participation under the Covered Agreements also provides that the U.S. expects that the GCC will satisfy the group capital assessment requirement under each of the Covered Agreements. 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 becomes 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. Up until January 17, 2023, our subsidiary Aspen Capital Advisors Inc. ("Aspen Advisors") was registered with the SEC as a registered investment adviser. Aspen Advisors served as the investment adviser to a private

investment fund, Aspen Cat Fund Ltd (ACF), that primarily invested 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, 2022 were \$55.9 million (December 31, 2021 — \$64.8 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 was, up until January 17, 2023, 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 provided investment advisory services, offers products similar to those described above or conducts other activities.

As of January 1, 2023, ACF ceased offering participating shares to investors and subsequently applied for and received cancellation of its registration as a private fund with the BMA, effective January 23, 2023. Concurrently, Aspen Advisors filed a de-registration notice with the SEC, which took effect on January 17, 2023.

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.

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. The common stock of Apollo Global Management, Inc. and certain preferred shares of its subsidiary, Apollo Asset Management, Inc., are publicly traded on the NYSE.

The Company’s principal operating subsidiaries at December 31, 2022 are as follows:

Name of Subsidiary	Jurisdiction of Incorporation	Ultimate Ownership Interest Held by AIHL
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; AUL also contributes capital as a corporate member of Carbon Syndicate 4747).

Refer to Exhibit 8.1 to this report for a listing of all the Company’s direct and indirect wholly-owned subsidiaries as at December 31, 2022.

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 and Switzerland. 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, 2022, 2021 and 2020. 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. The discussions below include certain measurements that are considered “non-GAAP financial measures” under SEC rules and regulations. See Item 5H, “Reconciliation of Non-U.S. GAAP Financial Measures” for definitions and tables that reconcile these measures to U.S. GAAP.

For a discussion and analysis of our results of operations for 2021 compared to 2020, refer to the disclosures set forth under the heading “Item 5, Operating and Financial Review and Prospects — A. Operating Results”, on pages 61-82 our [Annual Report on Form 20-F](#) for the year ended December 31, 2021, filed with the SEC on May 16, 2021.

Executive Overview

Our 2022 result reflects the work we have done over a number of years to reshape our business to drive robust and sustainable value creation. We have reported the third consecutive year of improved performance despite a highly challenging twelve months that included Russia’s invasion of Ukraine, rising inflation and significant natural catastrophe activity, all of which generated notable loss activity for our sector. We continue to build a diversified business with earnings driven from underwriting performance, fee income and investment income while our proactive approach to portfolio management means we are well-positioned to take advantage of the underwriting opportunities that the market is currently providing. Our focus will continue to be on sustainable growth and profitability, as we continue to work towards our objective of delivering consistent top quartile results.

Underwriting Performance. In 2022, the Company reported an underwriting income of \$190.4 million (adjusted underwriting income of \$205.5 million) in the twelve months ended December 31, 2022 up from \$(30.0) million (\$28.3 million adjusted underwriting income) in the twelve months ended December 31, 2021 resulting in a combined ratio of 93.0% (adjusted combined ratio of 92.4%) compared to 101.2% (adjusted combined ratio of 98.8%) in 2021.

Aspen Capital Partners. Aspen Capital Partners, our capital markets franchise, reported total fee income of \$103.9 million for the twelve months ended December 31, 2022, an increase of \$42.5 million compared to \$61.4 million in 2021. This fee income is primarily reflected as an offset to our acquisition costs and therefore benefits underwriting performance. Our capital markets franchise has continued to grow with managed third-party capital increasing to \$1,252.7 million at the end of 2022, up from \$917.7 million at the end of 2021. Our ability to grow and diversify the capital we manage, notwithstanding a challenging environment, supports our core proposition that capital markets investors are key partners in Aspen’s future growth and innovation efforts.

Net Investment Income. In 2022, we generated net investment income of \$188.1 million, an increase of 27.5% from the prior year (2021 — \$147.5 million), largely as a result of interest rate increases in the U.S. which led to higher income on floating rate assets. The higher rate environment, and credit spread widening, led to higher income from the reinvestment of maturing assets. Investment portfolio in 2022 is comprised primarily of interest on our fixed income securities portfolio.

Strategic Business Initiatives

Over the course of 2022, we continued to implement a number of strategic initiatives including; strengthening our consolidated balance sheet through a significant loss portfolio transfer transaction, expanding our scale of business written via our Lloyd’s syndicate, and other simplifications of our business model.

Loss Portfolio Transfer (“LPT”) Agreement:

On January 10, 2022, the Company entered into the LPT. The LPT resulted in Enstar assuming net loss reserves of \$3,120.0 million, for losses with dates of loss on or prior to December 31, 2019, subject to a limit of \$3,570.0 million. The existing ADC between the parties that closed in June 2020 was absorbed into the LPT. The LPT transaction closed on May 20, 2022, following receipt of regulatory approvals and satisfaction of various other closing conditions.

The LPT transaction has positively impacted the Aspen Group's overall capital position and enabled the deployment of capital into the continued attractive market environment, while significantly improving the protection of its balance sheet and future earnings from the potential impact of the reserve volatility on 2019 and prior accident years.

The following table sets forth the balance sheet positions as at December 31, 2022, and amounts recognized in the statements of operations for the twelve months ended December 31, 2022, relating to the LPT. Refer to Item 18, Note 2 of our consolidated financial statements, "Basis of Presentation and Significant Accounting Policies" for additional details of the retroactive reinsurance contracts.

LPT elements GAAP basis

	As at December 31, 2022	
	(\$ in millions)	
Total recoverable on the LPT ⁽¹⁾	\$	2,132.0
Total reinsurance premium payable (funds withheld) ⁽²⁾	\$	1,307.7
	For the Twelve Months Ended December 31, 2022	
	(\$ in millions)	
Change in deferred (gain)	\$	(14.3)
Net cost related to the LPT contract		29.4
Total adverse impact of LPT on the underwriting result ⁽³⁾		15.1

⁽¹⁾ As at December 31, 2022, we estimate that we have approximately \$420 million of remaining limit, net of foreign exchange, available under the terms of the LPT.

⁽²⁾ The loss portfolio transfer contract includes a funds withheld arrangement that provides returns to the reinsurer based on Aspen's investment performance, guaranteeing a minimum of 1.75% return. Such funds withheld arrangements are examples of embedded derivatives and therefore this instrument is accounted for as an option-based derivative. The value of the embedded derivative as at December 31, 2022 is \$31.7 million. Additionally the interest charge for the twelve months ended December 31, 2022 for the base rate guaranteeing a minimum of 1.75% is \$21.7 million with the variable component based on Aspen's investment performance being \$7.7 million.

⁽³⁾ Under U.S.GAAP, any gains on retroactive reinsurance contracts are required to be deferred and amortized over the settlement period. Change in deferred gain and the associated costs of the LPT are included in the statement of operations within losses and loss adjustment expenses.

LPT elements adjusted basis

In order to reflect the economic benefit of the LPT agreement, we have presented an adjusted basis of underwriting results which makes certain adjustments to the GAAP presentation. The adjusted underwriting income removes the deferral and amortization of the gain on the retroactive reinsurance contract. In addition, the net cost of the LPT relating to 2019 and prior accident years has been excluded from losses and loss adjustment expenses. This adjusted presentation reflects the underwriting results for accident years 2020 onwards, which is the true economic view of our underwriting performance since the LPT provides cover for all 2019 and prior losses and is still within limits.

	For the Twelve Months Ended December 31, 2022	
	(\$ in millions)	(Combined Ratio)
Underwriting Income as per GAAP	\$ 190.4	93.0 %
Remove total adverse impact of LPT on underwriting income	15.1	(0.6)%
Adjusted underwriting income	\$ 205.5	92.4 %

Increased Lloyd's Capacity:

Following a successful business planning process with Lloyd's, Aspen received approval to significantly grow its Lloyd's capacity to £1,115.0 million for the 2023 year of account. In 2022, the Company expanded the scale of business written via its Lloyd's syndicate, including a significant book of reinsurance that was previously written by Aspen UK, which was in line with our strategy to simplify our operations and more strategically align our platforms. This increased the relevance and scale in the important Lloyd's market. Growing our presence in Lloyd's is a critical part of our overall balance sheet simplification strategy. It also allows us to better utilize the advantages of the Lloyd's platform, both for capital efficiencies and ease of access.

Leadership, talent and culture. We continue to strive to establish a culture at Aspen that attracts and retains the very best talent. Of critical importance is that we continue to build a diverse and inclusive environment that encourages and empowers our people, while also taking steps to consider how we can best manage our impact on the environment and positively affect the communities we serve. Notable activity in 2022 included:

- The senior appointments of Phil Jones as Group Chief Information Officer, Jenny Kane as Group Chief Risk Officer, and Henry MacHale as Group Chief Strategy Officer. Henry and Jenny were internal candidates which underpins the strength of talent we have within the organization.
- In 2022, work continued to build a more diverse, equitable and inclusive business. We established employee-led gender and ethnicity communities across the U.K., U.S. and Bermuda. We started collecting ethnicity data for our employees to better understand our workforce and build a more inclusive working environment.
- Earlier this year, we published our second Environmental Social and Governance (ESG) Report, building on the work started in 2021. The report shows steady progress across all three pillars of ESG, and the continued focus on embedding ESG and sustainability into Aspen's strategy and values.

A. Operating Results

Our consolidated financial statements are prepared in accordance with U.S. GAAP. The discussions that follow include tables and commentary relating to our consolidated income statement and our segmental operating results for the twelve months ended December 31, 2022, 2021 and 2020 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 \$4,338.7 million in 2022, an increase of 10.2% in 2021, primarily due to rate improvement and growth in both of our underwriting segments.

- Overall underwriting income of \$190.4 million (combined ratio of 93.0%) for 2022, including \$306.8 million, or 11.4 percentage points, of pre-tax catastrophe losses related to significant industry events, including Hurricane Ian, floods in Australia and South Africa, the Russia/Ukraine war and other weather-related events. Underwriting loss of \$30.0 million (combined ratio of 101.2%) for 2021, which included \$326.7 million or 13.6 percentage points of pre-tax catastrophe losses, related to significant industry events, including Hurricane Ida, European floods and U.S. winter storms.
- Net unfavorable development on prior year loss reserves for 2022 of \$28.1 million, or 1.0 combined ratio points, compared with net unfavorable development for 2021 of \$45.1 million, or 1.9 combined ratio points.
- Adjusted underwriting income of \$205.5 million (adjusted combined ratio of 92.4% for 2022) includes an adjustment of \$15.1 million for the change in deferred gain on retroactive reinsurance contracts to economically match the loss recoveries under the LPT with the covered reserves excludes certain costs related to the LPT contract. Adjusted underwriting income represents the performance of our business for accident years 2020 onwards, which reflects the underlying underwriting performance of the ongoing portfolio. Adjusted underwriting income of \$28.3 million and adjusted combined ratio of 98.8% for 2021 included an adjustment of \$58.3 million for the change in deferred gain on retroactive reinsurance contracts.
- Our capital markets business contributed total fee income of \$103.9 million in the twelve months ended December 31, 2022, an increase of \$42.5 million compared to \$61.4 million in 2021. Income from ACM's activities is primarily allocated to the ceded line of business and serves to reduce acquisition expenses for that business. Total assets under management grew to more than \$1,252.7 million as at December 31, 2022, compared with \$917.7 million at December 31, 2021.
- Operating return on average equity was 11.9% for 2022 compared with 2.4% in 2021.

Shareholders' equity. Total shareholders' equity decreased by \$416.8 million from \$2,774.8 million as at December 31, 2021 to \$2,358.0 million as at December 31, 2022, the most significant movements of which were as follows:

- a reduction of \$383.3 million in other comprehensive income which included \$367.8 million of net unrealized losses on available for sale investments, a \$30.9 million loss in foreign currency translation on unrealized investments classified as available-for-sale and a \$15.4 million net gain in the value of hedged foreign exchange contracts; and
- a decrease of \$33.5 million in retained earnings primarily due to a net income of \$51.1 million off-set by the payments of \$40.0 million in dividends on our Ordinary Shares and \$44.6 million in dividends on our Preference Shares.

As at December 31, 2022, our total shareholders' equity included Preference Shares with a total value as measured by their liquidation preferences of \$775.0 million less issue costs of \$21.5 million (2021 — \$775.0 million less issue costs of \$21.5 million).

Consolidated Group Result

	Twelve Months Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	(\$ in millions, except for percentages)		
Underwriting Revenues			
Gross written premiums	\$ 4,338.7	\$ 3,938.4	\$ 3,698.5
Net premiums written	2,896.0	2,587.7	2,577.8
Net premiums earned	2,688.7	2,410.5	2,527.5
Underwriting Expenses			
Losses and loss adjustment expenses	(1,680.0)	(1,693.3)	(1,840.8)
Acquisition costs	(431.8)	(414.1)	(465.7)
General and administrative expenses	(386.5)	(333.1)	(308.0)
Other Income and Expense			
Corporate expenses	(71.7)	(64.3)	(70.2)
Non-operating expenses	(36.0)	(20.6)	(32.7)
Net investment income	188.1	147.5	154.6
Realized and unrealized investment gains	5.0	56.2	98.5
Realized and unrealized investment losses	(182.6)	(47.4)	(27.4)
Change in fair value of derivatives	(80.5)	(35.9)	(65.1)
Interest expense	(43.7)	(14.3)	(33.9)
Net realized and unrealized foreign exchange gains/(losses)	15.9	40.0	(13.8)
Other income	8.2	14.7	49.8
Other expenses	(20.1)	(10.8)	(10.8)
(Loss)/income before income tax	\$ (27.0)	\$ 35.1	\$ (38.0)
Income tax benefit/(expense)	78.1	(5.3)	(18.4)
Net Income/(loss)	51.1	29.8	(56.4)
Other Metrics			
Underwriting income/(loss)	190.4	(30.0)	(87.0)
Loss ratio	62.5 %	70.2 %	72.8 %
Expense ratio	30.5 %	31.0 %	30.6 %
Combined ratio	93.0 %	101.2 %	103.4 %
Adjusted combined ratio ⁽¹⁾	92.4 %	98.8 %	— %

⁽¹⁾ Adjusted combined ratio removes the impact of the change in deferred gain on retroactive reinsurance contracts in order to match the loss recoveries under the ADC/LPT contracts with the underlying loss development of the subject business of 2019 and prior accident years and also excludes the cost of the LPT contract with Enstar that closed in the second quarter of 2022. Adjusted combined ratio represents the performance of our business for accident years 2020 onwards, which reflects the underlying underwriting performance of the ongoing portfolio.

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, 2022, 2021 and 2020:

<u>Business Segment</u>	<u>Gross Written Premiums for the Twelve Months Ended December 31,</u>					
	<u>2022</u>		<u>2021</u>		<u>2020</u>	
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>	
Reinsurance	\$ 1,807.0	13.1 %	\$ 1,597.0	(3.6)%	\$ 1,656.4	
Insurance	2,531.7	8.1 %	2,341.4	14.7 %	2,042.1	
Total	<u>\$ 4,338.7</u>	<u>10.2 %</u>	<u>\$ 3,938.4</u>	<u>6.5 %</u>	<u>\$ 3,698.5</u>	

Overall gross written premiums increased by 10.2% in 2022 compared to 2021. Gross written premiums in our reinsurance segment increased by 13.1% in 2022 compared to 2021 mainly due to rate improvements, significant new business and high retention rates within our casualty reinsurance and specialty reinsurance segment, offset by a decrease in property reinsurance primarily due to management's decision to decrease exposure, by reducing capacity and not renewing business with large loss volatility. Gross written premiums in our insurance segment increased by 8.1% primarily due to strong performance across renewal business, positive rate improvements and new business across both financial and professional insurance lines and casualty and liability insurance lines, partially offset by the decrease in first party and specialty insurance due to our decision to cease underwriting in accident and health and the decision to withdraw from certain first party program business.

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, 2022, 2021 and 2020:

<u>Business Segment</u>	<u>Ceded Written Premiums for the Twelve Months Ended December 31,</u>					
	<u>2022</u>		<u>2021</u>		<u>2020</u>	
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>	
Reinsurance	\$ 380.6	(4.4)%	\$ 398.0	11.0 %	\$ 358.7	
Insurance	1,062.1	11.5 %	952.7	25.0 %	762.0	
Total	<u>\$ 1,442.7</u>	<u>6.8 %</u>	<u>\$ 1,350.7</u>	<u>20.5 %</u>	<u>\$ 1,120.7</u>	

Total ceded written premiums in 2022 increased by \$92.0 million, or 6.8%, compared to 2021. Changes in our reinsurance program increased our retention ratio, which is defined as net written premiums as a percentage of gross written premiums, from 65.7% in 2021 to 66.7% in 2022. Ceded reinsurance premiums decreased for our reinsurance segment, primarily due to a decrease in the level of reinsurance purchased to protect our reduced property catastrophe reinsurance business line. Ceded reinsurance premiums increased for our insurance segment primarily within casualty and liability, and financial and professional lines due to increase in gross written premium and consequently increase in the proportion of business ceded via quota share arrangements.

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, 2022, 2021 and 2020:

<u>Business Segment</u>	<u>Net Premiums Earned for the Twelve Months Ended December 31,</u>					
	<u>2022</u>		<u>2021</u>		<u>2020</u>	
	<u>(\$ in millions)</u>	<u>% change</u>	<u>(\$ in millions)</u>	<u>% change</u>	<u>(in millions)</u>	
Reinsurance ⁽¹⁾	\$ 1,251.8	11.9 %	\$ 1,118.8	(13.1)%	\$ 1,287.7	
Insurance	1,436.9	11.2 %	1,291.7	4.2 %	1,239.8	
Total	<u>\$ 2,688.7</u>	<u>11.5 %</u>	<u>\$ 2,410.5</u>	<u>(4.6)%</u>	<u>\$ 2,527.5</u>	

⁽¹⁾ 2020 includes net premiums earned of \$228.1 million related to GB DS.

Net premiums earned increased by \$278.2 million, or 11.5%, in 2022 compared to 2021 due to a \$369.7 million increase in gross earned premiums offset by a \$91.5 million increase in ceded earned premiums primarily due to the increase in gross written premium in the twelve months ended December 31, 2022.

Losses and loss adjustment expenses. We have presented the different components of the loss ratios, including adjusting for the impact of the LPT, which includes changes in retroactive reinsurance contracts as we believe that the presentation of adjusted loss ratios more appropriately reflects the underlying performance. Additionally, we have also presented current year loss ratios, the impact of catastrophe losses and prior year development for accident years that are not covered by the LPT.

Twelve Months Ended December 31, 2022						
	Reinsurance		Insurance		Total	
	Net Loss Expense	Loss Ratio	Net Loss Expense	Loss Ratio	Net Loss Expense	Loss Ratio
	(\$ in millions)	%	(\$ in millions)	%	(\$ in millions)	%
Current accident year losses, excluding catastrophe losses	\$ 584.0	46.6 %	\$ 761.1	53.0 %	\$ 1,345.1	50.0 %
Catastrophe losses	245.1	19.6	61.7	4.3	306.8	11.4
Prior year (favorable)/ adverse reserve development — Post-LPT years	(24.6)	(2.0)	37.6	2.6	13.0	0.5
Adjusted losses and loss adjustment expenses	804.5	64.2	860.4	59.9	1,664.9	61.9
Impact of LPT and changes in retroactive reinsurance	(34.2)	(2.7)	49.3	3.4	15.1	0.6
Total losses and loss adjustment expenses	<u>\$ 770.3</u>	<u>61.5 %</u>	<u>\$ 909.7</u>	<u>63.3 %</u>	<u>\$ 1,680.0</u>	<u>62.5 %</u>

Twelve Months Ended December 31, 2021						
	Reinsurance		Insurance		Total	
	Net Loss Expense	Loss Ratio	Net Loss Expense	Loss Ratio	Net Loss Expense	Loss Ratio
	(\$ in millions)	%	(\$ in millions)	%	(\$ in millions)	%
Current accident year losses, excluding catastrophe losses	\$ 584.6	52.2 %	\$ 736.9	57.0 %	\$ 1,321.5	54.7 %
Catastrophe losses	255.0	22.8	71.7	5.6	326.7	13.6
Prior year (favorable)/ adverse reserve development — Post-LPT years	(175.8)	(15.7)	162.6	12.6	(13.2)	(0.5)
Adjusted losses and loss adjustment expenses	663.8	59.3	971.2	75.2	1,635.0	67.8
Impact of ADC and changes in retroactive deferred gain	41.4	3.7	16.9	1.3	58.3	2.4
Total losses and loss adjustment expenses	<u>\$ 705.2</u>	<u>63.0 %</u>	<u>\$ 988.1</u>	<u>76.5 %</u>	<u>\$ 1,693.3</u>	<u>70.2 %</u>

The overall loss ratio for 2022 of 62.5% improved by 7.7 percentage points compared to 2021 and losses and loss adjustment expenses decreased from \$1,693.3 million in 2021 to \$1,680.0 million in 2022. This was mainly due to the following:

Current accident year losses. Current accident year loss ratio for 2022 of 50.0% improved by 4.7 percentage points compared to 2021 due to improved underlying loss experience and improved pricing within our first party and specialty, and casualty and specialty lines.

Catastrophe losses. Catastrophe losses contributed \$306.8 million or 11.4 percentage points for the twelve months ended December 31, 2022 compared to \$326.7 million or 13.6 percentage points for the twelve months ended December 31, 2021. Catastrophe losses in 2022 include losses associated with Hurricane Ian, floods in Australia and South Africa, the Russia/Ukraine war and other weather-related events. Catastrophe losses in 2021 were defined as losses associated with Texas winter storms, Hurricane Ida, European floods and other weather-related events. Refer to Item 4A, “Natural Catastrophe Risks”, for details on our PMLs.

Prior year development on post-LPT years. Reserve development related to 2020 and 2021 accident years, which for the twelve months ended December 31, 2022, contributed an adverse development of 0.5% towards the overall loss ratio, while for the twelve months ended December 31, 2021, including reserve development for 2020 accident year, contributed a favorable development of (0.5)% towards the overall loss ratio.

Adjusted losses and loss adjustment expenses and related losses. The adjusted losses and loss adjustment expenses relate to the post-LPT accident years and exclude the cost of the LPT recognized in 2022, as well as the change in deferred gain associated with retroactive reinsurance contracts. Adjusted losses and loss adjustment expenses and related losses represents the performance of our business for accident years 2020 onwards, which reflects the underlying underwriting performance of the ongoing portfolio. Refer to Item 18, Note 2 of our consolidated financial statements, “Basis of Presentation and Significant Accounting Policies” for additional details of the retroactive reinsurance contracts. The adjusted losses and loss adjustment expenses is the basis on which we report adjusted underwriting income and adjusted combined ratio, as well as the basis in which underwriting income contributes to operating income. Refer to Item 5H, “Reconciliation of Non-U.S. GAAP Financial Measures”, for further details.

Aspen Capital Markets. ACM sources capital and develops alternative reinsurance structures to leverage the Company's underwriting and analytical expertise and earns management and performance fees from third party investors primarily through the placement and management of ILS funds and other offerings.

The following table sets forth a summary of fee income and assets under management with respect to our ACM activity, for the twelve months ended December 31, 2022 and 2021, with 2020 and 2019 comparatives provided for trend purposes. The increase in fee income is due to the growth achieved in the third-party managed capital and managed earned premium.

ACM (in \$ millions)	For the Twelve Months Ended December 31,			
	2022	2021	2020	2019
Fee income ⁽¹⁾	\$ 103.9	\$ 61.4	\$ 31.0	\$ 18.5
	As at December 31,			
	2022	2021	2020	2019
Assets under management (Managed third-party capital)	\$ 1,252.7	\$ 917.7	\$ 680.8	\$ 582.7

⁽¹⁾ Fee income earned through third party capital management activities is primarily recorded through underwriting income/(loss) as a decrease to acquisition expenses.

Impact of LPT includes the one-off associated costs in relation to the LPT recognized in 2022 and changes in retroactive reinsurance contracts, totaling \$15.1 million.

The reinsurance segment loss ratio for 2022 was 61.5% compared to 63.0% in 2021. The decrease was largely due to an improved current accident year result and underlying claim performance together with a decrease in catastrophe losses of \$9.9 million, partially offset by a \$75.6 million decrease in reserve releases and impact of LPT year on year. In 2022, there were \$245.1 million of net catastrophe losses, including \$95.0 million from Hurricane Ian, \$31.9 million from Australia floods, \$10.8 million from South Africa floods and \$52.4 million of other weather-related events. 2022 also included \$55.0 million of losses from the Russia/Ukraine war. In 2021, we experienced \$255.0 million of net catastrophe losses, associated with losses from Hurricane Ida, U.S. winter storms, European floods and other weather-related events. Large losses experienced during 2022 were \$10.4 million, consisting of fire damage related losses.

The insurance segment loss ratio for 2022 was 63.3% compared to 76.5% in 2021. The decrease in the loss ratio in 2022 was due to an improved current accident year result and underlying claim performance together with a \$92.7 million reduction in impact of LPT and adverse reserve development year on year, from \$179.5 million strengthening in 2021 to \$86.9 million strengthening in 2022, and a \$10.0 million decrease in catastrophe losses. In 2022, the insurance segment experienced \$61.7 million of net catastrophe losses, due to \$29.8 million from Hurricane Ian and \$24.4 million from other weather-related events. 2022 also included \$7.5 million of losses from the Russia/Ukraine war. Large losses experienced during 2022 included \$31.0 million, comprised of \$9.8 million of terror related losses, \$13.5 million of fire related losses, \$3.8 million of property damage related losses and \$3.9 million related to professional liability related losses. In 2021, our insurance segment experienced \$71.7 million of net catastrophe losses, due to \$25.6 million from U.S. winter storms, \$23.2 million from Hurricane Ida and \$22.9 million from other weather-related events. Large losses experienced during 2021 included \$34.6 million of fire, property damage, crisis and cyber-related related losses.

Acquisition expenses. We monitor the ratio of expenses to net earned premium as a measure of the cost effectiveness of our acquisition costs, and general and administrative expenses. The tables below present the contribution of the acquisition costs and general and administrative expenses to the net expense ratios for the twelve months ended December 31, 2022, 2021 and 2020.

Ratios Based on Net Earned Premium	For the Twelve Months Ended December 31, 2022		
	Reinsurance	Insurance	Total
Net acquisition cost ratio	20.2 %	12.5 %	16.1 %
General and administrative expense ratio	11.4 %	17.0 %	14.4 %
Total expense ratio	31.6 %	29.5 %	30.5 %

For the Twelve Months Ended December 31, 2021			
<u>Ratios Based on Net Earned Premium</u>	Reinsurance	Insurance	Total
Net acquisition cost ratio	19.8 %	14.9 %	17.2 %
General, and administrative expense ratio	10.8 %	16.4 %	13.8 %
Total expense ratio	30.6 %	31.3 %	31.0 %

For the Twelve Months Ended December 31, 2020			
<u>Ratios Based on Net Earned Premium</u>	Reinsurance	Insurance	Total
Net acquisition cost ratio	19.1 %	17.7 %	18.4 %
General administrative expense ratio	8.6 %	15.9 %	12.2 %
Total expense ratio	27.7 %	33.6 %	30.6 %

Net acquisition cost ratio improved from 17.2% in 2021 to 16.1% in 2022. This improvement was primarily within our insurance segment due to a greater proportion of our business being ceded to Aspen Capital Markets businesses, partially offset by higher expenses incurred within reinsurance lines due to changes in the mix of business.

General and administrative expense ratio increased from 13.8% in 2021 to 14.4% in 2022. This increase of \$53.4 million from \$333.1 million in 2021 to \$386.5 million in 2022 is due to increased staff costs, higher professional and consulting fees, an increase in IT and organizational change related costs and an increase in Lloyd's related costs due to increased capacity in the year.

Combined ratio. We monitor the ratio of losses and loss adjustment expenses, acquisition costs and general and administrative expenses to net earned premium (the "combined ratio") as a measure of relative performance. The combined ratios for our two business segments for the twelve months ended December 31, 2022, 2021 and 2020 were as follows:

<u>Business Segment</u>	Combined Ratios for the Twelve Months Ended December 31,		
	2022	2021	2020
Reinsurance	93.1 %	93.6 %	102.1 %
Insurance	92.8 %	107.8 %	104.7 %
Total ⁽¹⁾	93.0 %	101.2 %	103.4 %
Adjusted total combined ratio ⁽²⁾	92.4 %	98.8 %	— %

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

(2) Adjusted combined ratio removes the impact of the change in deferred gain on retroactive reinsurance contracts in order to match the loss recoveries under the ADC/LPT contracts with the underlying loss development of the subject business of 2019 and prior accident years and also excludes the cost of the LPT contract with Enstar that closed in the second quarter in 2022. Adjusted losses and loss adjustment expenses and related losses represents the performance of our business for accident years 2020 onwards, which reflects the underlying underwriting performance of the ongoing portfolio.

The adjusted combined ratio for 2022 of 92.4% improved from 98.8% in 2021 due to a decrease in both the loss ratio and net acquisition cost ratio, partially offset by an increase in the general and administrative expense ratio. The decrease in loss ratio was primarily due to a reduction in current accident year losses and a decrease in catastrophe losses. The decrease in net acquisition expenses was primarily within our insurance segment, due to a greater proportion of our business being ceded to Aspen Capital Markets businesses. The increase in expense ratio was due to increased staff costs, higher professional and consulting fees, an increase in IT and organizational change related costs and an increase in Lloyd's related costs due to increased capacity in the year.

Corporate expenses. In 2022, we incurred corporate expenses of \$71.7 million (2021 — \$64.3 million). The increase in corporate expense in 2022 compared to 2021 was due to higher staff costs, higher professional and consulting fees and an increase in IT and organizational change related costs.

Non-operating expenses. In 2022, we incurred non-operating expenses of \$36.0 million which included \$32.7 million in relation to fixed assets, including capitalized project costs written off, \$10.0 million of severance, consulting and professional services in relation to non-recurring projects and other costs, offset by \$6.7 million of write backs related to leased office space. Non-operating costs in 2021 of \$20.6 million included \$19.3 million of severance, consulting and professional services in

relation to non-recurring projects and other costs, \$0.4 million of impairment charges related to lease assets as a result of exiting certain office space and \$0.9 million of amortization of intangible assets and other non-operating expenses.

Other income and other expenses. In 2022, we earned other income of \$8.2 million (2021 — \$14.7 million), which included \$5.3 million of ACM other income (2021 — \$1.1 million). We incurred other expenses totaling \$20.1 million (2021 — \$10.8 million), which primarily included letter of credit and revolving credit facility charges of \$19.3 million.

Investment gains. Total net realized and unrealized investment losses for the twelve months ended December 31, 2022 were \$177.6 million (2021 — gains of \$8.8 million), which included \$106.3 million of unrealized losses (2021 — gains of \$5.0 million) caused by the mark to market valuation impact from higher interest rate and credit spread widening. These unrealized losses will unwind as the investments mature.

Net investment income. In 2022, we generated net investment income of \$188.1 million, an increase of 27.5% from the prior year (2021 — \$147.5 million), largely as a result of interest rate increases in the U.S. which led to higher income on floating rate assets. The higher rate environment, and credit spread widening, led to higher income from the reinvestment of maturing assets. Investment portfolio in 2022 is comprised primarily of interest on our fixed income securities portfolio.

Change in fair value of derivatives. 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, 2022, we held foreign exchange contracts that were not designated as hedging under ASC 815 - “*Derivatives and Hedging*” with a notional amount of \$1,675.3 million (2021 — \$1,545.7 million). The foreign exchange contracts are recorded as derivatives at fair value in the consolidated 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, 2022, the impact of foreign exchange contracts on net income was a loss of \$80.5 million (2021 — loss of \$35.9 million), attributable to foreign exchange contracts that had a loss of \$65.9 million, which included an additional loss within the LPT embedded derivative of \$14.6 million.

As at December 31, 2022, we held foreign exchange contracts that were designated as hedges under ASC 815 with an aggregate notional amount of \$109.7 million (2021 — \$143.1 million). The foreign exchange contracts are recorded as assets or liabilities under derivative contracts in the consolidated 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 consolidated statement of operations. The contracts are effective and therefore the movement in other comprehensive income representing the effective portion for the twelve months ended December 31, 2022 was a gain of \$15.4 million (December 31, 2021 — loss of \$6.2 million).

As the foreign exchange contracts settle, the realized gain or loss is reclassified from other comprehensive income into general administrative and corporate expenses of the consolidated statement of operations and other comprehensive income. For the twelve months ended December 31, 2022, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$5.9 million (December 31, 2021 — loss of \$5.7 million).

Interest expense. Interest expense of \$43.7 million in the twelve months ended December 31, 2022 represents the interest on the 2023 Senior Notes of \$14.3 million and interest payable on the funds withheld account on the LPT contract with Enstar of \$29.4 million. Interest expense of \$14.3 million in 2021 represents the interest on the 2023 Senior Notes.

(Loss)/Income before tax. In the twelve months ended December 31, 2022, loss before tax was \$27.0 million (2021 — income of \$35.1 million).

Income tax expense. There was an income tax benefit for the twelve months ended December 31, 2022 of \$78.1 million compared to an income tax expense of \$5.3 million in 2021.

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, 2022, on profit before tax was 289.3% (2021 — 15.1%), driven by a change in judgment about the recoverability of deferred tax assets in the U.S. operating subsidiaries, resulting in a \$94.2 million tax credit from the reversal of brought forward valuation allowance. We believe that the deferred tax assets of our U.S. operating subsidiaries will more likely than not be fully utilized over time, and therefore the previously recognized valuation allowance in relation to U.S. operating subsidiaries has been reversed. Refer to Item 18, Note 11 of our consolidated financial statements, “Income Taxes”, for additional details.

The effective tax rate is impacted by the relative profitability of the business underwritten in Bermuda, the United Kingdom and the United States, all of which have different corporate/federal tax rates.

Net income/(loss) after tax. We reported net income after taxes of \$51.1 million in 2022 compared to a net income of \$29.8 million in 2021. The difference in net income was primarily due to an improvement in underwriting result of \$220.4 million, reversal of brought forward deferred taxation valuation allowance, resulting in a \$94.2 million tax credit, offset by a change in net realized and unrealized investment losses of \$186.4 million, movement in change in fair value of derivatives of \$44.6 million and movement in interest expense of \$29.4 million.

Other comprehensive income. Total other comprehensive income decreased by \$383.3 million (2021 — \$142.7 million decrease), net of taxes, for the twelve months ended December 31, 2022. The decrease in total other comprehensive income includes a net unrealized loss of \$423.3 million in the available for sale investment portfolio (2021 — \$137.5 million net unrealized loss) attributable to the impact of rising interest rates on our bond portfolios, a \$55.5 million reclassification of net realized loss to net income (2021 — \$20.4 million reclassified realized gains), a \$15.4 million unrealized gain (2021 — \$6.2 million unrealized loss) on the hedged derivative contracts, and an unrealized loss in foreign currency translation on available for sale investments of \$30.9 million (2021 — \$21.4 million unrealized gain) largely attributable to the impact from the continued strengthening of the U.S. dollar against the British Pound and the Euro.

Underwriting Results by Business Segment

We are organized into two business segments, namely Reinsurance and Insurance. We have determined our reportable segments, Reinsurance and Insurance, by taking into account the manner in which the chief operating decision maker determines operating decisions and assesses operating performance. Profit or loss for each of the business segments is measured by underwriting income or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, acquisition costs and general and administrative expenses. Underwriting income 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, 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-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 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 income 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 income or loss, 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, 2022, 2021 and 2020 and the percentage change in gross written premiums for each line of business:

Lines of Business	For the Twelve Months Ended December 31,					
	2022		2021		2020	
	(\$ in millions)	% change	(\$ in millions)	% change	(\$ in millions)	
Property catastrophe reinsurance	\$ 354.9	(5.7)%	\$ 376.5	20.7 %	\$ 311.8	
Other property reinsurance	428.8	(9.5)%	473.6	18.5 %	399.6	
Casualty reinsurance	596.4	33.9 %	445.5	14.1 %	390.5	
Specialty reinsurance	426.9	41.6 %	301.4	(45.6)%	554.5	
Total	<u>\$ 1,807.0</u>	<u>13.1 %</u>	<u>\$ 1,597.0</u>	<u>(3.6)%</u>	<u>\$ 1,656.4</u>	

The decrease in gross written premiums in 2022 compared to 2021 in property catastrophe and other property reinsurance was primarily due to management's decision to reduce exposure, notwithstanding increased rates achieved. The increase in gross written premiums in casualty reinsurance was primarily due to rate improvements, significant new business and higher retention rates. The increase in gross written premiums in specialty reinsurance was primarily due to increased new business in our mortgage business.

Ceded written premiums. Total ceded written premiums in 2022 were \$380.6 million, a decrease of \$17.4 million compared to 2021. This was due to a decrease in the level of reinsurance purchased protecting our property catastrophe reinsurance business lines, reflecting the decrease in exposures assumed.

Net premiums earned. Net premiums earned increased by \$133.0 million, or 11.9%, in 2022 compared to 2021.

Losses and loss adjustment expenses. The loss ratio was 61.5% in 2022, a decrease of 1.5 percentage points compared to 63.0% in 2021. This was mainly due to the following:

Current accident year loss ratio for 2022 of 46.6% improved by 5.6 percentage points compared to 2021, due to improved underlying loss experience and improved pricing mainly from our casualty and specialty reinsurance business lines. Additionally, large losses experienced in our reinsurance segment during 2022 of \$10.4 million, which primarily comprised of fire damage related losses. Large losses experienced in our reinsurance segment during 2021 were \$21.7 million, comprised of \$4.7 million of satellite related losses, \$12.5 million of fire damage related losses and \$4.5 million of cyber related losses.

Catastrophe losses decreased from \$255.0 million in 2021 to \$245.1 million in 2022, improving the loss ratio by 3.2 percentage points. In 2022, the net catastrophe losses of \$245.1 million included \$95.0 million from Hurricane Ian, \$31.9 million from Australia floods, \$10.8 million from South Africa floods and \$52.4 million of other weather-related events. 2022 also included \$55.0 million of losses from the Russia/Ukraine war. Large losses experienced in our reinsurance segment during 2022 were \$10.4 million, which primarily comprised of fire damage related losses.

In 2021, the net catastrophe losses of \$255.0 million included, \$97.5 million from Hurricane Ida, \$61.1 million from U.S. winter storms, \$65.7 million from European floods and \$30.7 million of other weather-related events. Large losses experienced in our reinsurance segment during 2021 were \$21.7 million, comprised of \$4.7 million of satellite related losses, \$12.5 million of fire damage related losses and \$4.5 million of cyber related losses.

Favorable prior year development totaled \$24.6 million in the current year compared to \$175.8 million in the twelve months ended December 31, 2021. Reserve releases in 2022 were primarily from casualty reinsurance and property catastrophe. The reserve releases in 2021 were primarily from specialty reinsurance and casualty reinsurance. There is no net development for the 2019 and prior accident years, since loss development remains within the LPT reinsured limits.

Acquisition, general and administrative expenses. Acquisition costs were \$252.4 million for the twelve months ended December 31, 2022, equivalent to 20.2% of net premiums earned (2021 — \$221.6 million or 19.8% of net premiums earned). The increase in the acquisition costs were mainly attributable to higher ceded commissions on casualty reinsurance.

Our general and administrative expenses increased by \$21.2 million from \$121.3 million in 2021 to \$142.5 million in 2022. Our general and administrative expense ratio was 11.4% in 2022 compared to 10.8% in 2021 largely driven by an increase in Lloyd's related costs due to increase in capacity, higher professional and consulting fees and an increase in IT and organizational change related costs.

Insurance

Our insurance segment consists of casualty and liability insurance, first party and specialty insurance, financial and professional lines insurance, and Carbon Syndicate. 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, 2022, 2021 and 2020 and the percentage change in gross written premiums for each line:

Lines of Business	Twelve Months Ended					
	2022		2021		2020	
	(\$ in millions)	% change	(\$ in millions)	% change	(\$ in millions)	
First party and specialty insurance	\$ 741.9	(8.2)%	\$ 807.9	(4.5)%	\$ 846.0	
Casualty and liability insurance	678.6	10.3 %	615.4	19.9 %	513.1	
Financial and professional lines insurance	1,081.2	19.1 %	907.6	32.9 %	683.0	
Carbon Syndicate ⁽¹⁾	30.0	185.7 %	10.5	100.0 %	—	
Total	\$ 2,531.7	8.1 %	\$ 2,341.4	14.7 %	\$ 2,042.1	

⁽¹⁾ Refers to the premium made from an investment in a new start up, Carbon Syndicate 4747.

The decrease in gross written premiums in first party and specialty insurance was largely attributable to our decision to cease underwriting in accident and health and the decision to withdraw from certain first party program business. The increase in gross written premiums in 2022 compared to 2021 in casualty and liability insurance was attributable to strong performance across the retention of existing business, positive rate improvements and new business across our U.S. and U.K. platforms. The increase in gross written premiums in financial and professional lines insurance was largely attributable to new business benefiting from the stronger professional service market, resulting in increased premium on our management and professional liability lines and increase on major programs with strong rate improvements.

Ceded written premiums. Total ceded written premiums for 2022 was \$1,062.1 million, an increase of \$109.4 million from 2021. Ceded written premiums increased primarily within casualty and liability, and financial and professional lines due to increase in gross written premium and consequently increase in the proportion of business ceded to quota share programs.

Net premiums earned. Net premiums earned increased by \$145.2 million, or 11.2%, in 2022 compared to 2021 largely due to increased gross written premium written within the year.

Losses and loss adjustment expenses. The loss ratio in 2022 was 63.3%, a decrease of 13.2 percentage points compared to 76.5% in 2021. This was mainly due to the following:

Current accident year loss ratio for 2022 of 53.0% improved by 4.0 percentage points compared to 2021 due to improved underlying loss experience and improved pricing mainly from our first party and specialty and casualty and liability business lines. Additionally large losses experienced during 2022 included \$31.0 million, comprised of \$9.8 million of terror related losses, \$13.5 million of fire related losses, \$3.8 million of property damage related losses and \$3.9 million related to professional liability related losses. Large losses experienced during 2021 included \$34.6 million, comprised of \$13.7 million of fire related losses, \$5.9 million of property damage related losses, \$6.0 million of terror related losses and \$9.0 million related to cyber-crime.

Catastrophe losses decreased from \$71.7 million in 2021 to \$61.7 million 2022 improving the loss ratio by 1.3 percentage points. In 2022, the net catastrophe losses of \$61.7 million included, \$29.8 million from Hurricane Ian and \$24.4 million from other weather-related events. 2022 also included \$7.5 million of losses from the Russia/Ukraine war. In 2021, the net catastrophe losses of \$71.7 million included \$25.6 million from U.S. winter storm losses, \$23.2 million from Hurricane Ida and \$22.9 million from other weather-related events.

Prior year development on post-LPT years, totaled unfavorable development of \$37.6 million in the current year compared with unfavorable development of \$162.6 million in the twelve months ended December 31, 2021. This reduction in unfavorable development resulted an improvement in loss ratio of 10.0 percentage points.

Impact of LPT included an unfavorable movement of \$49.3 million or 3.4 percentage points in the current period compared with unfavorable development of \$16.9 million in the twelve months ended December 31, 2021. This mainly reflects the one-off costs in relation to the LPT recognized in 2022.

Acquisition, general and administrative expenses. Acquisition costs were \$179.4 million in 2022, equivalent to 12.5% of net premiums earned (2021 — \$192.5 million or 14.9% of net premiums earned). The decrease in the acquisition cost ratio in 2022 compared with 2021 was due to a greater proportion of our business being ceded to Aspen Capital Markets businesses.

Our general and administrative expenses increased by \$32.2 million to \$244.0 million in 2022 from \$211.8 million in 2021. Our general and administrative expense ratio was 17.0% in 2022 compared to 16.4% in 2021 due to increased staff costs, higher professional and consulting fees and additional expenses arising from investment in Carbon Syndicate and organizational change.

Balance Sheet

Total cash and investments

As at December 31, 2022 and December 31, 2021, total cash and investments, including accrued interest receivable were \$7.1 billion and \$7.8 billion, respectively. Total cash and investments decreased mainly due to the decrease in the fair value of investments during the year, resulting from \$391.7 million unrealized losses on available for sale investments, payments of ordinary and preference dividends of \$84.6 million and also due to a decrease in operating cash flow compared to prior year. 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, 2022, a significant majority of funds available for investment were deployed in a widely diversified portfolio of high quality, investment grade securities, including U.S. government, corporate and U.S. agency mortgage-backed bonds. As part of our Strategic Asset Allocation, we also invest a portion of our portfolio in return seeking assets such as unrated private fixed and floating rate investments, and other specialty classes. These securities generally pay a higher rate of interest or return and may have a higher degree of credit or default risk, or less liquidity.

The duration of total fixed income securities (the aggregate of available for sale and trading) as at December 31, 2022 was 3.0 years compared to 3.3 years as at December 31, 2021. In addition, as at December 31, 2022, the average credit rating of these fixed income securities was “AA-,” with 85.4% being rated “A” or higher. The average rating of our mortgage-backed securities was AA+. As at December 31, 2021, the average credit rating of our fixed income securities portfolio was “AA-,” with 90.0% being rated “A” or higher. The average credit rating is calculated using the Bloomberg Barclays Index credit quality methodology.

Our “Managed Portfolio” is comprised of our cash and investments, excluding catastrophe bonds and funds held by variable interest entities. As at December 31, 2022, the Company had a 3.1% allocation to real estate funds and a 6.0% allocation to middle market loans (“MML”) and commercial mortgage loans (“CML”), representing in total 9.1% of our Managed Portfolio. As at December 31, 2021, the Company had a 2.0% allocation to real estate funds and a 3.6% allocation to MML and CML representing in total 5.6% of our Managed Portfolio.

Cumulative unrealized losses in the available for sale investment portfolio, net of taxes, were \$333.2 million as at December 31, 2022, a decrease of \$367.8 million from the net \$34.6 million unrealized gains as at December 31, 2021.

As at December 31, 2022, we had investments in three entities classified as other investments, equity method: a micro-insurance incubator (“MVI”), a multi-line reinsurer (“Multi-line Reinsurer”) and Digital Risk Resources, LLC. During 2022, the Company invested additional capital of \$1.6 million in Multi-line Reinsurer and \$0.4 million in MVI. The aggregate value of these investments as at December 31, 2022, was \$6.2 million (December 31, 2021 — \$3.9 million). For further information regarding these investments, refer to Item 18, Note 4 of our consolidated financial statements, “Investments” for additional details.

As at December 31, 2022, the aggregate current fair value of the real estate funds investments was \$221.3 million (December 31, 2021 — \$151.3 million). For further information regarding these investments, refer to Item 18, Note 4 of our consolidated financial statements, “Investments” for additional details.

The composition of our cash and investments as at December 31, 2022 and 2021 is summarized below:

	As at December 31, 2022		As at December 31, 2021	
	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	\$ 953.0	13.5 %	\$ 1,084.3	13.8 %
U.S. agency	8.8	0.1	21.5	0.3
Municipal	149.5	2.1	82.6	1.1
Corporate	1,845.0	26.2	2,208.3	28.2
Non-U.S. government-backed corporate	110.4	1.6	136.8	1.7
Foreign government	213.6	3.1	250.7	3.2
Asset-backed	—	—	0.5	—
Non-agency commercial mortgage-backed	5.6	0.1	6.9	0.1
Agency mortgage-backed	502.7	7.1	1,090.0	13.9
Total Fixed Income Securities — Available for Sale	\$ 3,788.6	53.8 %	\$ 4,881.6	62.3 %
Fixed Income Securities — Trading				
U.S. government	261.6	3.7 %	116.3	1.5 %
Municipal	3.6	0.1	4.0	0.1
Corporate	162.1	2.3	96.8	1.2
High yield loans	88.3	1.2	76.9	1.0
Non-U.S. government-backed corporate	11.6	0.2	13.1	0.2
Foreign government	30.4	0.4	34.5	0.4
Asset-backed	896.5	12.7	785.7	10.0
Agency mortgage-backed securities	21.4	0.3	30.2	0.4
Total Fixed Income Securities — Trading	\$ 1,475.5	20.9 %	\$ 1,157.5	14.8 %
Total other investments, equity method	6.2	0.1	3.9	0.1
Total other investments ⁽¹⁾	221.3	3.1	151.3	1.9
Total catastrophe bonds — trading	2.9	0.1	3.4	0.1
Privately-held investments — Trading				
Commercial mortgage loans	312.1	4.4	211.5	2.7
Middle market loans	106.9	1.5	65.4	0.8
Asset-backed securities	66.8	0.9	26.6	0.3
Global corporate securities	15.0	0.2	—	—
Equity securities	6.6	0.1	3.6	—
Short-term investments	25.6	0.4	—	—
Total Privately-held investments — Trading	\$ 533.0	7.6 %	\$ 307.1	3.8 %
Total short-term investments — available for sale	52.0	0.7	10.1	0.1
Total short-term investments — trading	6.3	0.1	2.0	0.1
Total cash and cash equivalents	959.2	13.6	1,314.1	16.8
Total Cash and Investments	\$ 7,045.0	100.0 %	\$ 7,831.0	100.0 %
Net receivable for securities sold	\$ 6.6		\$ (25.2)	
Accrued interest receivable	44.9		30.8	
Total Investable Assets	\$ 7,096.5		\$ 7,836.6	

⁽¹⁾ Total other investments represents our investments in real estate funds and other special purpose vehicles. 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, 2022:

	AAA	AA+	Total
	(\$ in millions)		
Agency	\$ —	\$ 524.1	\$ 524.1
Non-agency commercial	—	5.6	5.6
Total mortgage-backed securities	\$ —	\$ 529.7	\$ 529.7

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

As at December 31, 2022, the Company had invested \$6.6 million in equity securities in privately-held investments, as part of the Company's strategic asset allocation (2021 — \$3.6 million). We had no other investments in equity securities as at December 31, 2022 (2021 — no other investments in equity securities).

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, Digital Re and Multi-line Reinsurer 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, Digital Re and Multi-line Reinsurer is subject to annual audit evaluating the financial statements of the entities. We periodically review the management accounts of MVI, Digital Re and Multi-line Reinsurer and evaluate the reasonableness of the valuation of our investment.

Valuation of Other Investments. The Company's other investments represent our investments in real estate funds and other special purpose vehicles. Adjustments to the fair values are made based on the net asset value of the investments. 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 include: the discounted cash flows method and the performance multiple approach, which uses a multiple/capitalization rate derived from market data of 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.

Credit Losses on Available for Sale Debt Securities. Following Aspen's adoption of ASU 2016-13 "*Financial Instruments - Credit Losses (Topic 326)*", effective January 1, 2020, credit losses are recognized through an allowance account for available for sale debt securities, thereby permitting reversals of previously recognized credit losses through net income in the period they occur. Write-offs (of any previously recognized allowance for credit losses) are recorded when amounts are deemed uncollectible, or Aspen intends to sell (or more likely than not will be required to sell) the debt security before recovery of the amortized cost basis. The amortized cost basis will be written down to the debt securities fair value through earnings. Credit losses are limited to the difference between the debt securities amortized cost basis and fair value ("fair-value floor"). Any decline in the debt securities fair value below the amortized cost basis that is not a result of a credit loss is recorded through other comprehensive income, net of applicable taxes.

Our credit loss models employ a discounted cash flow approach to evaluate whether a credit loss exists at the individual security level and are reviewed at each reporting period. This analysis excludes investments in U.S. Government/Agency bonds and U.S. Government Agency mortgage-backed securities due to being of 'high credit quality' based on the absence of risk. Available for sale debt securities that were initially purchased with credit deterioration (PCD), the amortized cost basis shall be considered to be the purchase price, plus any allowance for credit losses. Estimated credit losses shall be discounted at the rate that equates the present value of the purchaser's estimate of the security's future cash flows with the purchase price of the asset.

Holding gains or losses are recognition through other comprehensive income, net of applicable taxes. No changes in the estimate of credit losses have taken place during the period. As at December 31, 2022 we recognized a credit loss provision of \$7.7 million, realizing a loss of \$5.0 million within the twelve months ended December 31, 2022 (2021 — \$2.7 million).

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, 2022, we had total net loss and loss adjustment expense reserves of \$2,813.2 million (December 31, 2021 — \$4,313.7 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 \$7,710.9 million at the balance sheet date of December 31, 2022, a total of \$4,323.1 million, or 56.1%, represented IBNR claims (December 31, 2021 — \$3,962.1 million and 52.1%, respectively). The following tables analyze gross and net loss and loss adjustment expense reserves by business segment as at December 31, 2022 and 2021, respectively:

<u>Business Segment</u>	As at December 31, 2022		
	Gross	Reinsurance Recoverable	Net
	(\$ in millions)		
Reinsurance	\$ 3,350.5	\$ (1,989.8)	\$ 1,360.7
Insurance	4,360.4	(2,907.9)	1,452.5
Total losses and loss expense reserves	<u>\$ 7,710.9</u>	<u>\$ (4,897.7)</u>	<u>\$ 2,813.2</u>

<u>Business Segment</u>	At December 31, 2021		
	Gross	Reinsurance Recoverable	Net
	(\$ in millions)		
Reinsurance	\$ 3,329.1	\$ (1,180.7)	\$ 2,148.4
Insurance	4,282.7	(2,117.4)	2,165.3
Total losses and loss expense reserves	<u>\$ 7,611.8</u>	<u>\$ (3,298.1)</u>	<u>\$ 4,313.7</u>

Within reinsurance recoverables we have recognized \$2,132.0 million of recoverables on the LPT as at December 31, 2022 (December 31, 2021 — \$770.0 million)

The gross reserves may be further analyzed between outstanding claims and IBNR as at December 31, 2022 and 2021 as follows:

	As at December 31, 2022			
	Gross Case Reserves	Gross IBNR	Gross Reserve	% IBNR
	(\$ in millions, except for percentages)			
Reinsurance	\$ 1,750.9	\$ 1,599.6	\$ 3,350.5	47.7 %
Insurance	1,636.9	2,723.5	4,360.4	62.5 %
Total losses and loss expense reserves	<u>\$ 3,387.8</u>	<u>\$ 4,323.1</u>	<u>\$ 7,710.9</u>	56.1 %

	As at December 31, 2021			
	Gross Case Reserves	Gross IBNR	Gross Reserve	% IBNR
	(\$ in millions, except for percentages)			
Reinsurance	\$ 1,785.4	\$ 1,543.7	\$ 3,329.1	46.4 %
Insurance	1,864.3	2,418.4	4,282.7	56.5 %
Total losses and loss expense reserves	<u>\$ 3,649.7</u>	<u>\$ 3,962.1</u>	<u>\$ 7,611.8</u>	<u>52.1 %</u>

Prior year loss reserves. For the twelve months ended December 31, 2022, there was an overall (decrease) in our estimate of ultimate net claims to be paid in respect of prior accident years. An analysis of this overall net increase/(decrease) by business segment is as follows for each of the twelve months ended December 31, 2022, 2021 and 2020:

Business Segment	For the Twelve Months Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	(\$ in millions)		
Reinsurance	\$ 58.8	\$ 134.4	\$ 36.1
Insurance	(86.9)	(179.5)	(35.2)
Total losses and loss expense reserves changes	<u>\$ (28.1)</u>	<u>\$ (45.1)</u>	<u>\$ 0.9</u>

For the twelve months ended December 31, 2022. The analysis of the development by each segment is as follows:

Reinsurance. Net reserve releases of \$58.8 million in 2022, primarily from favorable reserve development on accident years 2020 and 2021 of \$24.6 million on casualty reinsurance and other property reinsurance lines and the favorable impact of the LPT of \$34.2 million.

Insurance. Net unfavorable reserve development of \$86.9 million in 2022, mainly due to adverse prior year development on accident years 2020 and 2021 within international marine and energy liability, U.S. management and professional liability and excess and U.S. casualty of \$37.6 million and the unfavorable movement of \$49.3 million due to the impact of the LPT, mainly reflecting the one-off costs in relation to the LPT recognized in 2022.

For the twelve months ended December 31, 2021. The analysis of the development by each segment is as follows:

Reinsurance. Net reserve releases of \$134.4 million in 2021 were mainly due to releases on casualty reinsurance and specialty reinsurance.

Insurance. Net unfavorable reserve development of \$179.5 million in 2021 was primarily from casualty insurance lines and first party specialty lines.

We did not make any significant changes in methodologies used in our reserving process between 2021 and 2022.

Reinsurance Premiums Payable

Reinsurance Premiums Payable. As at December 31, 2022, we had reinsurance premiums payables totaling \$1,980.1 million compared to \$575.7 million at December 31, 2021, an increase of \$1,404.4 million, primarily driven by the premium payable on the LPT transaction with Enstar.

Critical Accounting Policies

We believe that the following are critical accounting policies 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 \$294.9 million in gross written premium in 2022 (2021 — \$319.6 million), or 16.3% of the gross written premiums in our reinsurance segment, of which \$22.4 million was estimated (2021 — \$31.3 million) and \$272.5 million was reported by the cedants (2021 — \$288.3 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, 2022 (2021 — \$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.

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.

Accounting for retroactive reinsurance agreements. Retroactive reinsurance agreements are reinsurance agreements under which a reinsurer agrees to reimburse the Company as a result of past insurable events. For these agreements, the excess of the amounts ultimately collectible under the agreement over the consideration paid is recognized as a deferred gain liability which is amortized into income over the settlement period of the ceded reserves once the paid losses have exceeded the minimum retention. The amount of the deferral is recalculated each period based on actual loss payments and updated estimates of ultimate losses. If the consideration paid exceeds the ultimate losses collectible under the agreement, the net loss on the retroactive reinsurance agreement is recognized within income immediately.

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.

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 and capital 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 claims settlements, any future debt service payments and other expenses, and to pay dividends, if any, to our preference and ordinary shareholders.

As at December 31, 2022, Aspen Holdings held \$84.9 million (December 31, 2021 — \$87.5 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 planned and expected liquidity requirements of Aspen Holdings during 2023 and in light of liquidity projections for the period thereafter. 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 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. 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, 2022, the Operating Subsidiaries held \$869.1 million (December 31, 2021 — \$1,156.8 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, 2022 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. 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, 2022 and December 31, 2021:

	As at December 31, 2022	At December 31, 2021
	(\$ in millions, except percentages)	
Regulatory trusts and deposits:		
Affiliated transactions	\$ 707.1	\$ 891.3
Third party	2,817.7	3,099.7
Letters of credit / guarantees	471.3	539.8
Total restricted assets (excluding illiquid assets)	3,996.1	4,530.8
Other investments — illiquid assets	221.3	151.3
Total restricted assets and illiquid assets	\$ 4,217.4	\$ 4,682.1
Total as percent of cash and invested assets	59.4 %	59.7 %

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, 2022. Total net cash flow used in operations for the twelve months ended December 31, 2022 was \$55.0 million, a \$579.5 million decrease in cash flow from the equivalent period in 2021. The decrease in cash generated through operating activities was mainly due to an increase in reinsurance recoverables, for payments made on gross claims and not yet collected from the reinsurer, and the repayment of our credit facility. We paid net claims of \$1,291.1 million in 2022 and utilized cash of \$196.5 million for investing during the period.

Cash flow from financing activities were an outflow of \$84.6 million, due to the payment of ordinary and preference share dividends of \$84.6 million. At December 31, 2022, we had a balance of cash and cash equivalents of \$959.2 million.

Consolidated cash flows for the twelve months ended December 31, 2021. Total net cash flow used in operations for the twelve months ended December 31, 2021 was \$524.7 million, a \$1,197.4 million increase in cash used from the equivalent period in 2020. The increase in cash used in operations for the twelve months ended December 31, 2021 was mainly attributable the purchase of the adverse development cover. For the twelve months ended December 31, 2021, the cash flows used in operations required funds to be realized from the investment portfolio. We paid net claims of \$1,309.8 million in 2021, and generated cash inflows of \$950.3 million from investing during the period.

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, sufficient to address such capital requirements during 2023 and in light of projected capital requirements for the period thereafter. We monitor and review the Aspen Group and the Operating Entities' capital and liquidity positions on an ongoing basis. The following table shows our capital structures as at December 31, 2022 compared to December 31, 2021:

	As at December 31, 2022	At December 31, 2021
	(\$ in millions)	
Share capital, additional paid-in capital, retained income and accumulated other comprehensive income attributable to ordinary shareholders	\$ 1,604.5	\$ 2,021.3
Preference shares (liquidation preferences net of issue costs)	753.5	753.5
Short-term debt (2021: (Long-term debt))	299.9	299.9
Total capital	<u>\$ 2,657.9</u>	<u>\$ 3,074.7</u>

As at December 31, 2022, total shareholders' equity was \$2,358.0 million compared to \$2,774.8 million as at December 31, 2021. Our total shareholders' equity as at December 31, 2022 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, 2021 — \$753.5 million, three 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 39.6% as of December 31, 2022 (December 31, 2021 — 34.3%). Total capital is defined as being shareholders' equity plus outstanding debt and excluding loan notes issued by variable interest entities.

As at December 31, 2022, Aspen Holdings' material debt outstanding was our 2023 Senior Notes. As at December 31, 2022 and 2021, the value of debt less amortization expenses was \$299.9 million and \$299.9 million, respectively.

Management monitors the ratio of debt to total capital which was 11.3% as at December 31, 2022 (December 31, 2021 — 9.8%).

There were no principal capital management transactions during 2022.

The principal capital management transaction during 2021 was as follows:

- During the fourth quarter of 2021, our parent company Highlands Bermuda Holdco, Ltd. contributed additional capital totaling \$45.0 million.

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 \$2,358.0 million as at December 31, 2022 (December 31, 2021 — \$2,774.8 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 Short-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

During 2022, and into 2023, the (re)insurance market has experienced significant rate increases across a number of classes of business. Underlying underwriting conditions, including increased natural catastrophe activity and sustained higher inflation, alongside tighter (re)insurance capacity, means we expect insurance pricing to remain favorable. We believe Aspen is well placed to take advantage of the current market environment. We have proactively managed our business to reduce volatility and our underwriting portfolio is well diversified by class and geography, supported by a strong capital position and a clear focus on cost management and operational efficiency. We remain focused on sustainable growth, optimizing our underwriting returns and prudentially managing catastrophe risk.

Although higher interest rates have resulted in unrealized mark-to-market losses, we expect to see increased investment income from our investment portfolio, the majority of which is in credit, while also anticipating that these mark-to-market losses will reverse as securities reach maturity.

Inflation, climate change and exposure to man-made events are expected to continue to impact global insurance markets. Refer to Item 3D, “Risk Factors” and “Cautionary Statement Regarding Forward-Looking Statements” included in this report.

E. Critical Accounting Estimates

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 estimates are the most significant estimates used in the preparation of our consolidated financial statements.

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 IBNR claims. 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”).

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 a class of business 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, 2022.

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 central estimate (“ultimate”) for each class 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 heightened 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.

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. The Reserve Committee signs off on the group-level reserves, which reflects, amongst other matters, key areas of reserving uncertainty within the group actuarial central estimate and levels of uncertainty are

factored into the management best estimate, which provides the basis for management's recommendation to the Audit Committee and the Board regarding the reserve amounts to be recorded in the financial statements.

As at December 31, 2022, the Reserve Committee was chaired by the Group Chief Actuarial Officer and its membership includes members of senior management from various functions of the business.

Each significant 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, which has risen rapidly in recent months;
- changes in the mix of business;
- the impact of large losses; and
- changes in our cedants' reserving methodologies.

These factors are incorporated in the management's best estimate of reserves. 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, 2022, a 5% change in the gross reserve for IBNR losses would have equated to a change of approximately \$216.2 million (2021 — \$198.1 million) in loss reserves.

A 5% change in our net loss reserves equates to \$140.7 million and represents 6.0% of shareholders' equity as at December 31, 2022.

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 result of bottom up analysis by accident year reflecting the impact of parameter uncertainty in actuarial calculations, and (ii) specific qualitative information on events that may have an effect on future claims development 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.

Management's best estimate of the net reserve for losses and loss expenses as at December 31, 2022 was \$2,813.2 million. The following tables show the effect on estimated net reserves for losses and loss expenses as at December 31, 2022 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. Accelerated loss emergence patterns indicates a higher development percentage of losses, therefore requiring lower IBNR than previously expected and hence resulting in a lower ultimate.

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, 2022 — Sensitivity to loss emergence patterns

Change in assumption	Reserve for losses and loss expenses (\$ in millions)
Six month acceleration	\$ 2,586.0
Three month acceleration	\$ 2,690.7
No change (selected)	\$ 2,813.2
Three month deceleration	\$ 2,951.7
Six month deceleration	\$ 3,129.2

Net reserve for losses and loss expenses as at December 31, 2022 — Sensitivity to expected loss ratios

Change in assumption	Reserve for losses and loss expenses (\$ in millions)
10% favorable	\$ 2,544.0
5% favorable	\$ 2,678.6
No change (selected)	\$ 2,813.2
5% unfavorable	\$ 2,947.8
10% unfavorable	\$ 3,082.4

The most significant variance in the above scenarios (i.e., a 10% unfavorable movement in expected loss ratios) would have the effect of increasing losses and loss expenses by \$269.2 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.

Recoverability of Deferred Tax Asset

The U.S. deferred tax benefit recognized in 2022 of \$102.9 million was mainly due to a change in judgment about the realizability of the deferred tax asset in the U.S. operating subsidiaries. In assessing recoverability of deferred tax assets, and the recognition/de-recognition of associated valuation allowances, the Company considered a number of factors that required significant judgement, such as successive years of achieving three-year cumulative net taxable income, recent operating trends, growth and profitability forecasts, premium and investment return assumptions, etc. when making its determination. Management believe that the deferred tax assets of our U.S. operating subsidiaries will more likely than not be fully utilized over time, and therefore the previously recognized valuation allowance in relation to U.S. operating subsidiaries has been reversed in 2022.

Valuation of Investments Measured Using Significant Unobservable Inputs

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.

The Company considers prices for actively traded securities to be derived based on quoted prices in an active market for identical assets.

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.

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. Unobservable inputs are assumptions used by the Company using the best available information at the time of making these valuation assumptions. Level 3 financial instruments have the least use of observable market inputs used to determine fair

value. As at December 31, 2022, the Company classified privately-held investments of \$533.0 million as Level 3 as a result of significant unobservable inputs used to determine fair value (2021 — \$307.1 million).

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 Company's other investments represent our investments in real estate funds and other special purpose vehicles. Adjustments to the fair values are made based on the net asset value of the investments. 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 include: the discounted cash flows method and the performance multiple approach, which uses a multiple derived from market data of comparable companies or assets to produce operating performance metrics. Alternative valuation methodologies may be employed for investments with unusual characteristics.

See also Quantitative and Qualitative disclosures about Market Risk in Item 11 of this report for further details on interest rate and credit spread risk and a sensitivity analysis of interest rate on the valuation of the Company's investment.

F. Tabular Disclosure of Obligations

The following table summarizes our obligations (other than our obligations to employees) under short-term debt, operating leases (net of subleases) and reserves relating to insurance and reinsurance contracts as at December 31, 2022:

	2023	2024	2025	2026	2027	Later Years	Total
	(\$ in millions)						
Operating lease obligations	\$ 15.4	\$ 15.2	\$ 14.9	\$ 14.1	\$ 12.6	\$ 47.2	\$ 119.4
Short-term debt obligations	300.0	—	—	—	—	—	300.0
Annual interest payments on Short-term debt obligations	14.3	—	—	—	—	—	14.3
Preference share dividends ⁽¹⁾	44.6	44.6	44.6	44.6	44.6	44.6	267.6
Reserves for losses and LAE ⁽²⁾	2,218.5	1,471.5	1,018.6	741.6	537.1	1,723.6	7,710.9
Total	<u>\$ 2,592.8</u>	<u>\$ 1,531.3</u>	<u>\$ 1,078.1</u>	<u>\$ 800.3</u>	<u>\$ 594.3</u>	<u>\$ 1,815.4</u>	<u>\$ 8,412.2</u>

⁽¹⁾ The Company is contractually obliged to pay preference share dividends in future years.

⁽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 actuarial 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.

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

- Our exposure to weather-related natural catastrophes, other natural disasters and other catastrophe events and the impact such events may have on our operating results;
- Our, and our customers’, exposure to war and other man-made events, including the war in Ukraine, and the impact it may have on our operations and operating results;
- The impact of global climate change, governmental and societal responses to climate change and the shift to a lower carbon economy;
- Our relationship with, and reliance upon, a limited number of brokers for both our insurance and reinsurance business;
- The performance of our investment portfolio, particularly in a rising interest rate environment;
- The impact of inflation, changes in interest rates, and other macroeconomic factors on our business and the businesses of our customers, business partners, and counterparties;
- The cyclical nature of the insurance and reinsurance industries, which we may not be able to predict accurately;
- Limitations in our ability, and the ability of third parties upon which we rely, to accurately price risk;
- Potential disruptions to our ability to access reinsurance on reasonable terms, or at all; and
- The impact of the LPT transaction on our business and operating results.

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 other 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

Economic inflation has increased in recent quarters and there is a risk of inflation remaining elevated for an extended period, which could further increase claims and claim expenses, impact the performance of our investment portfolio or have other adverse effects. The onset, duration and severity of an inflationary period cannot be estimated with precision.

The potential exists after a catastrophe or other large property loss, such as hurricanes, 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. In addition, this risk may be exacerbated by the steps taken by governments and central banks throughout the world in responding to the COVID-19 pandemic and any future pandemics, the impact from the war in Ukraine, global supply chain issues, and, more recently, market instability resulting from the stress on the international financial services industry.

The anticipated effects of inflation are considered in our pricing models, reserving processes and exposure management, across all lines of business and types of loss, including natural catastrophe events, and this includes assumptions about future payments for settlement of claims and claims-handling expenses. 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 the current and potential future increase in inflation on our results cannot be accurately known until, among other items, claims are ultimately settled.

In addition to general price inflation, social inflation has increased, and, accordingly, we may be 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 our lines of business, notably 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. A potentially prolonged high inflationary environment poses a risk to the performance of our investment portfolio or have other adverse effects. In particular, rising inflation, interest rates and bond yields may result 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 and also to “Risk Factors — Market and Liquidity Risks — “We may be adversely impacted by economic inflation and social inflation.”

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

In presenting Aspen’s results, management has included and discussed certain measurements that are considered “non-GAAP financial measures” under SEC rules and regulations. Management believes that these non-GAAP financial measures, which may be defined differently by other companies, help explain and enhance the understanding of Aspen’s results of operations. 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 quarterly 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, 2022	As at December 31, 2021
	(\$ in millions)	
Total shareholders’ equity	\$ 2,358.0	\$ 2,774.8
Preference shares less issue expenses	(753.5)	(753.5)
Closing equity	1,604.5	2,021.3
Average adjustment	101.5	55.2
Average equity	<u>\$ 1,706.0</u>	<u>\$ 2,076.5</u>
Net income after tax as reported	51.1	29.8
Preference share dividends	(44.6)	(44.5)
Net income/(loss) available to ordinary shareholders	6.5	(14.7)
Net income/(loss), adjusted for preference share dividends, on average equity	0.4 %	(0.7)%
Net income/(loss), adjusted for preference share dividends, on closing equity	0.4 %	(0.7)%

Loss Ratio is the sum of current year net losses, catastrophe losses and prior year reserve strengthening/(releases) as a percentage of net earned premiums.

Current accident year loss ratio is a non-GAAP financial measure. Current accident year loss ratio is calculated by dividing net losses excluding prior accident year reserve movements by net earned premiums.

Operating income is a non-GAAP financial measure. Operating income is an internal performance measure used by Aspen in the management of its operations and represents after-tax operating results. Operating income includes an adjustment for the change in deferred gain on retroactive reinsurance contracts in order to economically match the loss recoveries under the adverse development cover (“ADC”)/loss portfolio transfer (“LPT”) contracts with the underlying loss development of the assumed net loss reserves for the subject business of 2019 and prior accident years. Operating income also excludes certain costs related to the LPT contract with Enstar that closed in the second quarter of 2022, net foreign exchange gains or losses, including net realized and unrealized gains and losses from foreign exchange contracts, net realized gains or losses on investments and non-operating expenses and income.

Aspen excludes the items above from its calculation of operating income because they are not reflective of underlying performance or the amount of these gains or losses is heavily influenced by, and fluctuates according to prevailing investment market and interest rate movements. Aspen believes these amounts are either largely independent of its business and

underwriting process, not aligned with the economics of transactions undertaken, or including them, would distort the analysis of trends in its operations. In addition to presenting net income determined in accordance with GAAP, Aspen believes that showing operating income enables users of its financial information to more easily analyze Aspen's results of operations in a manner similar to how management analyzes Aspen's underlying business performance. Operating income should not be viewed as a substitute for GAAP net income.

Operating Income Reconciliation	Twelve Months Ended December 31, 2022		Twelve Months Ended December 31, 2021	
	(\$ in millions)			
Net income as reported	\$	51.1	\$	29.8
Preference share dividends		(44.6)		(44.5)
Net gain/(loss) attributable to ordinary shareholders		6.5		(14.7)
Add/(deduct) before tax				
Net foreign exchange losses/(gains)		64.6		(4.1)
Net realized and unrealized investment losses/(gains)		177.6		(8.8)
Non-operating expenses		36.0		20.6
Add change in deferred gain on retroactive reinsurance contracts, net of certain costs related to the LPT contract with Enstar		22.8		58.3
Non-operating income tax (benefit)		(105.2)		(0.7)
Operating income	\$	202.3	\$	50.6

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

Retention ratio	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	Reinsurance	Insurance	Total	Reinsurance	Insurance	Total
	(\$ in millions)			(\$ in millions)		
Gross written premium	\$ 1,807.0	\$ 2,531.7	\$ 4,338.7	\$ 1,597.0	\$ 2,341.4	\$ 3,938.4
Net written premium	\$ 1,426.4	\$ 1,469.6	\$ 2,896.0	\$ 1,199.0	\$ 1,388.7	\$ 2,587.7
Retention ratio	78.9 %	58.0 %	66.7 %	75.1 %	59.3 %	65.7 %

General Insurance:

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

Adjusted underwriting income or loss is the underwriting profit or loss adjusted for the change in deferred gain on retroactive reinsurance contracts in order to economically match the loss recoveries under the adverse development cover ("ADC")/loss portfolio transfer ("LPT") contracts with the underlying loss development of the assumed net loss reserves for the subject business of 2019 and prior accident years. Adjusted underwriting income or loss also excludes certain costs related to the LPT contract with Enstar that closed in the second quarter of 2022. Adjusted underwriting income represents the performance of our business for accident years 2020 onwards, which reflects the underlying underwriting performance of the ongoing portfolio.

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 profit and a combined ratio of over 100 indicates an underwriting loss.

Combined ratio is the sum of the loss ratio and general and administrative expense ratio. The loss ratio is calculated by dividing losses and loss adjustment expenses by net earned premiums. The expense ratio is calculated by dividing the sum of acquisition costs and general and administrative expenses, by net earned premiums.

Adjusted combined ratio is the sum of the adjusted loss ratio and the expense ratio. The adjusted loss ratio is calculated by dividing the adjusted losses and loss adjustment expenses by net earned premiums. The expense ratio is calculated by dividing the sum of acquisition costs and general and administrative expenses, by net earned premium.

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.

Adjusted Combined Ratio (in US\$ millions except where stated)	Twelve Months Ended December 31, 2022		
	Reinsurance	Insurance	Total
Net earned premium	\$ 1,251.8	\$ 1,436.9	\$ 2,688.7
Losses and loss adjustment expenses	770.3	909.7	1,680.0
Acquisition costs	252.4	179.4	431.8
General and administrative expenses	142.5	244.0	386.5
Underwriting expenses	1,165.2	1,333.1	2,498.3
Underwriting income	86.6	103.8	190.4
Combined ratio	93.1 %	92.8 %	93.0 %
Adjustments to underwriting expenses			
Add: movement in deferred gain on retroactive contracts and the LPT impact ⁽¹⁾	34.2	(49.3)	(15.1)
Adjusted underwriting expenses	1,199.4	1,283.8	2,483.2
Adjusted underwriting income	52.4	153.1	205.5
Adjusted combined ratio	95.8 %	89.3 %	92.4 %

Adjusted Combined Ratio (in US\$ millions except where stated)	Twelve Months Ended December 31, 2021		
	Reinsurance	Insurance	Total
Net earned premium	\$ 1,118.8	\$ 1,291.7	\$ 2,410.5
Losses and loss adjustment expenses	705.2	988.1	1,693.3
Acquisition costs	221.6	192.5	414.1
General and administrative expenses	121.3	211.8	333.1
Underwriting expenses	1,048.1	1,392.4	2,440.5
Underwriting income/(loss)	70.7	(100.7)	(30.0)
Combined ratio	93.6 %	107.8 %	101.2 %
Adjustments to underwriting expenses			
Add: movement in deferred gain on retroactive contracts	(41.4)	(16.9)	(58.3)
Adjusted underwriting expenses	1,006.7	1,375.5	2,382.2
Adjusted underwriting income/(loss)	112.1	(83.8)	28.3
Adjusted combined ratio	90.0 %	106.5 %	98.8 %

⁽¹⁾ The adjustment in 2022 removes the impact of the change in the deferred gain on retroactive reinsurance contracts to recognize the full economic benefit arising from these contracts and excludes the one-time costs related to the LPT contract with Enstar.

Item 6. Directors, Senior Management and Employees

A. Directors and Executive Officers

The following are the directors and executive officers (as contemplated by SEC rules and regulations) of the Company as of the date of this report.

<u>Name</u>	<u>Position with the Company</u>	<u>Date Appointed to Role</u>
Directors		
Mark Cloutier	Group Chief Executive Officer, Executive Chairman of the Board and Chair of the Risk Committee	February 2019
David Altmaier *	Director	March 2023
Albert J. Beer *	Director, Member of Audit, Conflicts, Investment and Risk Committees	July 2019 ⁽¹⁾
Joshua Black ^	Director	February 2019
Theresa Froehlich *	Director, Chair of Conflicts Committee, Member of Risk Committee	June 2020
Alex Humphreys ^	Director, Member of Risk and Investment Committees	February 2019
Richard Lightowler *	Director, Chair of Audit Committee, Member of Conflicts Committee	December 2020
Gernot Lohr ^	Director	February 2019
Tammy L. Richardson-Augustus *	Director, Chair of Investment Committee	March 2021
Michael Saffer ^	Director, Member of Risk Committee	February 2019
Executive Officers		
Mark Cloutier	Group Chief Executive Officer and Executive Chairman of the Board	February 2019
David Amaro	Group General Counsel & Company Secretary	January 2023
Christopher Coleman	Group Chief Financial Officer	October 2021
Christian Dunleavy	Group Chief Underwriting Officer & Chief Underwriting Officer, Reinsurance	January 2022
Bruce Eisler	Chief Underwriting Officer - Insurance	June 2020
Rob Houghton	Group Chief Operating Officer	January 2022
Aileen Mathieson	Group Chief Investment Officer	November 2021
Mark Pickering	Group Chief Capital Management Officer & Group Treasurer	September 2015
Brian Tobben	Chief Executive Officer of Aspen Capital Partners	May 2021

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

* Independent, Non-Executive Director

^ Non-Executive Director

Biographical information

Directors:

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

Mark 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, a Lloyd's of London insurer, since January 2017 and prior to this, he was Chief Executive Officer of the Brit Group from October 2011 following its acquisition by Apollo and certain other private equity firms. As Chief Executive Officer of the Brit Group, 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 Partner Re and President of E.W. Blanch Insurance Services Inc. He had been a member of the Franchise Board and Audit Committee of the Society of Lloyd's between February 2015 and June 2020 and was appointed to the Nomination and Governance Committee in February 2017. Mark 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.

- **David Altmaier, Independent Director**

David Altmaier was appointed to the Board on March 7, 2023. David was previously the Commissioner of Insurance for the State of Florida. In this role, Mr. Altmaier led the Office of Insurance Regulation ("OIR") and worked to cultivate a market in Florida in which insurance products are reliable, available, and affordable. David started at the OIR in 2008, serving in a number of increasingly senior roles, including as Director of Property & Casualty Financial Oversight and, prior to assuming the role of Commissioner, as Deputy Commissioner of Property and Casualty Insurance.

Amongst other market leadership roles, Mr. Altmaier is a member of Florida's Blockchain Task Force and, during the COVID-19 pandemic, was selected as a member of Florida's Re-Open Florida Task Force Industry Working Group on Agriculture, Finance, Government, Healthcare, Management and Professional Services.

Mr. Altmaier has also held multiple leadership positions within The National Association of Insurance Commissioners, most recently as President.

- **Albert J. Beer, Independent Director and Member of the Audit, Conflicts, Investment 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 Executive 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**

Mr. Black is a Partner 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, Mr. Black was a member of the Leveraged Finance Product Group at Goldman Sachs & Co., having worked previously in the Financial Institutions Industry Group.

Mr. Black currently sits on the board of Liquidity Capital, Huddle House, Volotea, Somerset Partners, Augustus Specialty, Pacific Quick Serve (BK Franchisee), and ESW. Mr. Black previously served on the board of Exela Technologies Inc., Sun Country Airlines and Tegra.

Mr. Black graduated cum laude from Princeton University with a B.A. in Religion.

- **Theresa Froehlich, Independent Director, Chair of the Conflicts Committee and Member of the Risk Committee**

Ms. Froehlich has been a director of the Company since June 11, 2020. She has over 25 years of management experience in the financial services industry. From 2010 to 2016, Ms. Froehlich held senior roles at the specialist Lloyd's of London insurance and reinsurance marketplace, including interim director of performance management, where she was responsible for all commercial aspects of oversight of the marketplace and setting underwriting standards, and also head of underwriting performance. Before Lloyd's, she worked in Zurich as a Managing Director for Swiss Re in various roles. Having started there in private equity, she later took on senior management roles which included portfolio management of structured reinsurance products, driving transformation and strategic initiatives and serving as the Head of Transactions UK at Admin Re.

She currently serves as a Non-executive Director of Aegon U.K. PLC and other companies in that group and as a Non-executive Director and Chair of the Audit Committee of Managing Agency Partners Ltd since 2017. She formerly served as a Non-executive Director of Starr International Europe Limited and Starr Managing Agents Limited from 2017-2020 where she chaired the Remuneration Committee and was a member of the Audit and Risk Committees. In addition, Ms. Froehlich has served as the Chair of Aspen Insurance U.K. Limited since November 2019 and as a Non-executive Director of Aspen Managing Agency Limited, where she chaired the Risk Committee from November 2019 to June 2022 and the Board since November 2021. Ms. Froehlich started her career as a commercial solicitor in Scotland before moving into M&A and structured finance.

- **Alex Humphreys, Director and Member of the Risk Committee and Investment Committee**

Mr. Humphreys is a Partner at Apollo, which he joined in 2008. Prior to this, Mr. Humphreys worked at Goldman Sachs in its 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., and Miller Homes. He previously served on the board of directors of HD Finance Holdings Limited (parent of Haydock Finance Holdings Limited), Latecoere S.A., Seguradoras Unidas S.A. (parent of Tranquilidade), Luminescence Cooperatief U.A., 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 Risk Committee.

- **Richard Lightowler, Independent Director, Chair of the Audit Committee and Member of the Conflicts Committee**

Mr. Lightowler has over 25 years' experience in financial services public accounting focused on reinsurance and insurance clients, including non-life and life, primary and reinsurance, run off as well as specialized risk vehicles. He was a Partner with KPMG from 1998 to 2016, where he spent over 16 years serving as global lead audit partner for reinsurance groups listed on the New York and London Stock Exchanges. Mr. Lightowler also served as Head of the KPMG Bermuda Insurance Practice.

He has significant private and public equity and debt offering experience and has worked on many cross-border mergers and acquisitions including Buy-side/Sellside due diligence, structuring and post-acquisition integration. Mr. Lightowler is currently a Non-Executive Director of Hansa Investment Company Limited, Geneva Re Limited, Oakley Capital Investments Limited.

Mr. Lightowler was appointed as a Director of the Board on December 10, 2020.

- **Gernot Lohr, Director**

Mr. Lohr is a Partner and Co-Chair of the Global Financial Institutions Group at Apollo, which he joined in May 2007. Prior to joining Apollo, Mr. Lohr was 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 and also worked at McKinsey & Company and B. Metzler Corporate Finance in Frankfurt.

Currently, Mr. Lohr serves on the board of directors of Athene Holding Ltd., Athora Holding, Ltd. and Catalina Holdings. Mr. Lohr has previously served on the board of directors of Oldenburgische Landesbank, Seguradoras Unidas, S.A. (f/k/a Companhia de Seguros Tranquilidade, S.A.), Amissima Vita S.p.A., Amissima Assicurazioni S.p.A., Nova Kreditna banka Maribor d.d. and KBS Banka d.d.

Mr. Lohr has a joint Master's Degree in Economics and Engineering from the University of Karlsruhe, Germany, and received a Masters in Business Administration from the MIT Sloan School of Management.

- **Tammy L. Richardson-Augustus, Independent Director and Chair of the Investment Committee**

Ms. Richardson-Augustus has 25 years of legal experience and since 2007 has been a partner and a member of the Bermuda corporate department of Appleby, a leading global provider of offshore legal and fiduciary services. Ms. Richardson-Augustus provides transactional and corporate governance advice to corporate clients (including but not limited to developing a framework of prudent and effective policies for board committees). Ms. Richardson-Augustus maintains a diversified business transactions practice, with emphasis on domestic and international mergers and acquisitions, joint ventures, capital markets and securities, secured and unsecured lending transactions and general corporate governance matters. She has extensive experience working with clients in a wide range of industries, including in energy, oil and gas exploration, and maritime shipping. Ms. Richardson-Augustus currently serves on numerous boards including, inter alia, on the regulatory board (Bermuda Monetary Authority), statutory board (Bermuda Deposit Insurance Corporation) and on the board of Polaris (a company listed on the Bermuda stock exchange) and is a member of the Bermuda Bar Association and is a justice of the peace.

In addition to being a member of the Aspen Board as a Non-Executive Director, Ms. Richardson-Augustus is the chair of Aspen's Investment Committee.

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

Mr. Saffer is a Principal in the London Private Equity team at Apollo, having joined in 2015. Prior to joining Apollo, he was a member of the M&A group at Credit Suisse in London. Mr. Saffer has been involved in various private equity transactions including the acquisition of Oldenburgische Landesbank (formerly known as Bremer Kreditbank AG), Catalina Holdings (Bermuda) Ltd., Aspen Insurance Holdings Limited, Lottomatica S.p.A. (f/k/a Gamenet Group S.p.A.) and Covis Group S.a.r.l. by investment funds affiliated with Apollo. Mr. Saffer was appointed as a Director of the Board on February 15, 2019 and is also a member of the boards of Covis Group S.a.r.l. and Lottomatica S.p.A. (f/k/a Gamenet Group S.p.A.).

Mr. Saffer graduated from the University of Nottingham with a BSc in Economics.

Senior Management

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

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

- **David Amaro, Group General Counsel & Company Secretary**

Mr. Amaro was appointed as Group General Counsel & Company Secretary as of January 1, 2023. He joined Aspen in July 2021 as General Counsel of Aspen Bermuda and assumed the role of Group Head of Legal & Company Secretary as of January 2022. Before joining Aspen, Mr. Amaro spent seven years with Hamilton Insurance Group and Hamilton Re, most recently, until June 2021 as Vice President and Associate General Counsel for Hamilton Re. Prior to that, he was an in-house solicitor with Ark Syndicate Management in London, having previously completed his training contract at Clyde & Co LLP's London office. Mr. Amaro is a member of the Group Executive Committee and the Executive Committee of Aspen Bermuda.

David is a member in good standing of the Bermuda Bar Association and the Law Society of England & Wales.

- **Christopher Coleman, Group Chief Financial Officer**

Christopher (Chris) Coleman was appointed Group Chief Financial Officer, effective October 19, 2021. Mr. Coleman was most recently CFO of Third Point Re until its merger with Sirius Group. Mr. Coleman has strong transaction and capital markets experience, including the recent acquisition of Sirius Group by Third Point Re, Third Point Re's IPO as well as having had key roles in a number of other merger, debt and equity transactions during his career. Mr. Coleman also

served as CFO of Alterra Bermuda Limited, was Chief Accounting Officer for Harbor Point Limited and held a senior audit manager role with PwC.

- **Christian Dunleavy, Group Chief Underwriting Officer, Chief Underwriting Officer - Reinsurance**

Christian Dunleavy was appointed Group Chief Underwriting Officer on January 1, 2022, also serving as Chief Underwriting Officer - Reinsurance since December 2023, having also previously served in this role. Mr. Dunleavy is also the Chief Underwriting Officer of Aspen Bermuda, to which he was appointed in May 2017. He serves as a director of Aspen Bermuda. Mr. Dunleavy also previously served as Chief Underwriting Officer of Aspen Re and CEO of Aspen Bermuda.

Mr. Dunleavy joined Aspen in 2015 as Head of Global Property Catastrophe. He had previously been at Axis Re 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, Christian was a Senior Analyst at RenaissanceRe, responsible for multiperil modeling, pricing and portfolio analysis. Christian is a Director of the Association of Bermuda International Companies, Association of Bermuda Insurers and Reinsurers and an Independent Director of CG Insurance Group.

- **Bruce Eisler, Chief Underwriting Officer, Aspen Insurance**

Bruce Eisler was appointed Chief Executive Officer U.S. and Chief Underwriting Officer, Aspen Insurance in June 2020. Mr. Eisler has held various senior level roles with Reliance National, ACE USA and Liberty International Underwriters — part of Liberty Mutual Group — where he was the Senior Vice President of Professional Liability Underwriting before joining Aspen in January 2010.

- **Rob Houghton, Group Chief Operating Officer**

Rob Houghton joined Aspen as Group Chief Operating Officer in January 2022. In his role, he oversees Aspen's group operations and IT strategy. Rob joined from MS Amlin, where he was Group COO and, more recently, MS Amlin Business Services CEO. Rob has more than 20 years of operations, IT and transformation experience across a range of sectors, including strong insurance experience.

Mr. Houghton has lived and operated on a global basis with recent experience across North America and Europe.

- **Aileen Mathieson, Group Chief Investment Officer**

Aileen Mathieson joined Aspen in November 2021, as the Group Chief Investment Officer and is based in the London office. She brings more than 15 years of investment and financial experience, and previously served at Aberdeen Standard Investments where she was Global Head of Insurance.

Prior to this, Ms. Mathieson was CIO, UK Life for Zurich and during her career also held senior finance roles at Nucleus Financial Group plc, Standard Life Group, Diageo plc and EMI Music. Aileen started her career at KPMG.

- **Mark Pickering, Group Chief Capital Management Officer & Group Treasurer**

Mark Pickering has 20 years of experience in the (re)insurance industry. He was appointed as Group Treasurer in September 2015 and subsequently also appointed as Group Chief Capital Management Officer in 2021. In addition, he also assumed the role of Chief Executive Officer of Aspen Bermuda Limited in January 2022. Mr. Pickering is also a Director of Aspen Bermuda Limited and previously held the role of Chief Financial Officer of Aspen Bermuda Limited.

Mr. Pickering joined Aspen in September 2015. Prior to joining Aspen, Mr. Pickering was Senior Vice President, Treasurer with Platinum Underwriters Holdings, Ltd. from 2006 to 2015. Mr. Pickering is a Chartered Financial Analyst, Chartered Professional Accountant (Chartered Accountant) and also an Associate in Reinsurance.

- **Brian Tobben, Chief Executive Officer, Aspen Capital Partners**

Mr. Tobben was appointed Chief Executive Officer of Aspen Capital Partners in May 2021. Prior to this, he served as the Chief Executive Officer for Aspen Capital Markets. Before joining Aspen, Mr. Tobben was at Partner Reinsurance for almost 10 years, most recently as Head of Insurance Linked Securities where he managed a portfolio of catastrophe ILS, life ILS, weather and commodity investments and before that, as Vice President, Weather. Prior to this, Mr. Tobben was at Aquila Energy where he held a number of roles including Vice President, Business Development, Weather.

B. Compensation

Director Compensation

The Company paid approximately \$1.6 million as aggregate compensation to non-executive directors for their services to the Company during 2022. In the case of Albert Beer and Theresa Froehlich, this also includes fees paid for their services as directors of certain of the Company's subsidiaries.

Mr. Cloutier, our Group Chief Executive Officer and Executive Chairman of the Board and Chair of the Risk Committee, did not receive any compensation for his services as a director or committee chair in 2022. Likewise, Messrs. Black, Humphreys, Lohr, 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.

Note that David Altmaier was appointed to the Board with effect from March 7, 2023 and, accordingly, does not count towards the fees detailed above.

Senior Management Compensation

During 2022, the members of senior management identified in Item 6A (including Mr. Cloutier) received approximately \$16.9 million in aggregate compensation. This is comprised of: (i) base salary of approximately \$5.5 million; (ii) discretionary bonuses, which include annual bonuses paid in 2023 for service during 2022 of approximately \$9.6 million; and (iii) pension, retirement, and other benefits of approximately \$1.8 million.

There are currently no equity compensation plans under which equity securities of the Company are authorized for issuance.

C. Board Practices

The Board currently consists of 10 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 Bye-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. Lightowler (Chair) and Beer, each of whom is independent for purposes of the NYSE rules and Rule 10A-3 under the Securities Exchange Act of 1934, as amended. 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 and makes recommendations to the Board as to their selection and reviews the plan, fees and results of the audit of the independent auditors, as well as the fees and proposed scope of any non-audit services to be provided by the independent auditor. The Audit Committee also is directly responsible for the appointment, compensation, retention and oversight of the work of the Company's independent auditors (including resolution of disagreements between management and the auditor regarding financial reporting), and the Company's independent auditors must report directly to the Audit Committee.

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 has determined that Mr. Lightowler qualifies as having accounting or related financial management expertise pursuant to NYSE requirements and is an "audit committee financial expert" pursuant to the rules and regulations of the SEC.

Other Standing Committees

The Board currently has a Risk Committee, Investment Committee and a Conflicts Committees. The Board does not have, and is not required to have, a remuneration or compensation committee. See "Item 4B - Business Overview - Risk Management" for more information regarding these committees and "Item 16G – Corporate Governance" for a summary of ways in which our corporate governance practices differ from those followed by U.S. domestic companies listed on the NYSE.

D. Employees

As at December 31, 2022, we employed 946 persons in the following countries:

Country	As at December 31, 2022	As at December 31, 2021	December 31, 2020
United Kingdom	459	440	448
United States	391	377	366
Bermuda	57	57	49
Switzerland	21	17	19
Singapore	14	15	22
Australia	4	4	3
Total	946	910	907

The increase in the number of employees in 2022 compared to 2021 was primarily in the United Kingdom and the United States and was driven by the increased business growth. 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, 2022. The Company's non-voting preference shares and depositary shares are listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE.

F. Disclosure of a Registrant's Action to Recover Erroneously Awarded Compensation

Not applicable.

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 voting shares. Additionally, certain of our directors are employees of Apollo and its affiliates. Namely, Messrs. Black, Humphreys, Lohr, and Saffer are employees of Apollo.

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

None.

Item 9. The Offer and Listing

A. Offer and Listing Details

The Company's preference shares and depositary shares are listed on the NYSE under the following symbols: AHL PRC, AHL PRD and AHL PRE.

B. Plan of Distribution

Not applicable.

C. Markets

The Company's preference shares and the depositary 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 depositary 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

Management Consulting Agreement with Apollo Management

On March 28, 2019, the Company entered into a Management Consulting Agreement (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 to the consolidated financial statements, "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 “Original IT Outsourcing Agreement”) with Cognizant Worldwide Limited, a company registered in England (“Cognizant”). Pursuant to the Original IT Outsourcing Agreement, Cognizant provided the Company with information technology services to enable us to deliver greater operating effectiveness and efficiencies. The Original IT Outsourcing Agreement became effective August 31, 2018 and had an initial term period of five years from October 1, 2018. The Company had the right to extend the IT Outsourcing Agreement for an additional two year term. In 2022, the Company paid Cognizant approximately \$10.5 million for services rendered under the Original IT Outsourcing Agreement.

On December 31, 2020, Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services Inc. and Aspen Bermuda entered into a new Outsourcing Agreement (the “IT Outsourcing Agreement”) with Cognizant, which replaced and superseded the Original IT Outsourcing Agreement and significantly reduced the information technology services provided thereunder. The IT Outsourcing Agreement became effective on December 31, 2020 and has an initial term of four years. The Company has the right to extend the IT Outsourcing Agreement for an additional two-year term.

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 on shorter notice 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. Under the BPO Outsourcing Agreement, Genpact provides a range of operational services across core and support functions, including, but not limited to, Insurance and Reinsurance, Finance, Actuarial and Compliance.

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. On December 21, 2022, Aspen Insurance UK Services Limited, Aspen Insurance U.S. Services, Inc. and Aspen Bermuda issued an extension notice under which the services to be provided under the BPO Outsourcing Agreement will be extended to March 31, 2024.

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 2022, the Company paid Genpact approximately \$8.5 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.

IT Infrastructure Outsourcing Agreement

On June 1, 2022, Aspen Insurance UK Services Limited entered into an Outsourcing Agreement (the “IT Infrastructure Outsourcing Agreement”) with LTIMindtree Limited, a company incorporated in India (“LTIMindtree”). Pursuant to the IT

Infrastructure Outsourcing Agreement, LTIMindtree will provide us with a range of IT infrastructure and cybersecurity-related services, including, but not limited to, in relation to network services, database service, cybersecurity management and protection and cloud-related services. Such services will be provided primarily from their offshore service center in Bangalore, India, to enable us to deliver greater operating effectiveness and efficiencies.

IT Infrastructure Outsourcing Agreement became effective 1 June 2022 and has an initial term period of three years. We have the right to extend the initial term on the IT Infrastructure Outsourcing Agreement by up to two further periods of one year from the expiry of the Initial Term, by giving written notice to the Service Provider at least ninety (90) days prior to the expiry of the Initial Term or an extension period, as applicable.

The IT Infrastructure Outsourcing Agreement has minimum service levels that LTIMindtree must meet or exceed. The compensation structure under the IT Infrastructure Outsourcing Agreement includes a combination of fixed and variable fees which are both applicable and may fluctuate based on our actual use of LTIMindtree's services, as set forth in the IT Infrastructure Outsourcing Agreement. In 2022, the Company paid LTIMindtree approximately \$1 million for services rendered under the IT Infrastructure Outsourcing Agreement.

The IT Infrastructure Outsourcing Agreement contains customary representations and warranties and indemnity, termination and default provisions. We may terminate the IT Infrastructure Outsourcing Agreement for any reason by providing ninety (90) days' prior written notice and by paying for (i) the services satisfactorily performed and accepted by Aspen up to the effective date of such termination; and (ii) any other pre-agreed termination charges ranging from \$0 to \$750k, depending on the circumstances. In addition, we may terminate the IT Infrastructure 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 IT Infrastructure Outsourcing Agreement.

Loss Portfolio Transfer ("LPT") Agreement:

On January 10, 2022, Aspen Holdings and certain of its subsidiaries ("Aspen") entered into an Amended and Restated Reinsurance Agreement with a subsidiary of Enstar Group Limited (together, "Enstar") (the "LPT"), which amended and restated the Adverse Development Cover Agreement, dated as of March 2, 2020, previously entered into between Enstar and Aspen Group (the "Original Agreement"). The transaction successfully closed on May 20, 2022.

Under the terms of the LPT, Enstar's subsidiary will reinsure net losses incurred on or prior to December 31, 2019 on all of Aspen's net loss reserves of \$3,120.0 million as of September 30, 2021. The LPT provides for a limit of \$3,570.0 million in consideration for a premium of \$3,160.0 million. The amount of net loss reserves ceded, as well as the premium and limit amounts provided under the LPT, will be adjusted for claims paid between October 1, 2021 and the closing date of the transaction. The premium includes \$770 million of premium previously paid with respect to reserves ceded under the Original Agreement, which will continue to be held in trust accounts to secure the Enstar subsidiary's obligations under the LPT. The incremental new premium will initially be held in funds withheld accounts in their original currencies maintained by Aspen but will be released to the trust accounts maintained by the Enstar subsidiary no later than September 30, 2025. The funds withheld by Aspen will be credited with interest at an annual rate of 1.75% plus, for periods after October 1, 2022, an additional amount equal to 50% of the amount by which the total return on Aspen's investments and cash and cash equivalents exceeds 1.75%. Under the LPT, the Enstar subsidiary has assumed claims control, pursuant to the provisions of an administrative services agreement subsequently entered into between the parties on June 30, 2022.

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 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, the activities of the partnership, and certain determinations made at the partner level. If you are a partner in 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, RPII and 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 generally will be treated as dividends for U.S. federal income tax purposes. Dividends paid by us to U.S. Persons who are corporations generally will not be eligible for a 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 "extraordinary dividends" 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 CFCs. Each 10% U.S. Shareholder of a non-U.S. corporation that is a CFC at any time during a taxable year 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 tested income (with various adjustments) with respect to any shares that such 10% U.S. Shareholder owns in such non-U.S. corporation (directly or indirectly through certain entities) on the last day in the non-U.S. corporation's taxable year on which it is a CFC, even if the subpart F income or tested income is not distributed. Subpart F income of a CFC generally 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 tested income is generally any income of the CFC other than subpart F income and certain other categories of income. An entity treated as a foreign corporation for U.S. federal income tax purposes is generally considered a CFC if 10% U.S. Shareholders own (directly, indirectly through non-U.S. entities or constructively), in the aggregate, more than 50% of the total combined voting power of all classes of stock of that non-U.S. corporation or more than 50% of the total value of all stock of that non-U.S. corporation. However, for purposes of taking into account insurance income, these 50% thresholds are generally reduced to 25%. Further, special rules apply for purposes of taking into account any RPII of a non-U.S. corporation, as described below.

Whether Aspen Holdings is a CFC for a taxable year will depend upon facts regarding our direct and indirect shareholders, about which we have limited information. Accordingly, no assurance can be provided that Aspen Holdings will not be a CFC. Further, regardless of whether Aspen Holdings is a CFC, most or all of our non-U.S. subsidiaries are generally treated as CFCs because our U.S. subsidiaries generally are treated as constructively owning the stock of our non-U.S. subsidiaries. Accordingly, any 10% U.S. Shareholders of Aspen Holdings may be required to include in gross income for U.S. federal income tax purposes for each taxable year their pro rata shares of all or a portion of the subpart F and tested income generated by our non-U.S. companies (with various adjustments), regardless of whether any distributions are made to them. Any such 10% U.S. Shareholders should consult their own tax advisors regarding the application of these rules to them.

The RPII CFC Provisions. In general, if a non-U.S. corporation is a RPII CFC at any time during a taxable year, a U.S. RPII Shareholder must include in its gross income for U.S. federal income tax purposes its pro rata share of the non-U.S. corporation's RPII with respect to any shares that such U.S. RPII Shareholder owns (directly or indirectly through certain entities) on the last day in the non-U.S. corporation's taxable year, even if the RPII is not distributed. Further, a U.S. RPII Shareholder's pro rata share of any RPII is determined as if all RPII for the taxable year were distributed proportionately only to U.S. RPII Shareholders on that date. In addition, a U.S. RPII Shareholder is required to comply with certain reporting requirements, regardless of the number of shares owned by the U.S. RPII Shareholder.

For these purposes, RPII is any "insurance income" (as described below) attributable to policies of insurance or reinsurance with respect to which the person (directly or indirectly) insured is a U.S. RPII Shareholder or a "related person" (as defined below) to such U.S. 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. insurance company. Generally, the term "related person" for this purpose means someone who controls or is controlled by the U.S. RPII Shareholder or someone who is controlled by the same person or persons who control the U.S. RPII Shareholder. Control generally is measured by a greater than 50% ownership interest, applying certain constructive ownership principles. However, the RPII rules generally do not apply with respect to a non-U.S. corporation if either (i) at all times during its taxable year less than 20% of the total combined voting power of all classes of stock of the corporation entitled to vote and less than 20% of the total value of the corporation is owned (directly or indirectly) by persons who are (directly or indirectly) insured under any policy of insurance or reinsurance issued by the corporation or who are related persons to any such person (the "ownership exception"), or (ii) the RPII (determined on a gross basis) of the corporation for the taxable year is less than 20% of its gross insurance income for the taxable year (the "de minimis exception").

We believe that each of our non-U.S. Operating Subsidiaries and each of Peregrine and APJ Jersey is a RPII CFC. Nonetheless, we expect that each such company will qualify for one or both of the ownership exception and the de minimis exception in the current taxable year and for the foreseeable future. However, no assurances can be provided that any of our companies will satisfy either exception.

Computation of RPII. In order to determine how much RPII, if any, 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 direct or indirect 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 U.S. RPII Shareholders.

Basis Adjustments. A U.S. RPII Shareholder's tax basis in its shares will be increased by the amount of any RPII that the shareholder includes in income. The U.S. RPII Shareholder may exclude from income the amount of any distributions by Aspen Holdings out of previously taxed RPII income. The U.S. 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 Provisions. The RPII provisions have never been interpreted by the courts, and regulations interpreting the RPII provisions 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 provisions by the IRS, the courts or otherwise, might have retroactive effect. The U.S. 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. Further, the applicability of the ownership and de minimis exceptions and the RPII rules more generally depends upon facts regarding our direct and indirect shareholders and insureds, about which we have limited information. Accordingly, no assurances can be provided that any of our companies will satisfy either exception. Moreover, to the extent the exceptions do not apply, we may be unable to correctly determine the amount of RPII that any U.S. RPII Shareholder is required to take into account. Any prospective investors considering an investment in our shares should consult their tax advisors 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 U.S. 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, upon request, 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. A U.S. tax-exempt organization generally will recognize unrelated business taxable income if the organization is required to include in gross income any of our insurance income under the CFC rules described above (including the RPII provisions). 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 U.S. 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 distribution with respect to our shares, 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 certain 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 the rates applicable to long-term capital gain. 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). A U.S. Person who owns or owned, directly, indirectly through certain non-U.S. entities or constructively, 10% or more of the voting power of Aspen Holdings may be subject to these rules if Aspen Holdings is or was treated as a CFC.

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.

Pursuant to the RPII provisions, Section 1248 of the Code also generally applies if a U.S. Person disposes of shares in a RPII CFC (determined without regard to the ownership or de minimis exceptions) that would be taxable as an insurance company under the Code if it were a U.S. corporation, in which case any gain from the disposition generally will 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 number of shares owned by the holder. Existing proposed regulations do not address whether Section 1248 of the Code would apply if a non-U.S. corporation is not an insurance company 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 that these rules should not apply to dispositions of our shares because Aspen Holdings will not itself be directly engaged in the insurance business. We cannot be certain, however, that the IRS will not interpret the RPII provisions in a contrary manner or that the U.S. Treasury Department will not adopt regulations that 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.

Tax on Net Investment Income. 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). Unless a U.S. Person elects otherwise or holds Preference Shares in connection with certain trades or businesses, the CFC and PFIC provisions generally will not apply for purposes of determining a U.S. Person's net investment income with respect to the Preference Shares.

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"). For these purposes, passive income generally includes interest, dividends, annuities and other investment income. However, the PFIC provisions contain a look-through rule under which a non-U.S. corporation that directly or indirectly owns at least 25% of the value of the stock of another corporation generally is treated, for purposes of determining whether it is a PFIC, as if it received directly its proportionate share of the income, and held its proportionate share of the assets, of the other corporation (the "look-through rule"). In addition, pursuant to an insurance exception, (a) passive income does not include income that a QIC derives in the active conduct of an insurance business or income of a QDIC, and (b) passive assets do not include assets of a QIC available to satisfy liabilities of the QIC related to its insurance business, if the QIC is engaged in the active conduct of an insurance business, or assets of a QDIC.

Generally, a non-U.S. corporation will be a QIC for a taxable year if it would be taxable as an insurance company if it were a U.S. corporation and its applicable insurance liabilities constitute more than 25% of its total assets for a taxable year. Further, under the 2021 Proposed Regulations, a QIC is in the "active conduct" of an insurance business only if it satisfies either a "factual requirements test" or an "active conduct percentage test." The factual requirements test requires that the officers and employees of the QIC carry out substantial managerial and operational activities on a regular and continuous basis with respect to its core functions and that they perform virtually all of the active decision-making functions relevant to underwriting functions. The active conduct percentage test generally requires that (i) the total costs incurred by the QIC with respect to its officers and employees for services rendered with respect to its core functions (other than investment activities) equal or exceed 50% of the total costs incurred by the QIC with respect to its officers and employees and any other person or entities for services rendered with respect to its core functions (other than investment activities) and (ii) to the extent the QIC outsources any part of its core functions to unrelated entities, officers and employees of the QIC with experience and relevant expertise must select and supervise the person that performs the outsourced functions, establish objectives for performance of the

outsourced functions and prescribe rigorous guidelines relating to the outsourced functions which are routinely evaluated and updated. Under certain exceptions, however, a QIC that has no or only a nominal number of employees or that is a vehicle that has the effect of securitizing or collateralizing insurance risks underwritten by other insurance or reinsurance companies or is an insurance linked securities fund that invests in securitization vehicles generally is deemed not engaged in the active conduct of an insurance business. The officers and employees of certain related entities generally may be taken into account for these purposes, provided that the QIC exercises regular oversight and supervision over the services performed by the related entity's officers and employees. The 2021 Proposed Regulations will not be effective unless and until adopted in final form, but taxpayers may rely on them for taxable years beginning after December 31, 2017 if they are consistently followed.

We believe that, based on the implementation of our current business plan and the application of the insurance exception, our non-U.S. insurance subsidiaries should be considered QICs engaged in the active conduct of an insurance business under one or both of the "factual requirements test" or the "active conduct percentage test," our U.S. insurance subsidiaries should be considered QDICs and none of the income or assets of such insurance subsidiaries should be treated as passive. As a result, based on the application of the look-through rule, we believe that Aspen Holdings should not be characterized as a PFIC for the current year or the foreseeable future. However, because of legal uncertainties with respect to the interpretation of the PFIC rules and whether the 2021 Proposed Regulations will be adopted as final regulations in their current form, and factual uncertainties with respect to our planned operations, there is a risk that Aspen Holdings will be characterized as a PFIC in one or more years.

If Aspen Holdings is characterized as a PFIC for any year during which a U.S. Person holds shares of Aspen Holdings, it generally will continue to be treated as a PFIC for the years during which such U.S. Person holds such shares unless the U.S. Person has made a "qualified electing fund" election, described below.

If Aspen Holdings were characterized as a PFIC during a given year, each U.S. Person holding shares of Aspen Holdings generally 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 whether 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 the 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 earned in equal portions and taxable at the highest applicable tax rate on ordinary income throughout the shareholder's period of ownership, and an interest charge for the failure to pay such taxes for prior periods. The interest charge is equal to the applicable rate imposed on underpayments of U.S. federal income tax for such periods. 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.

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.

If Aspen Holdings is a PFIC for any taxable year, a U.S. Person who holds our shares would be treated as owning a proportionate amount of the shares of any PFICs in which Aspen Holdings directly, or in certain cases indirectly, owns an interest, and the PFIC rules described above generally would apply with respect to the U.S. Person's indirect ownership of such PFICs.

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. Additionally, tested income will constitute a separate basket for foreign tax credit 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 and any other applicable information reporting requirements to their ownership of Preference Shares.

Possible Changes in U.S. Tax Law. It is possible that future regulatory and judicial interpretations, 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 or interpretations 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," "tested income" or RPII of a CFC, are subject to change, possibly on a retroactive basis. Certain of 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 OECD and is imposed on members of the European Union by the European Directive on Administrative Co-operation. Similar to the legislation commonly known as 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. 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.

J. Annual Report to Security Holders

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.

The table below depicts interest rate change scenarios and the effect on our interest rate sensitive invested assets:

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⁾	6,020.0	5,937.7	5,855.4	5,773.1	5,690.9
Gain/Loss	164.6	82.3	—	(82.3)	(164.6)
Percentage of Portfolio	2.8 %	1.4 %	—	(1.4)%	(2.8)%
Corresponding percentage at December 31, 2021	3.1 %	1.5 %	—	(1.5)%	(3.1)%

(1) Market value includes our fixed income portfolio, short term investments and privately held investments.

Foreign currency risk. Our reporting and the functional currency of our operations is the U.S. Dollar. As at December 31, 2022, approximately 61.2% of our cash and investments was held in U.S. Dollars (2021 — 91.1%), and approximately 38.8% was in currencies other than the U.S. Dollar (2021 — 8.9%). For the twelve months ended December 31, 2022, 22.9% of our gross premiums were written in currencies other than the U.S. Dollar (2021 — 24.4%) and we expect that a similar proportion will be written in currencies other than the U.S. Dollar in 2023.

Other foreign currency amounts are remeasured to U.S. Dollars and the resulting foreign exchange gains or losses are reflected in the statement of operations. The remeasurement is 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 an example, as at December 31, 2022 would have impacted reported net comprehensive income by approximately \$35.9 million (2021 — \$27.6 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, 2022, we held foreign exchange contracts that were not designated as hedging under ASC 815, “*Derivatives and Hedging*” with an aggregate notional value of \$1,675.3 million (2021 — \$1,545.7 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, 2022, the impact of foreign exchange contracts on net income was a loss of \$80.5 million (December 31, 2021 — loss of \$35.9 million).

As at December 31, 2022, we held foreign exchange contracts that were designated as hedging under ASC 815 with an aggregate notional value of \$109.7 million (2021 — \$143.1 million). The foreign exchange contracts are recorded as liabilities under derivative contracts 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 \$15.4 million for the twelve months ended December 31, 2022 (December 31, 2021 — loss of \$6.2 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, 2022, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$5.9 million (December 31, 2021 — loss of \$5.7 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, 2022, the average rating of fixed income maturities in our investment portfolio was “AA-” (December 31, 2021 — “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, 2022 was \$4,897.7 million (2021 — \$3,298.1 million) of which \$2,092.4 million was uncollateralized (2021 — \$1,981.4 million). As at December 31, 2022, of the Company’s uncollateralized reinsurance recoverables, 9.7% (2021 — 10.8%) were with Munich Re which is rated A+ by A.M. Best and AA- by S&P, 16.3% (2021 — 15.9%) were with Everest Re which is rated A+ by A.M. Best and A+ by S&P, and 8.2% (2021 — 9.3%) were with Lloyd’s 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, 2022.

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 designed 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, 2022, 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 or at any time.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2022. 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, as a result of the continued material weakness in internal controls described below, our internal controls over financial reporting were ineffective as at December 31, 2022. The material weakness identified relates to insufficient resources with appropriate level of knowledge within our outwards reinsurance operations and accounting team to effectively design and execute our process level procedures and controls around reinsurance premiums payable and reinsurance receivables, and related disclosures.

To remediate this identified material weakness in our internal control over financial reporting described above, during the course of 2022, we engaged external consulting support, deployed various tactical processes and procedural enhancements including the realignment of resources and hiring new employees to the outwards reinsurance accounting and operations teams, together with scoping out medium to longer-term remedial activities. We have therefore partially implemented (but not yet fully completed) remedial measures, both those already underway during the year ended December 31, 2022 along with additional planned measures to remediate the material weakness. Remediation activities, which remain ongoing, include, but are not limited to the following:

- Further strengthening the reinsurance team by hiring additional accounting and operational resources to help ensure that we have a sufficient number of personnel with skills and experience commensurate with the size and complexity of the organization who can effectively design and execute our process level procedures and controls around reinsurance premiums payable and reinsurance receivables, and associated disclosure controls.
- Strengthening the documentation of reinsurance premiums payable and reinsurance receivables processes and procedures relating to the reconciliation of and cash matching controls, enhancing the scope of existing outward reinsurance credit controls whilst also implementing new outwards reinsurance credit control processes and procedures.

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 over the course of 2023. Our Board and Audit Committee are committed to, and will continue to monitor the progress and effectiveness of our management's control-remediation activities.

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.

C. Attestation report of the registered public accounting firm

Not applicable.

D. Changes in Internal Control Over Financial Reporting

Remediation Status:

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.

In our 2021 annual report on Form 20-F, we identified and disclosed additional material weaknesses in our internal control over financial reporting. The material weaknesses resulted from our foreign-exchange revaluation process and translation controls within Aspen U.K.; the completeness and accuracy of the information used in recognizing both current and deferred income tax on Aspen U.K.'s branches and the associated application thereof in respect of local tax rules in the various jurisdictions; and the misapplication of committed par value measurement prices when valuing privately-held investments.

To remediate the material weaknesses described above, we initiated remedial measures that included, but were not limited to, designing and implementing new internal controls, improving segregation of duties across credit control processes, enhancing existing internal controls, including timeliness and accuracy of reporting in the areas of tax and privately-held investments, monitoring of controls and additional training. We have successfully completed the testing necessary to conclude that these previously identified material weaknesses have been remediated as of December 31, 2022.

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, and other than the changes described above in "Remediation Plan and Status," the Company's management is not aware of any additional changes, other than the ones mentioned above, in its internal control over financial reporting that occurred during the year ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. The Company reviews its disclosure controls and procedures, including internal controls over financial reporting, on an ongoing basis.

Item 16A. Audit Committee Financial Expert

The Board has determined that Mr. Richard Lightowler is an independent director, is financially literate, has accounting or related financial management expertise pursuant to NYSE requirements and is an "audit committee financial expert" pursuant to the rules and regulations of the SEC.

Item 16B. Code of Ethics

Our Board has adopted a code of ethics entitled "Code of Conduct" which applies to all of our employees, officers and directors. Copies of our Code of Conduct 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 the disclosure requirement under Item 16B(d)-(e) of Form 20-F regarding amendment to, or waiver from, a provision of our Code of Ethics by posting such information at the website location specified above.

Item 16C. Principal Accountant Fees and Services

The following table represent aggregate fees billed to the Company by Ernst & Young LLP (“EY”) PCAOB ID 1438, London, England, the Company’s independent registered public accounting firm and auditor, for fiscal year ended December 31, 2022, and fees billed to the Company for fiscal year ended December 31, 2021, from KPMG, PCAOB ID 1118, London, its previous auditor:

	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021
	(\$ in millions)	
Audit Fees ⁽¹⁾	\$ 5.4	\$ 6.4
Audit-Related Fees ⁽²⁾	1.0	0.5
All Other Fees ⁽³⁾	—	—
Total Fees	<u>\$ 6.4</u>	<u>\$ 6.9</u>

- (1) Audit fees consist of fees paid to EY 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, 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 Lloyd’s regulatory filings.
- (3) All other fees totalling \$41,000 relate to fees billed to the company by EY for non-audit services rendered to the company in connection with Canadian Actuarial Audit Support.

The policy of the Audit Committee is to approve all audit and permissible non-audit services to be provided by the independent registered public accounting firm during the year. The Audit Committee considered whether the provision of the non-audit services by EY was compatible with maintaining EY’s independence with respect to the Company and determined that the provision of such services was compatible with EY maintaining its independence. The Audit Committee approved all of the services provided by EY for the fiscal year ended December 31, 2022.

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

As discussed in the Company’s Annual Reports on Form 20-F for the years ended December 31, 2020 and December 31, 2021, on June 8, 2022, KPMG LLP (“KPMG”) resigned as Aspen’s independent registered public accounting firm. With effect from July 6, 2022 following receipt of regulatory approval and completion of internal governance procedures, Aspen has appointed Ernst & Young LLP (“EY”) as Aspen’s independent registered public accounting firm for the fiscal year ending December 31, 2022.

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 and Item 16G of Form 20-F, 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 a compensation committee. 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.
- We do not have an audit committee composed of a minimum of three individuals. The NYSE requires U.S. issuer listed companies to have an audit committee that has a minimum of three members. Foreign private issuers are exempt from this requirement. Under Bermuda law and our Bye-Laws, there is no requirement for a fixed number of members for an audit committee. Our Audit Committee is composed of two members, as described further herein.

Item 16H. Mine Safety Disclosure

Not applicable.

Item 16I. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Item 16J. Insider Trading Policies

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, 2022 and December 31, 2021
(\$ in millions, except share and per share amounts)

	As at December 31, 2022	As at December 31, 2021
ASSETS		
Fixed income maturities, available for sale (amortized cost — 2022: \$4,131.3 and 2021: \$4,823.5 net of allowance for expected credit losses 2022: \$7.7 and 2021: \$2.7)	\$ 3,788.6	\$ 4,881.6
Fixed income maturities, trading at fair value (amortized cost — 2022: \$1,576.7 and 2021: \$1,155.5)	1,475.5	1,157.5
Short-term investments, available for sale (amortized cost — 2022: \$52.4 and 2021: \$10.1)	52.0	10.1
Short-term investments, trading at fair value (amortized cost — 2022: \$6.3 and 2021: \$2.0)	6.3	2.0
Catastrophe bonds, trading at fair value (amortized cost — 2022: \$5.1 and 2021: \$5.3)	2.9	3.4
Privately-held investments, trading at fair value (amortized cost — 2022: \$537.7 and 2021: \$309.2) ⁽¹⁾	533.0	307.1
Investments, equity method	6.2	3.9
Other investments, at fair value ⁽²⁾	221.3	151.3
Total investments	6,085.8	6,516.9
Cash and cash equivalents (including cash within consolidated variable interest entities of — 2022: \$65.7 and 2021: \$75.2) ⁽³⁾	959.2	1,314.1
Unpaid losses recoverable from reinsurers (net of allowance for expected credit losses of 2022: \$3.7 — 2021: \$3.3)	4,897.7	3,298.1
Ceded unearned premiums	737.3	596.1
Underwriting premiums receivables (net of allowance for expected credit losses of 2022: \$25.0 — 2021: \$30.2)	1,482.4	1,304.6
Other receivables	179.4	153.0
Funds withheld	102.6	103.7
Deferred acquisition costs	319.0	290.8
Derivatives at fair value	56.2	12.9
Receivables for securities sold	13.5	19.4
Office properties and equipment	81.3	114.5
Right-of-use operating lease assets	72.8	83.4
Income taxes refundable	20.8	6.4
Deferred tax assets	120.1	—
Other assets	7.4	8.3
Intangible assets and goodwill	21.8	21.9
Total assets	\$ 15,157.3	\$ 13,844.1
LIABILITIES		
Insurance reserves		
Losses and loss adjustment expenses	\$ 7,710.9	\$ 7,611.8
Unearned premiums	2,457.5	2,112.3
Total insurance reserves	10,168.4	9,724.1
Reinsurance premiums	1,980.1	575.7
Income taxes payable	10.9	4.4
Deferred tax liabilities	0.9	2.8
Accrued expenses and other payables ⁽⁴⁾	201.8	289.3
Payables for securities purchased	6.9	44.6
Operating lease liabilities	95.5	115.2
Liabilities under derivative contracts	34.9	13.3
Short-term debt	299.9	—
Long-term debt	—	299.9
Total liabilities	\$ 12,799.3	\$ 11,069.3
Commitments and contingent liabilities (see Note 20)	—	—
SHAREHOLDERS' EQUITY		
60,395,839 ordinary shares of par value \$0.01 each (December 31, 2021 — 60,395,839 shares)	\$ 0.6	\$ 0.6
Additional paid-in capital	1,514.7	1,514.7
Retained earnings	1,349.0	1,382.5
Accumulated other comprehensive (loss)	(506.3)	(123.0)
Total shareholders' equity	2,358.0	2,774.8
Total liabilities and shareholders' equity	\$ 15,157.3	\$ 13,844.1

(1) Privately-held investments includes related party investments totaling \$44.8 million.

(2) Other investments includes related party investments of \$25.3 million in Apollo Real Estate Fund and \$12.7 million in Apollo Origination Partnership.

(3) Cash and cash equivalents includes restricted cash of \$232.1 million (2021 — \$364.9 million) which are held in trusts.

(4) Includes amounts due to related parties of \$4.5 million for investment management fees (2021 — \$3.2 million), and \$1.3 million for management consulting fees (2021 — \$Nil).

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF OPERATIONS AND OTHER COMPREHENSIVE INCOME (LOSS)
For The Twelve Months Ended December 31, 2022, 2021 and 2020
(\$ in millions, except share and per share amounts)

	Twelve Months Ended December 31,		
	2022	2021	2020
Revenues			
Net earned premium	\$ 2,688.7	\$ 2,410.5	\$ 2,527.5
Net investment income ⁽¹⁾	188.1	147.5	154.6
Realized and unrealized investment gains	5.0	56.2	98.5
Other income	8.2	14.7	49.8
Total revenues	2,890.0	2,628.9	2,830.4
Expenses			
Losses and loss adjustment expenses	1,680.0	1,693.3	1,840.8
Acquisition costs	431.8	414.1	465.7
General, administrative and corporate expenses ⁽²⁾	494.2	418.0	410.9
Interest expense	43.7	14.3	33.9
Change in fair value of derivatives	80.5	35.9	65.1
Realized and unrealized investment losses ⁽³⁾	182.6	47.4	27.4
Net realized and unrealized foreign exchange (gains)/losses	(15.9)	(40.0)	13.8
Other expenses	20.1	10.8	10.8
Total expenses	2,917.0	2,593.8	2,868.4
(Loss)/income from operations before income taxes	(27.0)	35.1	(38.0)
Income tax benefit/(expense)	78.1	(5.3)	(18.4)
Net income/(loss)	\$ 51.1	\$ 29.8	\$ (56.4)
Net income/(loss) attributable to Aspen Insurance Holdings Limited's ordinary shareholders	\$ 51.1	\$ 29.8	\$ (56.4)
Other Comprehensive (Loss)/Income:			
Available for sale investments:			
Reclassification adjustment for net realized gains/(losses) on investments included in net income/(loss)	\$ 55.5	\$ (20.4)	\$ (67.1)
Change in net unrealized (losses)/gains on available for sale securities held	(447.2)	(137.2)	175.6
Net change from current period hedged transactions	15.4	(6.2)	0.3
Change in foreign currency translation adjustment	(30.9)	21.4	(11.9)
Other comprehensive (loss)/income, before income taxes	(407.2)	(142.4)	96.9
Income tax benefit/(expense) thereon:			
Change in net unrealized gains on available for sale securities held	23.9	(0.3)	(0.5)
Total income tax benefit/(expense) allocated to other comprehensive (loss)	23.9	(0.3)	(0.5)
Other comprehensive (loss)/income, net of income taxes	(383.3)	(142.7)	96.4
Total comprehensive (loss)/income attributable to Aspen Insurance Holdings Limited's ordinary shareholders	\$ (332.2)	\$ (112.9)	\$ 40.0

- (1) Net investment income includes related party investment income of \$3.1 million and related party investment management fees of \$4.9 million (2021 — \$5.8 million, 2020 — \$5.3 million).
- (2) General, administrative and corporate expenses includes related party management consulting fees of \$5.0 million (2021 — \$5.0 million; 2020 — \$5.0 million).
- (3) Realized and unrealized investments losses includes \$0.4 million loss on related party investments.

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
For The Twelve Months Ended December 31, 2022, 2021 and 2020
(\$ in millions)

	Twelve Months Ended December 31,		
	2022	2021	2020
Ordinary shares			
Beginning of the year	\$ 0.6	\$ 0.6	\$ 0.6
End of the year	0.6	0.6	0.6
Additional paid-in capital			
Beginning of the year	1,514.7	1,469.7	1,201.7
Capital contribution	—	45.0	268.0
End of the year ⁽¹⁾	1,514.7	1,514.7	1,469.7
Retained earnings			
Beginning of the year	1,382.5	1,397.2	1,502.4
Net income/(loss) for the year	51.1	29.8	(56.4)
Dividends on ordinary shares	(40.0)	—	—
Dividends on preference shares	(44.6)	(44.5)	(44.5)
Opening credit losses ("CECL") ⁽²⁾	—	—	(4.3)
End of the year	1,349.0	1,382.5	1,397.2
Accumulated other comprehensive income:			
Cumulative foreign currency translation adjustments:			
Beginning of the year	(156.0)	(177.4)	(165.5)
Change for the year, net of income taxes	(30.9)	21.4	(11.9)
End of the year	(186.9)	(156.0)	(177.4)
Gain (loss) on derivatives:			
Beginning of the year	(1.6)	4.6	4.3
Net change from current period hedged transactions, net of income taxes	15.4	(6.2)	0.3
End of the year	13.8	(1.6)	4.6
Unrealized appreciation on available for sale investments:			
Beginning of the year	34.6	192.5	84.5
Change for the year, net of income taxes	(367.8)	(157.9)	108.0
End of the year	(333.2)	34.6	192.5
Total accumulated other comprehensive (loss)/income	(506.3)	(123.0)	19.7
Total shareholders' equity	\$ 2,358.0	\$ 2,774.8	\$ 2,887.2

⁽¹⁾ Additional paid-in capital includes \$775.0 million less issue costs of \$21.5 million of share premium in relation to preference shares (December 31, 2021 and 2020 — \$775.0 million less issue costs of \$21.5 million)

⁽²⁾ In 2020, the \$4.3 million relates to the cumulative effect-adjustment to opening retained earnings as a result of the recognition of current expected credit losses ('CECL') in the Company's available-for-sale investment portfolio and reinsurance recoverables following the adoption of ASU 2016-13.

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For The Twelve Months Ended December 31, 2022, 2021 and 2020

(\$ in millions)

	Twelve Months Ended December 31,		
	2022	2021	2020
Cash flows (used in)/from operating activities:			
Net income/(loss)	\$ 51.1	\$ 29.8	\$ (56.4)
Adjustments to reconcile net income/(loss) to net cash flows from operating activities:			
Depreciation and amortization	43.3	53.3	45.8
Impairment of lease assets	(6.7)	0.4	12.9
Amortization of right-of-use operating lease assets	10.1	12.0	11.8
Interest on operating lease liabilities	5.4	5.5	5.5
Realized and unrealized investment gains	(5.0)	(56.2)	(98.5)
Realized and unrealized investment losses	182.6	47.4	27.4
Deferred tax (benefit)	(104.6)	(3.2)	(1.0)
Net realized and unrealized investment foreign exchange (gains)/losses	15.9	13.0	(25.3)
Net change from current period hedged transactions	15.4	(6.2)	0.3
Unrealized (gain) on real estate funds in net investment income	(14.5)	(20.5)	—
Changes in:			
Insurance reserves:			
Losses and loss adjustment expenses	99.1	483.3	146.9
Unearned premiums	345.2	310.2	68.0
Reinsurance recoverables:			
Unpaid losses	(1,599.6)	(109.5)	(864.9)
Ceded unearned premiums	(141.2)	(143.1)	(9.6)
Other receivables	(26.4)	(19.4)	(17.4)
Deferred acquisition costs	(28.2)	13.2	(13.3)
Reinsurance premiums payable	1,404.4	1.2	129.7
Funds withheld	1.1	(5.7)	(13.0)
Premiums receivable	(177.8)	(142.9)	79.9
Income tax payable	(1.3)	(7.6)	7.6
Accrued expenses and other payable	(87.0)	73.5	2.4
Fair value of derivatives and settlement of liabilities under derivatives	(21.7)	13.6	(87.5)
Long-term debt and loan notes issued by variable interest entities	—	—	0.1
Operating lease liabilities	(15.5)	(17.5)	(17.3)
Other assets	0.9	0.1	(6.8)
Net cash (used in)/from operating activities	\$ (55.0)	\$ 524.7	\$ (672.7)

ASPEN INSURANCE HOLDINGS LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
For The Twelve Months Ended December 31, 2022, 2021 and 2020

(\$ in millions)

	Twelve Months Ended December 31,		
	2022	2021	2020
Cash flows (used in)/from investing activities:			
(Purchases) of fixed income securities — Available for sale	\$ (1,613.9)	\$ (2,217.3)	\$ (1,632.0)
(Purchases) of fixed income securities — Trading	(724.6)	(866.4)	(281.9)
Proceeds from sales and maturities of fixed income securities — Available for sale	2,212.5	1,538.1	2,415.8
Proceeds from sales and maturities of fixed income securities — Trading	293.6	548.2	554.4
Net proceeds from catastrophe bonds — Trading	0.5	14.3	9.8
(Purchases) of short-term investments — Available for sale	(55.9)	(17.2)	(216.1)
Proceeds from sale of short-term investments — Available for sale	13.6	99.6	246.1
(Purchases) of short-term investments — Trading	(7.0)	(26.8)	(58.3)
Proceeds from sale of short-term investments — Trading	2.6	60.8	103.8
(Purchases) of privately-held investments — Trading	(377.9)	(205.1)	(92.8)
Proceeds from sale of privately-held investments — Trading	147.4	182.1	64.9
Net change in (payable)/receivable for securities (purchased)/sold	(31.8)	26.6	1.5
(Purchases) of other investments	(62.5)	(20.0)	—
Net proceeds from sales of other investments	5.9	—	71.1
Net sales/(purchases) of fixed assets	3.0	(64.5)	(40.7)
Investment in Multiline reinsurer	(1.6)	(2.5)	(0.5)
Net (purchases)/sales of investments, equity method	(0.4)	(0.2)	6.1
Net cash (used in)/from investing activities	\$ (196.5)	\$ (950.3)	\$ 1,151.2
Cash flows used in/from financing activities:			
Capital contribution	\$ —	\$ 45.0	\$ 268.0
Dividends paid on ordinary shares	(40.0)	—	—
Dividends paid on preference shares	(44.6)	(44.5)	(44.5)
Net cash (used in)/from financing activities	\$ (84.6)	\$ 0.5	\$ 223.5
Effect of exchange rate movements on cash and cash equivalents	(18.8)	(8.1)	14.8
(Decrease)/increase in cash and cash equivalents	(354.9)	(433.2)	716.8
Cash and cash equivalents at beginning of period	1,314.1	1,747.3	1,030.5
Cash and cash equivalents at end of period ⁽¹⁾	\$ 959.2	\$ 1,314.1	\$ 1,747.3
Supplemental disclosure of cash flow information:			
Net cash paid during the period for income taxes	\$ 29.1	\$ 15.7	\$ 15.0
Cash paid during the period for interest	\$ 14.3	\$ 14.0	\$ 14.0

(1) Cash and cash equivalents includes restricted cash of \$232.1 million (2021 — \$364.9 million, 2020 — \$296.0 million) which are held in trusts.

ASPEN INSURANCE HOLDINGS LIMITED**NOTES TO THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS****For The Twelve Months Ended December 31, 2022, 2021 and 2020****(\$ in millions, except share and per share amounts)****1. History and Organization**

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 Bermuda Limited (“Aspen Bermuda”), Aspen Specialty Insurance Company (“Aspen Specialty”), Aspen American Insurance Company (“AAIC”), Aspen Insurance UK Limited (“Aspen UK”) and Aspen Underwriting Limited (“AUL”) (as corporate member of our Lloyd’s operations, Syndicate 4711, which are managed by Aspen Managing Agency Limited (“AMAL”) (together, “Aspen Lloyd’s”)), each referred to herein as 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. (“ACML”) and other related entities (collectively, “ACM”) to leverage our existing underwriting franchise, increase our operational flexibility and provide third-party investors direct access to our capital markets and underwriting expertise. References to the “Company,” the “Group,” “we,” “us” or “our” refer to Aspen Holdings or Aspen Holdings and its consolidated subsidiaries.

Since February 2019, the Company has been a wholly-owned subsidiary of Highlands Bermuda Holdco, Ltd. (“Parent”), which holds all of the Company’s ordinary shares. 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”). The Company’s preference shares and depositary shares are listed on the New York Stock Exchange (“NYSE”) under the following symbols: AHL PRC, AHL PRD and AHL PRE.

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.

The consolidated financial statements have been prepared on a going concern basis.

(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, recoverability of deferred tax assets, 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 recognized as revenues proportionately over the coverage period. Premiums earned are recorded in the consolidated 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. 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. The original premiums are recognized as revenue in full at the date of loss, with the reinstatement premiums recognized as revenue over the remaining cover term. 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.

Credit Losses on Underwriting Premiums Receivable. Underwriting premium receivable balances are reported net of an allowance for expected credit losses. The allowance, based on ongoing review and monitoring of amounts outstanding, historical loss data, including write-offs and other relevant factors, is charged to net income in the period the receivable is recorded and revised in subsequent periods to reflect changes in the Company's estimate of expected credit losses. Credit risk is partially mitigated by the Company's ability to cancel the policy if the policyholder does not pay the premium.

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 consolidated statements 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 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.

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 expensed over the period of coverage while those arising from "risks attaching during" policies are expensed over the earnings period of the underlying premiums written 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. 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.

Accounting for Retroactive Reinsurance Agreements. Retroactive reinsurance agreements are reinsurance agreements under which a reinsurer agrees to reimburse the Company as a result of past insurable events. For retroactive reinsurance purchased by the Company, the excess of the amounts ultimately collectible under the agreement over the consideration paid is recognized as a deferred gain liability which is amortized into income over the settlement period of the ceded reserves once the paid losses have exceeded the minimum retention. The amount of the deferral is recalculated each period based on actual loss payments and updated estimates of ultimate losses. If the consideration paid exceeds the ultimate losses collectible under the agreement, the net loss on the retroactive reinsurance agreement is recognized within income immediately.

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. Premiums paid in excess of accounts receivable are charged to income.

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.

Credit Losses on Reinsurance Recoverables. Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability with the reinsured business. The Company evaluates the financial condition of its reinsurers and retrocessionaires, and monitors concentration of credit risk to minimize its exposure to significant losses from individual reinsurers. To further reduce credit exposure on reinsurance recoverables, the Company has received collateral, including letters of credit and trust accounts, from certain reinsurers. Following the adoption of ASC 326, an allowance is established for expected credit losses to be recognized over the life of the reinsurance recoverable. The allowance considers the current financial strength of the individual reinsurer and the amount of collateral held.

Acquisition Costs. The costs directly related to writing a (re)insurance policy are referred to as 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 and accrued based on the related performance criteria evaluated at the balance sheet date, with subsequent changes to those estimates recognized when they occur. Commissions received related to reinsurance premiums ceded are netted against broker commissions in determining acquisition costs eligible for deferral.

On a regular basis a premium deficiency analysis is performed of the deferred 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 and Administrative 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 professional and consultancy fees. General 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. 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 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 reported at estimated fair value.

Catastrophe Bonds. Investments in catastrophe bonds are classified as trading and are reported 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, middle market loans, asset-backed securities, global corporate securities and equity securities. These investments are classified as trading and are reported 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 investments in real estate funds and other special purpose vehicles. 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 reported 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 are recorded in revenue or expenses respectively. 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.

Credit Losses on Available for Sale Debt Securities. Following Aspen's adoption of ASU 2016-13 "*Financial Instruments - Credit Losses (Topic 326)*", effective January 1, 2020, current expected credit losses (CECL) are recognized through an allowance account for available for sale debt securities, thereby permitting reversals of previously recognized credit losses through net income in the period they occur. Write-offs (of any previously recognized allowance for credit losses) are recorded when amounts are deemed uncollectible, or Aspen intends to sell (or more likely than not will be required to sell) the debt security before recovery of the amortized cost basis. The amortized cost basis will be written down to the debt securities fair value through earnings. Credit losses are limited to the difference between the debt securities amortized cost basis and fair value ('fair-value floor'). Any decline in the debt securities fair value below the amortized cost basis that is not a result of a credit loss is recorded through other comprehensive income, net of applicable taxes.

Our credit loss models employ a discounted cash flow approach to evaluate whether a credit loss exists at the individual security level and are reviewed at each reporting period. This analysis excludes investments in U.S. Government / Agency bonds and U.S. Government Agency mortgage-backed securities due to being of 'high credit quality' based on the absence of risk. Available for sale debt securities that were initially purchased with credit deterioration (PCD), the amortized cost basis shall be considered to be the purchase price, plus any allowance for credit losses. Estimated credit losses shall be discounted at the rate that equates the present value of the purchaser's estimate of the security's future cash flows with the purchase price of the asset. Holding gains or losses are recognition through other comprehensive income, net of applicable taxes. No changes in the estimate of credit losses have taken place during the period.

Net 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 income also includes changes in fair value from investments in real estate funds. 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 consolidated 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 the consolidated statement of operations when they occur. If the derivative qualifies as a hedge, the accounting treatment varies based on the type of risk being hedged. Gains and losses on the effective portion of such contracts are recognized in other comprehensive income. As the contracts settle, the realized gain or loss is reclassified from other comprehensive income into the consolidated statement of operations.

The loss portfolio transfer contract includes a funds withheld arrangement that provides variable interest expense based on Aspen's investment performance. As a result, this funds withheld arrangements is considered an embedded derivative and accounted for as an option-based derivative. Since the economic characteristics and risks of an embedded derivative feature are not clearly and closely related to the economic characteristics and risks of the host contract, the embedded derivative is bifurcated and accounted for separately at fair value. The Company records subsequent changes in the embedded derivative fair value in the consolidated statement of operations.

(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. Finite intangibles are assessed on an annual basis for impairment, or more frequently where circumstances indicate the carrying value may not be recoverable. For intangible assets considered to have an indefinite life, the Company performs a qualitative assessment annually to determine whether it is more likely than not that an intangible asset 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 reported at cost less accumulated depreciation. These assets are depreciated on a straight-line basis over the estimated useful lives of the assets. Computer equipment is depreciated between three and five years, furniture and fittings are depreciated over four years and leasehold improvements are depreciated over the lesser of 15 years or the lease term.

IT development costs that are directly associated with the development of identifiable and unique software products and that are anticipated to generate economic benefits exceeding costs beyond one year, are recognized within office properties and equipment. Costs include external consultants' fees, certain qualifying internal staff costs and other costs incurred to develop software programs. Software is depreciated over their estimated useful life, between three and five years, on a straight-line basis and is subject to impairment testing annually. Depreciation commences when the asset becomes operational. Other non-qualifying costs are expensed as incurred.

(g) Accounting for Leases

In the ordinary course of the business, the Company renews and enters into new leases for office real estate and other assets. At the lease inception date, the Company determines whether a contract contains a lease and recognizes operating lease Right-of-use assets and operating lease liabilities based on the present value of future minimum lease payments. As our leases do not provide an implicit interest rate, we use our incremental borrowing rate based on the information available at the commencement date to determine the present value of future payments. 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 lease assets are reported at cost less accumulated depreciation on the consolidated balance sheet and depreciated over the lease term. The Company does not record office property and equipment leases with an initial term of 12 months or less (short-term) in the Company's consolidated balance sheets. Such short-term leases are expensed through the consolidated statement of operations.

Right-of-use operating lease assets are tested for impairments whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If the carrying value of an asset is impaired, it is reduced to the recoverable amount by an immediate charge to the income statement. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use.

(h) Accounting for Foreign Currencies Translation

The reporting currency of the Company is the U.S. Dollar. Effective January 1, 2022, management reassessed its functional currency determination in accordance with ASC 830, Foreign Currency Matters, as a result of significant changes in the group's economic facts and circumstances, and concluded that the functional currency of certain of its foreign operations had changed. Consequently, the Company has concluded that the U.S. Dollar is now the functional currency for all its branches and overseas entities. The change in the Company's functional currency determination has been applied on a prospective basis in accordance with ASC 830. Therefore, any translation gains and losses that were previously recorded in accumulated other comprehensive income through December 31, 2021 remain unchanged through December 31, 2021. From January 1, 2022, any net realized and unrealized gains/(losses) on translation are recognized in the consolidated statements of operations and other comprehensive income (loss). Investments classified as available-for-sale are recorded at fair value, the portion attributable to movements in exchange rates continues to be included within accumulated other comprehensive income.

Transactions in currencies other than the functional currency are measured 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 consolidated statement of operations. Non-monetary assets and liabilities are remeasured to functional currency at historic exchange rates.

(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 for 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 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 translation adjustments for each period, are determined under the intraperiod 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.

(l) 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.

(m) Accounting Pronouncements

Accounting Pronouncements Adopted

In March 2022, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. ASU 2022-02, "*Financial Instruments—Credit Losses (Topic 326)*". This update is as a result of a post implementation review done on the issued ASU No.2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, addressing "troubled debt restructuring by creditors" and "vintage disclosures". This update will be effective for fiscal years beginning after December 15, 2022 and interim periods within those fiscal years. During the year, the

Company evaluated and considered the provisions of this ASU update and has concluded that there is no material impact on the consolidated financial statements for the current financial year.

Accounting Pronouncements Not Yet Adopted

In March 2022, the FASB issued Accounting Standards Update No. ASU 2022-01, *“Derivatives and Hedging (Topic 815): Fair Value Hedging, Portfolio Layer Method”*. This update addresses concerns from entities and practitioners regarding the ‘last-of-layer’ method of accounting incorporated in update No. ASU 2017-12, *“Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities”*, issued on 28 August, 2017. This method is meant to achieve fair value hedge accounting for interest rate risk hedges of portfolios of ‘prepayable financial assets’. This ASU will be effective for fiscal years beginning after December 15, 2023 and interim periods within those fiscal years. During the year, the Company evaluated and considered the provisions of this ASU update and has concluded that there is no material impact on the consolidated financial statements for the current financial year.

In June 2022, the FASB issued Accounting Standards Update No. ASU 2022-03, *“Fair Value Measurement (Topic 820)”*. This update is for entities that have investments in equity securities, measured at fair value, which are subject to a contractual sale restriction. This update will be effective for fiscal years beginning after December 15, 2024 and interim periods within those fiscal years. During the year, the Company evaluated and considered the provisions of this ASU update and has concluded that there is no material impact on the consolidated financial statements for the current financial year.

In September 2022, the FASB issued Accounting Standards Update No. ASU 2022-04, *“Liabilities- Supplier Finance Programs (Subtopic 405-50)”*. The update has been issued to enhance the transparency of supplier finance program disclosure for all entities that use these programs in connection with the purchase of goods and services. During the year, the Company evaluated and considered the provisions of this ASU update and has concluded that the update has no impact, as the Company does not enter into any such agreement.

In December 2022, the FASB issued Accounting Standards Update No. ASU 2022-05, *“Financial Services- Insurance (Topic 944)”*. This update reduces the implementation costs and complexity with the adoption of Long Duration Insurance contracts (LDI) that have been derecognized in accordance with the amendments in this update. These changes eliminate the need to reclassify a portion of previously recognized gains or losses to the LDI transition adjustment as suggested in the previous ASU issued 2020-11. During the year, the Company evaluated and considered the provisions of this ASU update and has concluded that the update has no impact, as the Company does not write long-duration business.

In December 2022, the FASB issued Accounting Standards Update No. ASU 2022-06, *“Reference Rate Reform (Topic 848)”*. This update defers the sunset date of Topic 848 (ASU 2020-04) from Dec 31, 2022 to Dec 31, 2024, after which entities will no longer be allowed to use the relief offered in Topic 848. During the year, the Company evaluated and considered the provisions of this ASU update and has concluded that there is no material impact on the consolidated financial statements for the current financial year.

Other accounting pronouncements were issued during the year ended December 31, 2022 which were either not applicable to the Company or did not impact the Company’s consolidated financial statements.

3. Segment Reporting

The Company manages its underwriting operations as two business segments: Aspen Reinsurance and Aspen Insurance. The Company has determined its reportable segments 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 income or loss. Underwriting profit is the excess of net earned premiums over the sum of losses and loss expenses, acquisition costs and general and administrative expenses. Underwriting income 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.

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 first party and specialty insurance, casualty and liability insurance and financial and professional lines insurance. Additionally, the insurance segment includes Aspen Underwriting Limited's participation as a corporate member in Carbon Syndicate 4747 ("Carbon Syndicate"). 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: corporate expenses, net investment income, net realized and unrealized investment gains or losses, other 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. These income and expense items are not allocated to the Company's business segments as they are not directly related to the Company's business segment operations and is consistent with how management measures the performance of its segments. The Company does not allocate its assets by business segment.

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 acquisition cost ratio is the ratio of acquisition costs to net earned premiums. The general and administrative expense ratio is the ratio of general and administrative expenses to net earned premiums. The combined ratio is the sum of the loss ratio, the acquisition cost ratio and the general and administrative expense ratio.

The following tables provide a summary of gross and net written and earned premiums, underwriting income or loss, ratios and reserves for each of the Company's business segments for the twelve months ended December 31, 2022, 2021 and 2020:

	Twelve Months Ended December 31, 2022		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,807.0	\$ 2,531.7	\$ 4,338.7
Net written premiums	1,426.4	1,469.6	2,896.0
Gross earned premiums	1,617.2	2,370.8	3,988.0
Net earned premiums	1,251.8	1,436.9	2,688.7
Underwriting Expenses			
Losses and loss adjustment expenses	770.3	909.7	1,680.0
Acquisition costs	252.4	179.4	431.8
General and administrative expenses	142.5	244.0	386.5
Underwriting income	86.6	103.8	190.4
Corporate expenses			(71.7)
Non-operating expenses ⁽¹⁾			(36.0)
Net investment income			188.1
Realized and unrealized investment gains			5.0
Realized and unrealized investment losses			(182.6)
Change in fair value of derivatives			(80.5)
Interest expense			(43.7)
Net realized and unrealized foreign exchange gains			15.9
Other income			8.2
Other expenses			(20.1)
(Loss) before income taxes			(27.0)
Income tax benefit			78.1
Net income			\$ 51.1
Net reserves for loss and loss adjustment expenses	\$ 1,360.7	\$ 1,452.5	\$ 2,813.2
Ratios			
Loss ratio	61.5 %	63.3 %	62.5 %
Acquisition cost ratio	20.2	12.5	16.1
General and administrative expense ratio	11.4	17.0	14.4
Expense ratio	31.6	29.5	30.5
Combined ratio	93.1 %	92.8 %	93.0 %

⁽¹⁾ Non-operating expenses includes \$32.7 million in relation to fixed assets written off, \$10.0 million of severance, consulting and professional services in relation to non-recurring projects and other costs, offset by \$6.7 million of write backs related to leased office space.

	Twelve Months Ended December 31, 2021		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,597.0	\$ 2,341.4	\$ 3,938.4
Net written premiums	1,199.0	1,388.7	2,587.7
Gross earned premiums	1,479.2	2,139.1	3,618.3
Net earned premiums	1,118.8	1,291.7	2,410.5
Underwriting Expenses			
Losses and loss adjustment expenses	705.2	988.1	1,693.3
Acquisition costs	221.6	192.5	414.1
General and administrative expenses	121.3	211.8	333.1
Underwriting income/(loss)	70.7	(100.7)	(30.0)
Corporate expenses			(64.3)
Non-operating expenses ⁽¹⁾			(20.6)
Net investment income			147.5
Realized and unrealized investment gains			56.2
Realized and unrealized investment losses			(47.4)
Change in fair value of derivatives			(35.9)
Interest expense			(14.3)
Net realized and unrealized foreign exchange gains			40.0
Other income			14.7
Other expenses			(10.8)
Income before income taxes			35.1
Income tax (expense)			(5.3)
Net income			\$ 29.8
Net reserves for loss and loss adjustment expenses	\$ 2,148.4	\$ 2,165.3	\$ 4,313.7
Ratios			
Loss ratio	63.0 %	76.5 %	70.2 %
Acquisition cost ratio	19.8	14.9	17.2
General and administrative expense ratio	10.8	16.4	13.8
Expense ratio	30.6	31.3	31.0
Combined ratio	93.6 %	107.8 %	101.2 %

- ⁽¹⁾ Non-operating expenses includes \$19.3 million of costs related to consulting and professional services in relation to non-recurring projects and other costs, \$0.4 million of impairment charges related to lease assets as a result of exiting certain office space and \$0.9 million of amortization of intangible assets and other non-operating expenses.

	Twelve Months Ended December 31, 2020		
	Reinsurance	Insurance	Total
	(\$ in millions)		
Underwriting Revenues			
Gross written premiums	\$ 1,656.4	\$ 2,042.1	\$ 3,698.5
Net written premiums	1,297.7	1,280.1	2,577.8
Gross earned premiums	1,612.0	2,026.4	3,638.4
Net earned premiums	1,287.7	1,239.8	2,527.5
Underwriting Expenses			
Losses and loss adjustment expenses	958.6	882.2	1,840.8
Acquisition costs	246.0	219.7	465.7
General and administrative expenses	110.8	197.2	308.0
Underwriting (loss)	(27.7)	(59.3)	(87.0)
Corporate expenses			(70.2)
Non-operating expenses ⁽¹⁾			(32.7)
Net investment income			154.6
Realized and unrealized investment gains			98.5
Realized and unrealized investment losses			(27.4)
Change in fair value of derivatives			(65.1)
Interest expense			(33.9)
Net realized and unrealized foreign exchange (losses)			(13.8)
Other income			49.8
Other expenses			(10.8)
(Loss) before income taxes			(38.0)
Income tax (expense)			(18.4)
Net (loss)			\$ (56.4)
Net reserves for loss and loss adjustment expenses	\$ 2,095.7	\$ 1,874.4	\$ 3,970.1
Ratios			
Loss ratio	74.4 %	71.1 %	72.8 %
Acquisition cost ratio	19.1	17.7	18.4
General and administrative expense ratio	8.6	15.9	12.2
Expense ratio	27.7	33.6	30.6
Combined ratio	102.1 %	104.7 %	103.4 %

⁽¹⁾ Non-operating expenses includes \$18.2 million of expenses related to severance, retention and other costs, \$12.9 million of impairment charges related to lease assets as a result of sub-leasing certain office space and \$1.6 million of amortization of intangible assets and other 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, 2022, 2021 and 2020.

	For the Twelve Months Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	(\$ in millions)		
Australia/Asia	\$ 257.5	\$ 275.8	\$ 259.7
Europe	194.5	140.6	92.5
United Kingdom	485.8	393.2	369.0
United States & Canada ⁽¹⁾	2,715.7	2,301.8	2,267.5
Worldwide excluding United States ⁽²⁾	24.2	31.5	23.1
Worldwide including United States ⁽³⁾	541.7	592.2	501.2
Other ⁽⁴⁾	119.3	203.3	185.5
Total	<u>\$ 4,338.7</u>	<u>\$ 3,938.4</u>	<u>\$ 3,698.5</u>

(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" consists of individual policies that insure global risks with the specific exclusion of the United States.

(3) "Worldwide including the United States" consists of individual policies that insure global risks with the specific inclusion of the United States.

(4) "Other" comprises individual policies that insure risk in other countries including, but not limited to, the Caribbean, South America and Middle East.

4. Investments

Income Statement

Net investment income. The following table summarizes investment income for the twelve months ended December 31, 2022, 2021 and 2020:

	For the Twelve Months Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	(\$ in millions)		
Fixed income securities — Available for sale	\$ 95.6	\$ 87.2	\$ 106.5
Fixed income securities — Trading	57.0	30.2	32.8
Short-term investments — Available for sale	0.6	0.1	0.8
Short-term investments — Trading	0.1	—	0.5
Fixed term deposits (included in cash and cash equivalents)	6.6	0.7	6.4
Catastrophe bonds — Trading	0.3	0.9	1.4
Privately-held investments — Trading	24.3	18.2	20.9
Other investments, at fair value ⁽¹⁾	13.9	21.9	(2.0)
Total	<u>198.4</u>	<u>159.2</u>	<u>167.3</u>
Investment expenses	(10.3)	(11.7)	(12.7)
Net investment income	<u>\$ 188.1</u>	<u>\$ 147.5</u>	<u>\$ 154.6</u>

(1) Other investments represents the Company's investments in real estate funds and other special purpose vehicles. The movement in the year represents the change in fair value of the investment and has been included as part of our investment income.

The following table summarizes the net realized and unrealized investment gains and losses recorded in the consolidated 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, 2022, 2021 and 2020:

	For the Twelve Months Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	(\$ in millions)		
Available for sale:			
Fixed income securities — gross realized gains	\$ 2.9	\$ 22.7	\$ 68.8
Fixed income securities — gross realized (losses)	(58.4)	(3.6)	(1.8)
Short-term investments — gross realized gains	1.0	2.0	0.5
Short-term investments — gross realized (losses)	(0.5)	(0.8)	(0.4)
Net change in expected credit (losses)/gains	(5.0)	(2.5)	0.4
Trading:			
Fixed income securities — gross realized gains	0.2	12.2	18.2
Fixed income securities — gross realized (losses)	(1.8)	(2.0)	(3.8)
Short-term investments — gross realized gains	—	0.1	0.2
Short-term investments — gross realized (losses)	—	(0.3)	(0.3)
Privately-held investments — gross realized gains	0.7	0.6	—
Privately-held investments — gross realized (losses)	(0.1)	(13.8)	—
Privately-held investments — net unrealized (losses)/gains	(2.5)	18.1	(20.4)
Catastrophe bonds — net unrealized gains/(losses)	0.2	(0.8)	—
Fixed income securities — net unrealized (losses)	(113.9)	(23.4)	—
Investments — equity method:			
Gross realized and unrealized gains/(losses) in MVI	—	0.1	(0.4)
Gross unrealized (losses)/gains in Multi-Line Reinsurer	(0.4)	0.2	—
Gross realized and unrealized (losses)/gains in Digital Risk	—	—	(0.3)
Gross realized gain on sale of Bene	—	—	1.8
Gross realized gain on sale of Crop Re	—	—	8.6
Total net realized and unrealized investment (losses)/gains recorded in the consolidated statement of operations	<u>\$ (177.6)</u>	<u>\$ 8.8</u>	<u>\$ 71.1</u>
Change in available for sale net unrealized (losses)/gains:			
Fixed income securities	(391.7)	(157.6)	108.5
Income tax benefit/(expense)	23.9	(0.3)	(0.5)
Total change in net unrealized (losses)/gains, net of taxes recorded in other comprehensive income	<u>\$ (367.8)</u>	<u>\$ (157.9)</u>	<u>\$ 108.0</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, 2022 and December 31, 2021:

	As at December 31, 2022				
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit Losses ⁽¹⁾	Fair Market Value
	(\$ in millions)				
U.S. government	\$ 1,003.7	\$ —	\$ (50.7)	\$ —	\$ 953.0
U.S. agency	9.2	—	(0.4)	—	8.8
Municipal	159.9	—	(9.4)	(1.0)	149.5
Corporate	2,016.9	3.5	(169.1)	(6.3)	1,845.0
Non-U.S. government-backed corporate	119.4	—	(8.8)	(0.2)	110.4
Non-U.S. government	225.2	0.1	(11.5)	(0.2)	213.6
Non-agency commercial mortgage-backed	6.6	—	(1.0)	—	5.6
Agency mortgage-backed	590.4	—	(87.7)	—	502.7
Total fixed income securities — Available for sale	4,131.3	3.6	(338.6)	(7.7)	3,788.6
Total short-term investments — Available for sale	52.4	—	(0.4)	—	52.0
Total	\$ 4,183.7	\$ 3.6	\$ (339.0)	\$ (7.7)	\$ 3,840.6

⁽¹⁾ For the twelve months ended December 31, 2022, there was an increase in the CECL allowance on available-for-sale investments of \$5.0 million (December 31, 2021 — \$2.5 million decrease).

	As at December 31, 2021				
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit Losses	Fair Market Value
	(\$ in millions)				
U.S. government	\$ 1,066.2	\$ 24.0	\$ (5.9)	\$ —	\$ 1,084.3
U.S. agency	20.7	0.8	—	—	21.5
Municipal	81.2	2.0	(0.5)	(0.1)	82.6
Corporate	2,176.1	47.5	(13.0)	(2.3)	2,208.3
Non-U.S. government-backed corporate	138.5	0.2	(1.9)	—	136.8
Non-U.S. government	250.8	1.4	(1.2)	(0.3)	250.7
Asset-backed	0.5	—	—	—	0.5
Non-agency commercial mortgage-backed	6.6	0.3	—	—	6.9
Agency mortgage-backed	1,082.9	19.1	(12.0)	—	1,090.0
Total fixed income securities — Available for sale	4,823.5	95.3	(34.5)	(2.7)	4,881.6
Total short-term investments — Available for sale	10.1	—	—	—	10.1
Total	\$ 4,833.6	\$ 95.3	\$ (34.5)	\$ (2.7)	\$ 4,891.7

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, 2022 and December 31, 2021:

As at December 31, 2022				
	Cost or Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Market Value
	(\$ in millions)			
Fixed Income Securities — Trading				
U.S. government	\$ 267.9	\$ —	\$ (6.3)	\$ 261.6
Municipal	3.9	—	(0.3)	3.6
Corporate	175.3	0.3	(13.5)	162.1
High yield loans	90.2	0.2	(2.1)	88.3
Non-U.S. government-backed corporate	12.2	—	(0.6)	11.6
Non-U.S. government	32.2	—	(1.8)	30.4
Asset-backed	970.3	0.2	(74.0)	896.5
Agency mortgage-backed	24.7	—	(3.3)	21.4
Total fixed income securities — Trading	1,576.7	0.7	(101.9)	1,475.5
Short-term investments — Trading	6.3	—	—	6.3
Catastrophe bonds — Trading	5.1	—	(2.2)	2.9
Privately-held investments — Trading				
Commercial mortgage loans	\$ 312.6	\$ 0.6	\$ (1.1)	\$ 312.1
Middle market loans	109.0	—	(2.1)	106.9
Asset-backed securities	68.8	—	(2.0)	66.8
Global corporate securities	15.1	—	(0.1)	15.0
Equity securities	6.6	—	—	6.6
Short-term investments	25.6	—	—	25.6
Total privately-held investments — Trading	537.7	0.6	(5.3)	533.0
Total Investments — Trading	\$ 2,125.8	\$ 1.3	\$ (109.4)	\$ 2,017.7

	As at December 31, 2021			
	Cost or	Gross	Gross	Fair Market
	Amortized Cost	Unrealized Gains	Unrealized Losses	Value
	(\$ in millions)			
Fixed Income Securities — Trading				
U.S. government	\$ 115.9	\$ 0.6	\$ (0.2)	\$ 116.3
Municipal	3.9	0.1	—	4.0
Corporate	95.7	1.9	(0.8)	96.8
High yield loans	77.2	0.1	(0.4)	76.9
Non-U.S. government-backed corporate	13.3	—	(0.2)	13.1
Non-U.S. government	34.9	—	(0.4)	34.5
Asset-backed	784.3	3.3	(1.9)	785.7
Agency mortgage-backed	30.3	0.2	(0.3)	30.2
Total fixed income securities — Trading	1,155.5	6.2	(4.2)	1,157.5
Short-term investments — Trading	2.0	—	—	2.0
Catastrophe bonds — Trading	5.3	—	(1.9)	3.4
Privately-held investments — Trading				
Commercial mortgage loans	\$ 212.0	0.4	(0.9)	\$ 211.5
Middle market loans	66.9	—	(1.5)	65.4
Asset-backed securities	26.8	—	(0.2)	26.6
Equity securities	3.5	0.1	—	3.6
Total privately-held investments — Trading	309.2	0.5	(2.6)	307.1
Total Investments — Trading	\$ 1,472.0	\$ 6.7	\$ (8.7)	\$ 1,470.0

Catastrophe bonds. The Company has invested in catastrophe bonds with a total value of \$2.9 million as at December 31, 2022 (December 31, 2021 — \$3.4 million). The bonds are either zero-coupon notes or receive quarterly interest payments based on variable interest rates with scheduled maturities ranging from 2023 to 2026. 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 \$312.1 million and middle market loans of \$106.9 million as at December 31, 2022 (December 31, 2021 — commercial mortgage loans of \$211.5 million; middle market loans of \$65.4 million). Privately-held investments also includes investments in asset-backed securities, equity securities and other short term investments.

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, 2022 and December 31, 2021:

	As at December 31, 2022		As at December 31, 2021	
	Net Carrying Value	Percentage of Total	Net Carrying Value	Percentage of Total
	(\$ millions)	(%)	(\$ millions)	(%)
Property type				
Apartment	115.3	36.9	101.6	48.1
Hotels	108.0	34.6	68.8	32.5
Office building	42.1	13.5	33.9	16.0
Other commercial	41.4	13.3	7.2	3.4
Retail	3.3	1.1	—	—
Industrial	2.0	0.6	—	—
Total commercial mortgage loans	<u>\$ 312.1</u>	<u>100 %</u>	<u>211.5</u>	<u>100 %</u>
Geographic Region				
U.S.	269.8	86.4	183.7	86.9
International	42.3	13.6	27.8	13.1
Total commercial mortgage loans	<u>\$ 312.1</u>	<u>100 %</u>	<u>211.5</u>	<u>100 %</u>

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, 2022, none of our commercial mortgage loans were non-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, 2022 and December 31, 2021:

	As at December 31, 2022	As at December 31, 2021
	(in millions)	
Less than 50%	\$ 41.1	\$ —
50% to 60%	248.3	131.2
61% to 70%	22.7	80.3
Commercial mortgage loans	<u>\$ 312.1</u>	<u>\$ 211.5</u>

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, excluding those that are non-performing and construction loans which are still under development, as at December 31, 2022 and December 31, 2021:

	As at December 31, 2022	As at December 31, 2021
	(in millions)	
Greater than 1.20x	\$ 106.1	\$ 66.3
1.00 - 1.20x	186.1	62.4
Less than 1.00x	—	18.8
Commercial mortgage loans ⁽¹⁾	\$ 292.2	\$ 147.5

- ⁽¹⁾ As at December 31, 2022, we have non-performing loans of \$Nil (December 31, 2021 — \$Nil) and construction loans of \$19.9 million (December 31, 2021 — \$64.0 million) which only generate income when the construction is completed. As no income is currently being generated on these loans, they are not included in the table above. The total value of commercial mortgage loans is \$312.1 million as at December 31, 2022 (December 31, 2021 — \$211.5 million).

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., Europe and the Caribbean. 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, 2022 and December 31, 2021:

	As at December 31, 2022		As at December 31, 2021	
	Net Carrying Value	Percentage of Total	Net Carrying Value	Percentage of Total
	(\$ millions)	(%)	(\$ millions)	(%)
Industry type				
Materials	19.8	18.5	20.9	32.0
Financials	53.1	49.7	6.1	9.3
Industrials	18.7	17.5	18.7	28.5
Consumer discretionary	4.9	4.6	4.3	6.6
Energy	5.7	5.3	5.6	8.6
Consumer staples	—	—	4.9	7.5
Information technology	4.7	4.4	4.9	7.5
Total middle market mortgage loans	\$ 106.9	100 %	\$ 65.4	100 %
Geographic Region				
U.S.	64.1	59.9	56.2	85.9
International	42.8	40.1	9.2	14.1
Total middle market loans	\$ 106.9	100 %	\$ 65.4	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, 2022, 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, 2022 and December 31, 2021:

	As at December 31, 2022	As at December 31, 2021
	(in millions)	
Less than 50%	\$ 63.5	\$ 11.0
50% to 60%	16.4	9.2
61% to 70%	27.0	15.8
71% to 80%	—	5.6
81% to 100%	—	12.0
Greater than 100%	—	11.8
Middle market loans	\$ 106.9	\$ 65.4

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, 2022 and December 31, 2021:

	As at December 31, 2022	As at December 31, 2021
	(in millions)	
Greater than 1.20x	\$ 95.2	\$ 25.8
1.00 - 1.20x	3.8	22.8
Less than 1.00x	7.9	16.8
Middle market loans	\$ 106.9	\$ 65.4

The Company has individually assessed each of the middle market loans with the fixed charge coverage ratio of less than 1.00x. This is mainly due to increased capital investment to support the increased business post COVID-19. These investments have been performing with the fixed charged increasing over the year.

Asset-backed securities. Asset-backed securities represent interests in underlying pools of diversified referenced assets that are collateralised and backed by future cash flows and these securities are performing.

Global corporate securities. The Global corporates portfolio consists of debt securities with a non-U.S. debt issuer that are backed by the cash flows generated from real estate holdings and these securities are performing.

Equity securities. Equity securities consists of a single non-U.S. private issuer that is a special purpose vehicle designed to grant a first lien right to the underlying senior notes. 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. In March 2021, the Company committed an additional \$0.8 million equity contribution to MVI over a 2 year period and paid \$0.4 million in the period ending December 31, 2022 (December 31, 2021 — \$0.4 million).

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 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. During the period ending December 31, 2022, \$1.6 million (December 31, 2021 — \$2.5 million) capital was invested in multi-line reinsurer.

The table below shows the Company's investments in MVI, Multi-Line Reinsurer and Digital Re for the twelve months ended December 31, 2022 and 2021:

	MVI	Multi-Line Reinsurer	Digital Re	Total
	(\$ in millions)			
Opening undistributed value of investment as at January 1, 2022	\$ 0.5	\$ 3.2	\$ 0.2	\$ 3.9
Investment in the period	0.4	1.6	—	2.0
Distribution received	—	—	—	—
Unrealized (loss)/gain for the twelve months to December 31, 2022	(0.1)	0.4	—	0.3
Closing value of investment as at December 31, 2022	0.8	5.2	0.2	6.2
Opening undistributed value of investment as at January 1, 2021	\$ —	\$ 0.5	\$ 0.4	\$ 0.9
Investment in the period	0.4	2.5	0.3	3.2
Distribution received	—	—	(0.5)	(0.5)
Unrealized gain for the twelve months to December 31, 2021	0.1	0.2	—	0.3
Closing value of investments at December 31, 2021	\$ 0.5	\$ 3.2	\$ 0.2	\$ 3.9

Other 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. As at December 31, 2022, the current fair value of the fund is \$134.6 million (2021 — \$129.9 million).

On September 30, 2021, the Company committed \$20.0 million as a limited partner to a third party managed real estate fund. The Partnership was established to make equity and equity related investments in multifamily and other commercial real estate properties located in the United States and its territories, with the goal of generating superior risk-adjusted returns. The Partnership seeks to acquire commercial real estate assets including real estate assets (or interests therein) that may have management or operational problems and require improvements or lack sufficient capital, including mortgage loans and development or redevelopment properties. On April 1, 2022, the Company committed an additional \$10.0 million to the fund. As at December 31, 2022, the current fair value of the fund is \$40.6 million (2021 — \$21.4 million) and the unfunded commitment is \$3.3 million.

On April 1, 2022, the Company committed \$30.0 million as a limited partner to a related party managed real estate fund. The Partnership was established to pursue investment opportunities to acquire, recapitalize, restructure and reposition real estate assets, portfolios and companies primarily in the United States. As at December 31, 2022, the current fair value of the fund is \$25.3 million and the unfunded commitment is \$5.3 million.

On May 5, 2022, the Company committed \$15.0 million as a limited partner to a third party managed infrastructure fund. The Partnership was established to make investments in value added infrastructure investments in environmental services, transportation, communications and digital, energy/energy transition and other infrastructure sectors primarily in North America. As at December 31, 2022, the current fair value of the fund is \$8.2 million and the unfunded commitment is \$8.4 million.

As at December 31, 2022, the aggregate current fair value of the real estate funds investments described above is \$221.3 million (2021 — \$151.3 million).

For further information on the real estate funds, refer to Note 20(a) in these consolidated financial statements, "Commitments and Contingencies."

Fixed income maturities, Available for sale. The scheduled maturity distribution of the Company's available for sale fixed income securities as at December 31, 2022 and December 31, 2021 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, 2022			
	Amortized Cost or Cost	Fair Market Value	Average S&P Ratings by Maturity
	(\$ in millions)		
Due one year or less	\$ 179.1	\$ 176.0	AA+
Due after one year through five years	2,526.9	2,385.7	AA-
Due after five years through ten years	815.1	707.7	A+
Due after ten years	13.2	10.9	A-
Total — Government and corporate	3,534.3	3,280.3	
Non-agency commercial mortgage-backed	6.6	5.6	AA+
Agency mortgage-backed	590.4	502.7	AA+
Total fixed income securities — Available for sale	\$ 4,131.3	\$ 3,788.6	
At December 31, 2021			
	Amortized Cost or Cost	Fair Market Value	Average S&P Ratings by Maturity
	(\$ in millions)		
Due one year or less	\$ 545.1	\$ 549.0	AA-
Due after one year through five years	2,057.2	2,087.5	AA-
Due after five years through ten years	1,090.5	1,106.3	A+
Due after ten years	40.7	41.4	A-
Total — Government and corporate	3,733.5	3,784.2	
Non-agency commercial mortgage-backed	6.6	6.9	AA+
Agency mortgage-backed	1,082.9	1,090.0	AA+
Asset-backed	0.5	0.5	AAA
Total fixed income securities — Available for sale	\$ 4,823.5	\$ 4,881.6	

Guaranteed Investments. As at December 31, 2022 and December 31, 2021, 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, available for sale. 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, 2022 and December 31, 2021:

December 31, 2022							
	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	\$ 741.1	\$ (30.6)	\$ 203.4	\$ (20.1)	\$ 944.5	\$ (50.7)	118
U.S. agency	7.1	(0.4)	1.7	—	8.8	(0.4)	5
Municipal	133.1	(7.1)	16.4	(2.3)	149.5	(9.4)	59
Corporate	1,104.7	(77.6)	568.2	(91.5)	1,672.9	(169.1)	701
Non-U.S. government-backed corporate	11.3	(0.5)	99.0	(8.3)	110.3	(8.8)	16
Non-U.S. government	63.8	(2.9)	135.9	(8.6)	199.7	(11.5)	45
Non-agency commercial mortgage-backed	5.6	(1.0)	—	—	5.6	(1.0)	1
Agency mortgage-backed	202.8	(24.9)	299.1	(62.8)	501.9	(87.7)	220
Total fixed income securities — Available for sale	2,269.5	(145.0)	1,323.7	(193.6)	3,593.2	(338.6)	1,165
Total short-term investments — Available for sale	51.9	(0.4)	—	—	51.9	(0.4)	1
Total	\$ 2,321.4	\$ (145.4)	\$ 1,323.7	\$ (193.6)	\$ 3,645.1	\$ (339.0)	1,166

December 31, 2021							
	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	\$ 309.1	\$ (4.0)	\$ 29.3	\$ (1.9)	\$ 338.4	\$ (5.9)	51
U.S. agency	6.1	—	—	—	6.1	—	5
Municipal	29.7	(0.5)	—	—	29.7	(0.5)	20
Corporate	804.6	(11.7)	23.6	(1.3)	828.2	(13.0)	400
Non-U.S. government-backed corporate	114.4	(1.9)	—	—	114.4	(1.9)	10
Non-U.S. government	181.8	(1.2)	3.1	—	184.9	(1.2)	35
Agency mortgage-backed	564.5	(11.6)	16.0	(0.4)	580.5	(12.0)	116
Total fixed income securities — Available for sale	2,010.2	(30.9)	72.0	(3.6)	2,082.2	(34.5)	637
Total short-term investments — Available for sale	4.4	—	—	—	4.4	—	7
Total	\$ 2,014.6	\$ (30.9)	\$ 72.0	\$ (3.6)	\$ 2,086.6	\$ (34.5)	644

The increase in gross unrealized losses is largely attributable to the impact of rising interest rates on our bond portfolio and mortgage-backed securities.

5. Variable Interest Entities

As at December 31, 2022, the Company held an investment in one (December 31, 2021 — one) 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, 2022, Peregrine had six segregated

accounts which were funded by third-party investors, which are not consolidated, and two segregated accounts which are funded by Aspen and are consolidated within the financial statements.

The Company has determined that Peregrine has the characteristics of a VIE as addressed by the guidance in ASC 810, *Consolidation*. The six 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.

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, 2022 and December 31, 2021:

	As at December 31, 2022			
	Level 1	Level 2	Level 3	Total
	(\$ in millions)			
Available for sale financial assets, at fair value				
U.S. government	\$ 953.0	\$ —	\$ —	\$ 953.0
U.S. agency	—	8.8	—	8.8
Municipal	—	149.5	—	149.5
Corporate	—	1,845.0	—	1,845.0
Non-U.S. government-backed corporate	—	110.4	—	110.4
Non-U.S. government	145.3	68.3	—	213.6
Asset-backed	—	—	—	—
Non-agency commercial mortgage-backed	—	5.6	—	5.6
Agency mortgage-backed	—	502.7	—	502.7
Total fixed income securities available for sale, at fair value	1,098.3	2,690.3	—	3,788.6
Short-term investments available for sale, at fair value	51.9	0.1	—	52.0
Held for trading financial assets, at fair value				
U.S. government	261.6	—	—	261.6
Municipal	—	3.6	—	3.6
Corporate	—	162.1	—	162.1
Non-U.S. government-backed corporate	—	11.6	—	11.6
High yield loans	—	88.3	—	88.3
Non-U.S. government	10.6	19.8	—	30.4
Asset-backed	—	896.5	—	896.5
Agency mortgage-backed	—	21.4	—	21.4
Total fixed income securities trading, at fair value	272.2	1,203.3	—	1,475.5
Short-term investments trading, at fair value	6.3	—	—	6.3
Catastrophe bonds trading, at fair value	—	2.9	—	2.9
Privately-held investments trading, at fair value	—	—	533.0	533.0
Other investments ⁽¹⁾	—	—	—	221.3
Other financial assets and liabilities, at fair value				
Derivatives at fair value — foreign exchange contracts	—	56.2	—	56.2
Liabilities under derivative contracts — foreign exchange contracts	—	(3.2)	—	(3.2)
Liabilities under derivative contracts — loss portfolio transfer ⁽²⁾	—	—	(31.7)	(31.7)
Total	1,428.7	3,949.6	501.3	6,100.9

⁽¹⁾ Other investments represents our investments in real estate and other special purpose vehicles and are 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 and other funds is subject to restrictions as detailed in Note 20(a), "Commitments and Contingencies."

⁽²⁾ The loss portfolio transfer contract includes a funds withheld arrangement that provides variable interest expense based on Aspen's investment performance. As a result, this funds withheld arrangement is considered an embedded derivative and accounted for as an option-based derivative.

	At December 31, 2021			
	Level 1	Level 2	Level 3	Total
	(\$ in millions)			
Available for sale financial assets, at fair value				
U.S. government	\$ 1,084.3	\$ —	\$ —	\$ 1,084.3
U.S. agency	—	21.5	—	21.5
Municipal	—	82.6	—	82.6
Corporate	—	2,208.3	—	2,208.3
Non-U.S. government-backed corporate	—	136.8	—	136.8
Non-U.S. government	164.4	86.3	—	250.7
Asset-backed	—	0.5	—	0.5
Non-agency commercial mortgage-backed	—	6.9	—	6.9
Agency mortgage-backed	—	1,090.0	—	1,090.0
Total fixed income securities available for sale, at fair value	1,248.7	3,632.9	—	4,881.6
Short-term investments available for sale, at fair value	6.5	3.6	—	10.1
Held for trading financial assets, at fair value				
U.S. government	116.3	—	—	116.3
Municipal	—	4.0	—	4.0
Corporate	—	96.8	—	96.8
Non-U.S. government-backed corporate	—	13.1	—	13.1
High yield loans	—	76.9	—	76.9
Non-U.S. government	11.9	22.6	—	34.5
Asset-backed	—	785.7	—	785.7
Agency mortgage-backed	—	30.2	—	30.2
Total fixed income securities trading, at fair value	128.2	1,029.3	—	1,157.5
Short-term investments trading, at fair value	1.1	0.9	—	2.0
Privately-held investments	—	—	307.1	307.1
Catastrophe bonds trading, at fair value	—	3.4	—	3.4
Other investments ⁽¹⁾	—	—	—	151.3
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	—	(13.3)	—	(13.3)
Total	\$ 1,384.5	\$ 4,669.7	\$ 307.1	\$ 6,512.6

⁽¹⁾ Other investments represents our investments in real estate funds and are 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 funds 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, 2022, \$Nil (December 31, 2021 — \$19.5 million was transferred into Level 3) was transferred in or out of Level 3.

As at December 31, 2022, there were privately-held investments carried at \$533.0 million (December 31, 2021 — \$307.1 million) classified as Level 3. As a result of loans sold by Aspen and loans repaid to Aspen by borrowers, a net settlement of \$147.4 million occurred during the year. Additionally as at December 31, 2022, there was an embedded derivative as part of the loss portfolio transfer agreement worth \$31.7 million classified as Level 3.

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, 2022 and December 31, 2021:

Twelve Months Ended December 31, 2022	Balance at beginning of year	Purchases and issuances	Transfers in/(out)	Settlements and sales	Increase/ (decrease) in fair value including 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	\$ 211.5	\$ 215.7	\$ —	\$ (113.1)	\$ (2.0)	\$ 312.1	\$ (0.5)
Middle market loans	65.3	61.8	—	(19.3)	(0.9)	106.9	(2.1)
Asset-backed securities	26.7	54.5	—	(12.6)	(1.8)	66.8	(2.0)
Global corporate securities	—	15.1	—	—	(0.1)	15.0	—
Equity securities	3.6	5.5	—	(2.4)	(0.1)	6.6	—
Short-term investments	—	25.6	—	—	—	25.6	—
Total Level 3 assets	\$ 307.1	\$ 378.2	\$ —	\$ (147.4)	\$ (4.9)	\$ 533.0	\$ (4.6)
Liabilities							
Liabilities under derivative contracts - loss	\$ —	\$ (17.2)	\$ —	\$ —	\$ (14.5)	\$ (31.7)	\$ —
Total Level 3 liabilities	\$ —	\$ (17.2)	\$ —	\$ —	\$ (14.5)	\$ (31.7)	\$ —
Twelve Months Ended December 31, 2021							
Assets							
Privately-held investments — trading							
Commercial mortgage loans	\$ 163.6	\$ 169.9	\$ —	\$ (122.5)	\$ 0.5	\$ 211.5	\$ (0.5)
Middle market loans	112.1	5.6	—	(56.1)	3.7	65.3	(1.5)
Asset-backed securities	18.6	10.0	—	(1.8)	(0.1)	26.7	(0.2)
Equity securities	5.0	0.1	—	(1.6)	0.1	3.6	—
Preference shares	—	19.5	(19.5)	—	—	—	—
Total Level 3 assets	\$ 299.3	\$ 205.1	\$ (19.5)	\$ (182.0)	\$ 4.2	\$ 307.1	\$ (2.2)

Valuation of Fixed Income Securities. The Company's fixed income securities are classified as either available for sale or trading and are reported at fair value. As at December 31, 2022 and December 31, 2021, 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, 2022, the Company obtained an average of 2.9 quotes per fixed income investment compared to 3.0 quotes at December 31, 2021.

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 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 these securities across Level 1 and 2, with majority of them being in Level 1.

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.

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.

Commercial mortgage loans. Commercial mortgage loans consists in 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. Commercial Mortgage Loans 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 and are classified as Level 3.

Middle market loans. The middle market loans consist in investments in senior secured loan positions with full covenants, focused on the middle market in both U.S., Europe and the Caribbean. The middle market loan portfolio is diversified by industry type, geographic region and issuer to reduce risks. Middle Market Loans 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 and are classified as Level 3.

Asset-backed securities. Asset-backed securities represent interests in underlying pools of diversified referenced assets that are collateralised and backed by future cash flows and these securities are performing. The fair values of these securities are determined by using discounted cash flow models and are classified as Level 3.

Global corporate securities. The global corporates portfolio consists of debt securities with a non-U.S. debt issuer that are backed by the cash flows generated from real estate holdings and these securities are performing. The fair value of these securities are determined by using discounted cash flow models and are classified as Level 3.

Equity securities. Equity securities 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. The valuation of the investments is DCF and the securities are classified as Level 3.

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.

The following table summarizes the quantitative inputs and assumptions used for financial assets and liabilities investments categorized as Level 3 under the fair value hierarchy as at December 31, 2022:

At December 31, 2022	Fair Value Level 3	Valuation Techniques	Unobservable (U) inputs	Ranges	Weighted Average
	(\$ in millions)				
Privately-held investments — Trading					
Commercial mortgage loans	\$ 200.7	Discounted cash flow	Discount rate	3.9% – 9.4%	5.3%
Commercial mortgage loans	85.8	Transaction Value	n/a	n/a	n/a
Commercial mortgage loans	25.6	Liquidation method	n/a	n/a	n/a
Middle market loans	106.9	Discounted cash flow	Discount rate	7.4% – 18.5%	9.9%
Asset-backed securities	66.8	Discounted cash flow	Discount rate	5.8% – 9.3%	6.7%
Global corporate securities	15.0	Discounted cash flow	Discount rate	6.4% – 6.4%	6.4%
Equity securities	5.3	Discounted cash flow	Discount rate	9.0% – 12.5%	9.1%
Equity securities	1.3	Transaction Value	n/a	n/a	n/a
Short-term investments	25.6	Discounted cash flow	Discount rate	6.4% – 6.4%	6.4%
Total	<u><u>\$ 533.0</u></u>				

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 reported 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.

Liabilities under derivative contracts - loss portfolio transfer. LPT embedded derivative is valued in a Black-Scholes framework. The two primary inputs of this policy are expected claim settlement patterns and expected return of the investment portfolio above a fixed minimum rate over the specified time horizon. The expected claim settlement pattern is determined on an actuarial basis for the cohort of business within scope of the LPT and is consistent with the patterns used in the valuation of technical provisions. The expected return of the investment portfolio, above a fixed minimum rate, directly impacts on the LPT derivative valuation and is subject to changes in the market conditions. In order to assess the reasonableness of the inputs, the company updates the expected claim settlement patterns on a regular basis whilst maintaining an understanding of the current market conditions.

Other investments. The Company's other investments represent our investments in real estate funds and other special purpose vehicles. Adjustments to the fair values are made based on the net asset value of the investments. 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 include: the discounted cash flows method and the performance multiple approach, which uses a multiple derived from market data of comparable companies or assets to produce operating performance metrics. Alternative valuation methodologies may be employed for investments with unusual characteristics.

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 losses and loss adjustment expenses from reinsurers. 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 21, "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, 2022, 2021 and 2020 was as follows:

	Twelve Months Ended December 31,		
	2022	2021	2020
	(\$ in millions)		
Premiums written:			
Direct	\$ 2,531.7	\$ 2,341.4	\$ 2,042.1
Assumed	1,807.0	1,597.0	1,656.4
Ceded	(1,442.7)	(1,350.7)	(1,120.7)
Net premiums written	<u>\$ 2,896.0</u>	<u>\$ 2,587.7</u>	<u>\$ 2,577.8</u>
Premiums earned:			
Direct	\$ 2,370.8	\$ 2,139.1	\$ 2,026.4
Assumed	1,617.2	1,479.2	1,612.0
Ceded	(1,299.3)	(1,207.8)	(1,110.9)
Net premiums earned	<u>\$ 2,688.7</u>	<u>\$ 2,410.5</u>	<u>\$ 2,527.5</u>
Insurance losses and loss adjustment expenses:			
Direct	\$ 1,574.2	\$ 1,499.8	\$ 1,479.6
Assumed	939.5	1,000.6	1,134.5
Ceded	(833.7)	(807.1)	(773.3)
Net insurance losses and loss adjustment expenses	<u>\$ 1,680.0</u>	<u>\$ 1,693.3</u>	<u>\$ 1,840.8</u>

On January 10, 2022, Aspen Holdings and certain of its subsidiaries ("Aspen") entered into an Amended and Restated Reinsurance Agreement with a subsidiary of Enstar Group Limited (together, "Enstar") (the "LPT"), which amended and restated the Adverse Development Cover Agreement, dated as of March 2, 2020, previously entered into between Enstar and Aspen Group (the "Original Agreement"). Under the terms of the LPT, Enstar's subsidiary will reinsure net losses incurred on or prior to December 31, 2019 on all of Aspen's net loss reserves of \$3,120.0 million as of September 30, 2021. The LPT provides for a limit of \$3,570.0 million in consideration for a premium of \$3,160.0 million. The amount of net loss reserves ceded, as well as the premium and limit amounts provided under the LPT, was adjusted for claims paid between October 1, 2021 and the closing date of the transaction. The premium includes \$770 million of premium previously paid with respect to reserves ceded under the Original Agreement, which will continue to be held in trust accounts to secure the Enstar subsidiary's obligations under the LPT. The incremental new premium will initially be held in funds withheld accounts in their original currencies maintained by Aspen but will be released to the trust accounts maintained by the Enstar subsidiary no later than September 30, 2025. The funds withheld by Aspen will be credited with interest at an annual rate of 1.75% plus, for periods after October 1, 2022, an additional amount equal to 50% of the amount by which the total return on Aspen's investments and cash and cash equivalents exceeds 1.75%. Under the LPT, the Enstar subsidiary assumed claims control, pursuant to the provisions of an administrative services agreement subsequently entered into between the parties on June 30, 2022.

Current expected loss model ("CECL"). On June 16, 2016, the FASB issued ASU 2016-13, "Financial Instruments - Credit Losses (Topic 326)" which introduced a new impairment model, known as the current expected loss model ("CECL"), which is based on expected losses rather than incurred losses. Following the adoption of CECL with effect from January 1,

2020, the Company recognized a reduction in the Company's reinsurance recoverables by \$3.7 million as at December 31, 2022 (2021 — \$3.3 million).

For the twelve months ended December 31, 2022 there was an increase in the CECL allowance on reinsurance recoverables of \$0.4 million (December 31, 2021 — \$0.5 million decrease).

The Company is potentially exposed to concentrations of credit risk in respect of amounts recoverable from reinsurers, refer to Note 21, "Concentrations of Credit Risk — Reinsurance recoverables" of these consolidated financial statements for more detail.

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, 2022 and 2021:

Derivatives Not Designated as Hedging Instruments Under ASC 815	Balance Sheet Location	As at December 31, 2022		As at December 31, 2021	
		Notional Amount	Fair Value	Notional Amount	Fair Value
		(\$ in millions)		(\$ in millions)	
Foreign Exchange Contracts ⁽¹⁾	Derivatives at Fair Value	\$ 945.8	\$ 41.9	\$ 759.8	\$ 12.9
Foreign Exchange Contracts	Liabilities under Derivative Contracts	\$ 729.5	\$ (3.2)	\$ 785.9	\$ (12.4)
Loss Portfolio Transfer Liability - Embedded Derivative ⁽²⁾	Liabilities under Derivative Contracts	—	\$ (31.7)	—	—

⁽¹⁾ Fair value is net of \$3.7 million of cash collateral (December 31, 2021 — \$2.1 million).

⁽²⁾ The LPT contains an embedded derivative within the contract in relation to the variable interest crediting rate. Refer to Note 7 for further information.

Derivatives Designated as Hedging Instruments Under ASC 815	Balance Sheet Location	As at December 31, 2022		As at December 31, 2021	
		Notional Amount	Fair Value	Notional Amount	Fair Value
		(\$ in millions)		(\$ in millions)	
Foreign Exchange Contracts	Derivatives at Fair Value	\$ 109.7	\$ 14.3	\$ —	\$ —
Foreign Exchange Contracts	Liabilities under Derivative Contracts	\$ —	\$ —	\$ 143.1	\$ (0.9)

The following table provides the unrealized and realized gains/(losses) recorded in the consolidated 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, 2022 and 2021:

	Location of Gain/(Loss) Recognized on Derivatives	Amount of (Loss)/Gain Recognized on Derivatives	
		For the Twelve Months Ended	
		December 31, 2022	December 31, 2021
Derivatives not designated as hedges		(\$ in millions)	
Foreign Exchange Contracts	Change in Fair Value of Derivatives	(80.5)	(35.9)
Derivatives designated as hedges			
Foreign Exchange Contracts	General, administrative and corporate expenses in consolidated statement of operations	5.9	(5.7)
Foreign Exchange Contracts	Net change from current period hedged transactions in other comprehensive income	15.4	(6.2)

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, 2022, the Company held foreign exchange contracts that were not designated as hedges under ASC 815 with an aggregate nominal amount of \$1,675.3 million (2021 — \$1,545.7 million). The foreign exchange contracts are recorded as derivatives at fair value in the consolidated balance sheet with changes recorded as a change in fair value of derivatives in the consolidated statement of operations. For the twelve months ended December 31, 2022, the impact of foreign exchange contracts on net income was a loss of \$80.5 million (December 31, 2021 — loss of \$35.9 million).

As at December 31, 2022, the Company held foreign exchange contracts that were designated as hedges under ASC 815 with an aggregate notional amount of \$109.7 million (2021 — \$143.1 million). The foreign exchange contracts are recorded as assets or liabilities under derivative contracts in the consolidated 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 consolidated statement of operations. The contracts are effective and therefore the movement in other comprehensive income representing the effective portion for the twelve months ended December 31, 2022 was a gain of \$15.4 million (December 31, 2021 — loss of \$6.2 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 consolidated statement of operations. For the twelve months ended December 31, 2022, the amount recognized within general, administration and corporate expenses for settled foreign exchange contracts was a realized gain of \$5.9 million (December 31, 2021 — loss of \$5.7 million).

Embedded derivative on loss portfolio contract. The loss portfolio transfer contract includes a funds withheld arrangement that provides returns to the reinsurer based on Aspen's investment performance, guaranteeing a minimum of 1.75% return. Such funds withheld arrangements are examples of embedded derivatives and therefore this instrument is accounted for as an option-based derivative. For the twelve months ended December 31, 2022, the amount recognized as a change in fair value of derivatives in the consolidated statement of operations is \$14.5 million.

9. Deferred Policy Acquisition Costs

The following table represents a reconciliation of beginning and ending deferred acquisition costs for the twelve months ended December 31, 2022 and 2021:

	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021
	(\$ in millions)	
Balance at the beginning of the period	\$ 290.8	\$ 306.6
Acquisition costs deferred	460.0	398.3
Amortization of deferred acquisition costs	(431.8)	(414.1)
Balance at the end of the period	<u>\$ 319.0</u>	<u>\$ 290.8</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, 2022, 2021 and 2020:

	As at December 31,		
	2022	2021	2020
	(\$ in millions)		
Provision for losses and LAE at the start of the year	\$ 7,611.8	\$ 7,165.3	\$ 6,951.8
Less reinsurance recoverable	(3,298.1)	(3,195.2)	(2,319.8)
Net loss and LAE at the start of the year	4,313.7	3,970.1	4,632.0
Net loss and LAE expenses disposed ⁽¹⁾	(1,840.1)	—	(818.5)
Movement in net provision for losses and LAE for claims incurred:			
Current year	1,651.9	1,648.2	1,841.7
Prior years	28.1	45.1	(0.9)
Total incurred	1,680.0	1,693.3	1,840.8
Net Losses and LAE payments for claims incurred:			
Current year	(192.7)	(729.1)	(404.9)
Prior years	(1,098.4)	(580.7)	(1,359.7)
Total paid	(1,291.1)	(1,309.8)	(1,764.6)
Foreign exchange (gains)/losses	(49.3)	(39.9)	80.4
Net losses and LAE reserves at the end of the year	2,813.2	4,313.7	3,970.1
Plus reinsurance recoverable on unpaid losses at the end of the year	4,897.7	3,298.1	3,195.2
Provision for losses and LAE at the end of the year	\$ 7,710.9	\$ 7,611.8	\$ 7,165.3

⁽¹⁾ Net loss and LAE expenses disposed of \$1,840.1 million represent the net loss reserves as at May 20, 2022 (“Closing Date”) for losses in relation to 2019 and prior accident years, in addition to the \$770.0 million of ceded reserves under the previous ADC agreement, recognizing a total recoverable of \$2,610.1 million. These reserves were rolled forward from the initial effective date of September 30, 2021, at which time the net losses reserves were \$3,120.0 million.

As at December 31, 2022 the total amount recoverable from Enstar under the LPT was \$2,132.0 million (As at December 31, 2021 recoverable from Enstar on the ADC was — \$838.1 million) which includes claims paid and reserve development since the Closing Date.

Net loss and LAE expenses disposed in 2020 includes the transfer of reserves under the ADC agreement providing \$770.0 million of cover and the loss portfolio transfer transactions for our surety insurance book of \$42.0 million and our U.S. accident and health book of \$6.5 million.

For the twelve months ended December 31, 2022, there was an increase of \$28.1 million in the Company’s estimate of the ultimate claims to be paid in respect of prior accident years compared to an increase of \$45.1 million for the twelve months ended December 31, 2021.

Overall, prior year reserve strengthening totaled \$28.1 million in 2022, compared with net unfavorable development of \$45.1 million in 2021. Prior year reserve strengthening excludes the full economic benefit of the recoveries from the ADC of \$58.3 million which is currently within reinsurance recoverables on unpaid losses.

Reinsurance. Net reserve releases of \$58.8 million in 2022 were mainly due to releases on prior year development on post-LPT years of \$24.6 million and the favorable impact of the LPT of \$34.2 million.

Insurance. Net unfavorable reserve development of \$86.9 million in 2022 included adverse prior year development on post-LPT years of \$37.6 million and the unfavorable movement of \$49.3 million due to the impact of the LPT, mainly reflecting the one-off costs in relation to the LPT recognized in 2022 and the change from ADC on a fixed allocation basis to the LPT.

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, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014 and 2013. Under the LPT agreement, the Company has reinsured net losses incurred on all accident years 2019 and prior. This has resulted in total incurred claims, IBNR and loss adjustment expenses in the loss development triangles for 2019 and prior to be Nil. 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. All amounts included in the following tables related to transactions denominated in a foreign currency have been translated into U.S. Dollars using the exchange rates in effect at December 31, 2022.

The Company has chosen to disaggregate the business in its Insurance segment, for the purposes of these loss development triangles as: Property; Casualty; Marine Aviation and Energy; and Financial and Professional insurance lines. The Company considers that this presentation of its Insurance lines loss development triangles more precisely reflects meaningful trending information. The Company presents its loss development triangles for the Reinsurance segment in line with the reportable reinsurance lines: Property Catastrophe and Other Property; Casualty; and Specialty.

Accident Year	Property Insurance Lines										As at December 31, 2022	
	Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance											
	For the Years Ended December 31,											
	Unaudited Prior Years										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
	\$ (in millions)											
2013	126.7	114.4	114.2	109.9	110.9	109.0	109.3	109.5	102.1	106.1	—	—
2014		162.6	154.9	132.4	133.0	132.2	130.7	130.1	125.2	131.1	—	9,949
2015			233.3	199.0	193.9	196.3	196.9	193.9	179.6	189.2	—	11,549
2016				233.9	245.0	240.0	241.3	242.5	233.4	244.8	—	10,773
2017					290.4	253.7	246.8	248.1	280.9	247.7	—	9,717
2018						196.3	198.1	182.2	196.2	177.3	—	8,308
2019							122.5	126.5	104.1	107.8	—	6,852
2020								199.9	195.9	205.1	24.4	7,542
2021									204.6	199.5	38.2	6,583
2022										163.9	62.9	4,171
								Total		\$1,772.5		

Property Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
Accident Year	For the Years Ended December 31,									
	Unaudited Prior Years									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(\$ in millions)									
2013	37.5	73.7	86.8	98.6	103.0	105.8	107.6	107.9	106.8	106.1
2014		39.9	85.2	112.5	122.0	126.0	127.3	128.7	129.9	131.1
2015			56.3	138.3	165.1	174.1	190.1	188.9	190.4	189.2
2016				65.7	166.1	198.1	219.2	228.6	233.7	244.8
2017					95.0	185.0	217.2	237.9	242.1	247.7
2018						60.3	153.6	176.1	173.0	177.3
2019							48.0	88.6	99.3	107.8
2020								60.1	122.9	150.1
2021									58.2	118.6
2022										40.8
								Total		<u>\$ 1,513.5</u>
	All outstanding liabilities for 2013 and subsequent years, net of reinsurance									\$ 259.0
	All outstanding liabilities before 2013, net of reinsurance									—
	Liabilities for claims and claim adjustment expenses, net of reinsurance									<u>\$ 259.0</u>

Casualty Insurance Lines											As at December 31, 2022		
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance													
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims	
	Unaudited Prior Years												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022			
	\$ (in millions)												
2013	128.6	112.8	111.6	116.8	99.8	101.1	101.4	100.0	107.8	86.7	—	3,392	
2014		139.9	122.6	134.2	124.0	131.0	134.9	131.8	137.9	107.4	—	3,914	
2015			197.9	217.9	180.5	197.5	230.1	228.3	250.4	197.2	—	4,775	
2016				211.5	182.5	177.6	184.2	195.1	247.4	163.3	—	4,818	
2017					176.3	169.9	173.4	190.5	234.6	154.4	—	5,495	
2018						119.4	122.5	132.2	169.7	94.4	—	5,500	
2019							122.0	144.4	155.3	88.3	—	5,198	
2020								131.1	139.3	138.7	72.1	3,755	
2021									170.5	185.6	119.7	3,356	
2022										201.1	132.1	2,709	
Total										\$1,417.1			

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									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
(\$ in millions)										
2013	2.1	25.1	38.2	51.2	65.9	77.9	82.0	83.9	84.0	86.7
2014		2.5	12.6	31.5	57.3	70.1	93.1	105.4	104.0	107.4
2015			3.0	16.4	55.1	90.2	135.0	163.6	174.5	197.2
2016				4.0	22.0	38.6	79.7	106.1	128.8	163.3
2017					3.4	22.3	51.2	93.4	110.3	154.4
2018						3.0	27.2	41.4	65.5	94.4
2019							6.2	16.7	68.0	88.3
2020								—	9.2	36.1
2021									3.00	8.8
2022										23.2
Total										<u>\$ 959.8</u>
All outstanding liabilities for 2013 and subsequent years, net of reinsurance										\$ 457.3
All outstanding liabilities before 2013, net of reinsurance										—
Liabilities for claims and claim adjustment expenses, net of reinsurance										<u>\$ 457.3</u>

Marine, Aviation and Energy Insurance Lines												
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance											As at December 31, 2022	
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
	\$ (in millions)											
2013	319.4	332.1	340.7	324.3	331.5	345.0	343.6	338.7	346.5	319.7	—	4,179
2014		308.6	312.2	297.2	308.9	304.5	311.4	300.7	317.6	279.1	—	4,058
2015			295.3	297.0	279.3	283.7	307.2	309.9	327.3	302.7	—	4,076
2016				258.8	229.0	227.5	227.9	217.7	224.3	199.2	—	4,431
2017					209.3	199.9	206.2	213.7	231.5	205.3	—	6,059
2018						170.1	207.1	207.9	238.8	169.7	—	5,153
2019							145.5	152.8	151.1	124.0	—	3,662
2020								110.2	111.2	125.7	17.5	3,856
2021									93.0	96.1	18.3	4,863
2022										107.7	58.8	3,810
Total										\$1,929.2		

Marine, Aviation and Energy Insurance Lines										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
Accident Year	For the Years Ended December 31,									
	Unaudited Prior Years									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(\$ in millions)									
2013	41.2	130.9	203.9	234.1	263.5	283.1	299.1	309.3	309.0	319.7
2014		53.2	116.0	188.1	208.6	231.3	249.5	261.7	274.2	279.1
2015			44.6	122.5	172.7	192.1	220.0	255.5	277.5	302.7
2016				30.8	81.9	141.3	163.1	189.5	197.3	199.2
2017					40.0	97.0	139.6	167.6	155.7	205.3
2018						26.7	104.3	132.6	154.7	169.7
2019							33.4	72.4	117.5	124.0
2020								28.5	66.4	88.6
2021									23.5	52.3
2022										24.9
									Total	\$ 1,765.5
All outstanding liabilities for 2013 and subsequent years, net of reinsurance										\$ 163.7
All outstanding liabilities before 2013, net of reinsurance										—
Liabilities for claims and claim adjustment expenses, net of reinsurance										\$ 163.7

Financial and Professional Insurance Lines											As at December 31, 2022	
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance												
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
	\$ (in millions)											
2013	104.3	98.7	103.1	99.6	98.6	89.9	88.8	95.1	101.0	82.9	—	606
2014		133.2	128.8	127.4	117.7	128.9	118.0	118.8	124.3	118.9	—	794
2015			171.9	173.4	183.1	187.1	188.0	183.0	189.9	163.9	—	1,085
2016				188.4	209.3	213.7	199.7	182.9	189.0	163.2	—	1,244
2017					203.9	179.6	184.5	185.2	208.8	166.7	—	1,737
2018						153.7	169.4	151.2	163.2	125.4	—	4,643
2019							246.8	259.6	253.9	195.2	—	23,831
2020								346.3	346.2	336.2	118.0	105,947
2021									284.5	302.8	170.4	34,942
2022										314.8	265.2	3,487
	Total									\$1,970.0		

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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
	(\$ in millions)										
2013	7.9	20.6	30.6	64.6	62.8	71.1	73.2	76.4	79.9	82.9	
2014		2.8	30.2	52.7	71.1	78.5	84.0	90.9	102.3	118.9	
2015			13.5	43.1	69.5	88.6	108.8	137.6	144.1	163.9	
2016				14.8	70.7	100.7	128.7	124.6	133.8	163.2	
2017					27.1	51.0	83.0	116.2	135.6	166.7	
2018						17.4	71.6	97.8	113.3	125.4	
2019							26.8	86.2	136.8	195.2	
2020								47.2	120.8	174.2	
2021									42.8	90.2	
2022										17.5	
	Total										<u>\$ 1,298.1</u>
All outstanding liabilities for 2013 and subsequent years, net of reinsurance										\$ 671.9	
All outstanding liabilities before 2013, net of reinsurance										<u>—</u>	
Liabilities for claims and claim adjustment expenses, net of reinsurance										\$ 671.9	

Property Catastrophe and Other Property Reinsurance											As at December 31, 2022	
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance												
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
\$ (in millions)												
2013	212.3	193.7	184.1	173.1	171.7	168.5	165.8	162.9	159.5	156.3	—	832
2014		185.8	172.6	157.1	145.7	145.9	141.1	141.2	140.1	138.1	—	900
2015			210.0	183.7	173.8	153.5	168.9	168.9	177.2	160.6	—	1,048
2016				264.2	264.6	263.2	242.1	237.7	230.1	229.8	—	1,307
2017					550.7	529.4	511.7	500.4	595.5	447.7	—	1,953
2018						323.5	362.8	356.0	571.0	304.5	—	1,780
2019							237.3	249.6	358.7	203.6	—	1,399
2020								317.5	402.1	348.9	81.0	1,379
2021									647.3	472.7	196.9	1,411
2022										392.3	266.7	950
Total										<u>\$2,854.5</u>		
Property Catastrophe and Other Property Reinsurance												
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance												
Accident Year	For the Years Ended December 31,											
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
(\$ in millions)												
2013	33.9	95.7	142.6	154.1	158.6	160.1	161.6	156.0	156.0	156.3		
2014		36.9	98.5	124.4	133.7	137.4	136.0	137.6	137.8	138.1		
2015			35.6	93.6	124.2	136.7	153.6	155.9	159.5	160.6		
2016				55.8	160.5	200.9	211.6	224.4	230.7	229.8		
2017					123.0	355.4	413.5	437.1	433.7	447.7		
2018						122.1	290.1	296.8	315.3	304.5		
2019							28.1	143.9	191.4	203.6		
2020								41.8	165.5	237.3		
2021									75.0	233.2		
2022										65.5		
Total											<u>\$ 2,176.6</u>	
All outstanding liabilities for 2013 and subsequent years, net of reinsurance												677.9
All outstanding liabilities before 2013, net of reinsurance												—
Liabilities for claims and claim adjustment expenses, net of reinsurance												<u>\$ 677.9</u>

Casualty Reinsurance												
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance											As at December 31, 2022	
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
	\$ (in millions)											
2013	211.7	226.7	221.6	219.1	202.3	197.7	200.3	197.9	191.6	151.9	—	1,700
2014		201.8	204.0	212.3	205.5	199.0	202.1	198.0	191.1	144.7	—	1,843
2015			191.1	197.6	207.3	209.8	207.5	203.7	198.8	135.1	—	2,038
2016				229.3	241.4	241.0	251.0	258.5	258.5	174.6	—	2,153
2017					241.0	239.1	249.7	248.9	265.5	147.7	—	2,166
2018						226.0	255.0	262.5	264.3	130.4	—	2,002
2019							232.5	253.1	252.0	82.1	—	1,567
2020								252.6	233.6	197.9	123.2	1,088
2021									205.7	215.6	135.9	815
2022										248.7	179.1	478
Total										\$1,628.7		

Casualty Reinsurance											
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance											
Accident Year	For the Years Ended December 31,										
	Unaudited Prior Years										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
	(\$ in millions)										
2013	3.4	15.7	42.3	64.4	91.8	113.5	126.0	137.9	144.2	151.9	
2014		2.5	13.6	37.4	59.6	85.4	105.9	123.4	133.0	144.7	
2015			3.3	17.5	37.8	64.7	88.4	107.3	121.4	135.1	
2016				8.9	32.9	62.9	94.8	124.6	145.3	174.6	
2017					8.7	30.2	58.5	96.5	115.7	147.7	
2018						7.1	33.2	73.0	103.8	130.4	
2019							9.1	36.2	60.9	82.1	
2020								9.1	27.6	44.1	
2021									7.8	37.1	
2022										9.4	
	Total										<u>\$ 1,057.1</u>
All outstanding liabilities for 2013 and subsequent years, net of reinsurance										571.6	
All outstanding liabilities before 2013, net of reinsurance										<u>—</u>	
Liabilities for claims and claim adjustment expenses, net of reinsurance										\$ 571.6	

Specialty Reinsurance											As at December 31, 2022	
Incurred Claims, IBNR and Loss Adjustment Expenses, Net of Reinsurance												
Accident Year	For the Years Ended December 31,										Total of IBNR Plus Expected Development on Reported Claims	Cumulative Number of Reported Claims
	Unaudited Prior Years											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
	\$ (in millions)											
2013	140.5	135.7	127.7	116.3	115.7	111.9	111.6	108.3	104.8	98.1	—	579
2014		149.5	137.5	129.5	120.8	123.6	122.2	118.0	116.6	105.4	—	622
2015			163.2	166.4	161.1	155.9	154.5	150.0	150.0	132.5	—	774
2016				235.8	236.6	234.6	227.6	222.6	218.8	197.6	—	938
2017					375.4	388.4	372.1	361.1	364.2	325.9	—	1,336
2018						392.7	391.9	390.3	419.5	342.1	—	1,403
2019							470.3	493.4	397.4	423.6	—	1,537
2020								412.8	600.0	374.1	53.1	1,470
2021									156.6	151.6	55.8	1,276
2022										193.9	107.9	969
Total										\$2,344.8		

Specialty Reinsurance										
Cumulative Paid Claims and Allocated Loss Adjustment Expenses, Net of Reinsurance										
Accident Year	For the Years Ended December 31,									
	Unaudited Prior Years									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(\$ in millions)									
2013	24.3	68.7	84.4	91.4	98.4	98.4	99.3	99.0	98.1	98.1
2014		16.2	55.2	79.8	87.8	98.0	100.9	102.5	104.4	105.4
2015			17.3	55.2	102.5	119.9	128.7	131.7	131.7	132.5
2016				58.2	149.5	163.9	181.7	191.8	201.8	197.6
2017					94.1	237.4	268.9	303.8	314.4	325.9
2018						26.7	279.0	312.2	328.5	342.1
2019							272.5	379.6	398.8	423.6
2020								212.8	269.6	290.4
2021									28.2	53.2
2022										25.8
	Total									<u>\$ 1,994.6</u>
All outstanding liabilities for 2013 and subsequent years, net of reinsurance										350.2
All outstanding liabilities before 2013, net of reinsurance										—
Liabilities for claims and claim adjustment expenses, net of reinsurance										<u>\$ 350.2</u>

Reconciliation of Incurred and Paid Claims Development to total Provision for Losses and LAE

	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021
	(\$ in millions)	
Net outstanding liabilities:		
Insurance lines		
- Property insurance lines	259.0	289.3
- Casualty insurance lines	457.3	725.6
- Marine, aviation and energy insurance lines	163.7	427.9
- Financial and professional insurance lines	671.9	808.7
Total insurance lines	1,551.9	2,251.5
Reinsurance lines		
- Property catastrophe and other property reinsurance	677.9	784.9
- Casualty reinsurance	571.6	975.3
- Specialty reinsurance	350.2	472.3
Total reinsurance lines	1,599.7	2,232.5
Net loss and LAE	3,151.6	4,484.0
Reinsurance recoverable on unpaid losses:		
Insurance lines	2,907.8	2,117.4
Reinsurance lines	1,989.9	1,180.7
Total reinsurance recoverable on unpaid losses	4,897.7	3,298.1
Deferred gain on retroactive contracts	42.7	58.3
Unallocated claims incurred	41.4	56.6
Other reinsurance balances recoverable ⁽¹⁾	(429.3)	(286.4)
Carbon syndicate reserves	5.2	1.0
Other	1.6	0.2
	(338.4)	(170.3)
Provision for losses and LAE at the end of the year	7,710.9	7,611.8

⁽¹⁾ Other reinsurance balances recoverable primarily include short term recoverables to be collected.

Average Annual Percentage Payout of Incurred Claims by Age, Net of Reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Insurance	16.6 %	27.0 %	19.4 %	13.6 %	8.3 %	9.6 %	6.0 %	4.7 %	2.2 %	2.6 %
Reinsurance	20.5 %	33.7 %	15.7 %	10.1 %	7.8 %	5.9 %	4.3 %	2.7 %	2.3 %	1.9 %

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 assurance 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 21%.

The Company's U.K. operating companies were taxed at the U.K. corporate tax rate of 19%.

Total income tax (benefit)/expense for the twelve months ended December 31, 2022, 2021 and 2020 was allocated as follows:

	Twelve Months Ended December 31,		
	2022	2021	2020
	(\$ in millions)		
Income tax (benefit)/expense allocated to net income	\$ (78.1)	\$ 5.3	\$ 18.4
Income tax (benefit)/expense allocated to other comprehensive income	(23.9)	0.3	0.5
Total income tax (benefit)/expense	<u>\$ (102.0)</u>	<u>\$ 5.6</u>	<u>\$ 18.9</u>

(Loss)/income from operations before income taxes and income tax expense/(benefit) attributable to that (loss)/income for the twelve months ended December 31, 2022, 2021 and 2020 is provided in the tables below:

Twelve Months Ended December 31, 2022				
	(Loss)/income before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total income tax (benefit)/expense
	(\$ in millions)			
Bermuda	\$ (103.3)	\$ —	\$ —	\$ —
U.S. ⁽¹⁾⁽²⁾	34.8	14.8	(102.9)	(88.1)
U.K. ⁽³⁾	62.4	7.0	—	7.0
Other ⁽⁴⁾	(20.9)	4.7	(1.7)	3.0
Total	<u>\$ (27.0)</u>	<u>\$ 26.5</u>	<u>\$ (104.6)</u>	<u>\$ (78.1)</u>

Twelve Months Ended December 31, 2021				
	Income/(loss) before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total income tax (benefit)/expense
	(\$ in millions)			
Bermuda	\$ 22.9	\$ —	\$ —	\$ —
U.S.	5.0	5.8	—	5.8
U.K.	75.1	—	(0.3)	(0.3)
Other	(67.9)	2.7	(2.9)	(0.2)
Total	<u>\$ 35.1</u>	<u>\$ 8.5</u>	<u>\$ (3.2)</u>	<u>\$ 5.3</u>

Twelve Months Ended December 31, 2020				
	(Loss)/income before tax	Current tax (benefit)/expense	Deferred tax (benefit)/expense	Total income tax (benefit)/expense
	(\$ in millions)			
Bermuda	\$ (81.5)	\$ —	\$ —	\$ —
U.S.	19.7	8.9	—	8.9
U.K.	11.0	0.1	—	0.1
Other	12.8	10.3	(0.9)	9.4
Total	<u>\$ (38.0)</u>	<u>\$ 19.3</u>	<u>\$ (0.9)</u>	<u>\$ 18.4</u>

⁽¹⁾ The U.S. current tax expense of \$14.8 million includes \$2.3 million of Base Erosion and Anti-abuse Tax (2021—\$5.8 million), of which \$1.1 million relates to the U.S. operating subsidiaries and \$1.2 million to Aspen UK's U.S. branch.

- (2) The U.S. deferred tax benefit of \$102.9 million is mainly due to a change in judgment about the realizability of the deferred tax asset in the U.S. operating subsidiaries. The decrease in valuation allowance relating to our U.S. operations is driven by a change in judgment about the recoverability of deferred tax assets in the U.S. operating subsidiaries. We have concluded that the deferred tax assets of our U.S. operating subsidiaries will more likely than not be fully utilized over time, and therefore the previously recognized valuation allowance in relation to U.S. operating subsidiaries has been reversed.
- (3) The U.K. current tax expense of \$7.0 million results from an intraperiod tax allocation.
- (4) Current tax expense and deferred tax (benefit) in “Other” mostly relates to the Swiss branches of Aspen UK and withholding taxes payable in Australia.

As noted above, the tax rate in Bermuda, the Company’s country of domicile, is zero. Application of the statutory income tax rate for operations in other jurisdictions produces a differential to the expected income tax (benefit)/expense as shown in the table below. The reconciliation between the income tax (benefit)/expense and the amount that would result from applying the statutory rate for the Company for the twelve months ended December 31, 2022, 2021 and 2020 is provided in the table below:

	Twelve Months Ended December 31,		
	2022	2021	2020
Income Tax Reconciliation			
	(\$ in millions)		
Income tax benefit at statutory tax rate of zero percent	\$ —	\$ —	\$ —
Overseas statutory tax rates differential	16.8	(0.9)	(3.8)
Base erosion and anti-abuse tax (BEAT) expense	2.3	6.1	4.3
Prior year adjustments ⁽¹⁾	(2.9)	0.5	(25.0)
Change in valuation allowance ⁽²⁾	(98.9)	9.6	40.8
Impact of unrecognized tax benefits ⁽³⁾	—	—	—
Australian non-resident withholding tax	1.5	0.6	1.0
Foreign exchange	(0.3)	(1.5)	0.2
Non-deductible expenses	2.4	2.4	4.7
Impact of changes in statutory tax rates ⁽⁴⁾	(5.7)	(11.5)	(3.8)
Tax effect of OCI in income statement	6.7	—	—
Total income tax (benefit)/expense	\$ (78.1)	\$ 5.3	\$ 18.4

(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 income 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, 2022 predominantly relate to the determination of the results of the branches of the U.K. operating subsidiaries. The prior period adjustments for the twelve months ended December 31, 2021 and 2020 predominantly relate to the determination of results in the U.K.

(2) The 2022 valuation allowance movement includes nil relating to U.K. deferred tax assets in U.K. operating subsidiaries, \$4.8 million decrease relating to deferred tax assets in the branches of the U.K. and Bermuda operating subsidiaries, and \$94.1 million decrease from U.S. operations. The decrease in valuation allowance relating to our U.S. operations is driven by a change in judgment about the recoverability of deferred tax assets in the U.S. operating subsidiaries. We have concluded that the deferred tax assets of our U.S. operating subsidiaries will more likely than not be fully utilized over time, and therefore the previously recognized valuation allowance in relation to U.S. operating subsidiaries has been reversed.

(3) In 2022, the Company did not have any unrecognized tax benefits.

Income tax returns that have been filed by the Company’s U.S. Operating Subsidiaries are subject to examination for 2019 and later tax years. The Company’s U.K. operating subsidiaries’ income tax returns are potentially subject to examination for 2021 and later tax years as these periods are considered “open” by the U.K. Tax Authority. The Company accrues interest and penalties related to an underpayment of income taxes, if applicable, as income tax expenses. 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, 2022.

(4) The U.K. tax rate has changed from April 1, 2023 from 19% to 25%.

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, 2022 and 2021:

	As at December 31,	
	2022	2021
	(\$ in millions)	
Deferred tax assets:		
Operating loss carryforwards	167.6	170.2
Capital loss carryforwards	6.7	0.3
Insurance reserves: Losses and loss adjustment expenses	28.3	16.7
Unrealized losses on investments	20.6	—
Accrued expenses	6.1	4.6
Foreign tax credit carryforwards	19.8	20.2
Insurance reserves: Unearned premiums	36.0	28.3
Intangible assets	0.7	—
Office properties and equipment	14.2	15.1
Operating lease liabilities	18.5	19.2
Other temporary differences	3.7	2.9
Total deferred tax assets	322.2	277.5
Less valuation allowance	(145.7)	(225.9)
Deferred tax assets, net of valuation allowance	\$ 176.5	\$ 51.6
Deferred tax liabilities:		
Investments	—	(2.5)
Intangible assets	—	(2.8)
Deferred acquisition costs	(37.0)	(28.6)
Right-of-use operating lease assets	(13.7)	(10.6)
Insurance reserves: Losses and loss adjustment expenses	(0.2)	(8.3)
Other temporary differences	(6.4)	(1.6)
Total deferred tax (liabilities)	(57.3)	(54.4)
Net deferred tax assets/(liabilities)	\$ 119.2	\$ (2.8)

Deferred tax liabilities and assets represent the tax effect of carryforwards and temporary differences between the value of assets and liabilities for financial statement purposes and such values as measured by U.K., U.S. and other tax laws and regulations.

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, carryback availability, projected future taxable income, and tax-planning strategies in making this assessment.

As at December 31, 2022, the Company has net operating losses carryforwards for U.S. federal income tax purposes of \$376.5 million (2021 — \$443.1 million), of which \$309.4 million relates to the U.S. operating subsidiaries and \$67.1 million to Aspen UK's U.S. branch. The Company also has net operating losses carryforwards for U.K. corporate tax purposes of \$280.5 million (2021 — \$168.9 million), deferred syndicate profits of \$19.9 million (2021 — \$66.2 million losses), and losses in other jurisdictions of \$118.8 million (2021 — \$103.9 million).

The \$376.5 million that are available to offset future U.S. federal taxable income will expire between 2032 and 2041. The amount of pre-merger net operating losses carryforwards that can be used each year is limited by section 382 to \$6.5 million per year for Aspen UK's U.S. branch, and \$39.2 million in 2023, \$23.1 million in 2024, and \$20.8 million per year for the 15 years thereafter for the U.S. operating subsidiaries.

The net operating losses in the U.K. and other jurisdictions are available to offset future corporate income in those jurisdictions over an indefinite period.

For U.S. federal income tax purposes, the Company has capital loss carryforwards of \$31.7 million, of which \$15.0 million relates to the U.S. operating subsidiaries and \$16.7 million to Aspen UK's branch, expiring between 2026 and 2027 and nil charitable contribution carryforwards (2021 — \$0.1 million).

For U.K. corporate tax purposes, the Company has foreign tax credit carryforwards of \$19.8 million (2021 — \$20.2 million) which are available to offset future U.K. corporate tax arising on the same foreign source of income over an indefinite period.

A valuation allowance of \$18.0 million (2021 — \$119.7 million) on U.S. deferred tax assets (which includes these loss carryforwards) has been recognized at December 31, 2022 relating to Aspen UK's U.S. branch. The valuation allowance relating to the deferred tax assets of the U.S. operating companies has been reversed as a result of a change in judgment over the likelihood that a tax benefit will be realized.

A valuation allowance of \$106.7 million (2021 — \$88.7 million) has been established against U.K. deferred tax assets.

The U.K., U.S. and other jurisdictions valuation allowance combined total is \$145.7 million (2021 — \$225.9 million).

12. Capital Structure

The following table provides a summary of the Company's authorized and issued share capital as at December 31, 2022 and 2021:

	As at December 31, 2022		At December 31, 2021	
	Number	\$ in Thousands	Number	\$ in Thousands
Authorized share capital:				
Ordinary Shares \$0.01 per share (2021 — \$0.01 per share)	70,000,000	700	70,000,000	700
Preference Shares 0.15144558¢ per share	30,000,000	45	30,000,000	45
Total authorized share capital		745		745
Issued share capital:				
Issued ordinary shares \$0.01 per share (2021 — \$0.01 per share)	60,395,839	604	60,395,839	604
Issued 5.950% 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	—	10,000	—
Total issued share capital		636		636

⁽¹⁾ Each depositary share represents a 1/1000th interest in a share of the 5.625% preference shares.

(a) Ordinary Shares

Issued Ordinary Shares. The Company's issued ordinary shares of par value \$0.01 at both December 31, 2022 and 2021 was 60,395,839. The Company did not acquire any ordinary shares for the twelve months ended December 31, 2022.

(b) Preference Shares

Preference Shares Issuance. On May 2, 2013, the Company 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"). Net proceeds were \$270.6 million, consisting of \$275.0 million of total liquidation preference less \$4.4 million of issuance expenses. The 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 \$241.3 million, consisting of \$250.0 million of total liquidation preference less \$8.7 million of issuance expenses. The 5.625% Preference Shares are listed on the NYSE under the symbol “AHL PRD”.

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 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 “AHL PRE”.

(c) Additional Paid-in Capital

Additional paid-in capital as at December 31, 2022 was \$1,514.7 million (December 31, 2021 — \$1,514.7 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, 2021 — \$775.0 million less issue costs of \$21.5 million).

13. Statutory Requirements and Dividends Restrictions

As a holding company, the Company 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. The Company must comply with the provisions of the Bermuda Companies Act 1981, as amended, (the “Companies Act”) regulating the payment of dividends and distributions.

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 UK, AMAL 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. Accordingly, Aspen UK, AMAL and AUL may not pay a dividend if the payment of such dividend would result in their SCR coverage ratio falling below certain levels. In addition, any future changes regarding regulatory requirements, including those described above, may restrict the ability of Aspen UK, AMAL and AUL to pay dividends in the future. As at December 31, 2022, Aspen UK had an accumulated balance of retained losses of approximately \$467.4 million and AUL had an accumulated balance of retained losses of approximately £62.2 million. Aspen UK held a capital contribution reserve of \$655.0 million as at December 31, 2022 which, under certain circumstances, could be distributable.

Aspen Bermuda must comply with the provisions of the Companies Act and the Insurance Act regulating the payment of dividends and distributions. 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 of payment. As at December 31, 2022, 25% of Aspen Bermuda’s statutory capital and surplus amounted to \$262.1 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, 2022 without prior regulatory approval.

Actual and required statutory capital and surplus for the principal Operating Subsidiaries of the Company, excluding its Lloyd’s syndicate, as at December 31, 2022 and December 31, 2021 were estimated as follows:

	As at December 31, 2022		
	U.S.	Bermuda	U.K.
	(\$ in millions)		
Required statutory capital and surplus	\$ 513.9	\$ 536.7	\$ 771.8
Actual statutory capital and surplus	\$ 838.6	\$ 1,426.5	\$ 802.5

	As at December 31, 2021		
	U.S.	Bermuda	U.K.
	(\$ in millions)		
Required statutory capital and surplus	\$ 561.2	\$ 683.7	\$ 800.7
Actual statutory capital and surplus	\$ 889.7	\$ 1,141.0	\$ 963.6

As the sole corporate member of our Lloyd’s Syndicate, AUL was required to hold capital at Lloyd’s of \$968.7 million as at December 31, 2022, adjusting funding to meet this level on an annual basis in the following Q2 and not holding less than 90% of this amount at any time. As at December 31, 2022, AUL had capital at Lloyd’s of \$1,045.9 million of which \$479.6 million was provided as Funds at Lloyd’s 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 the Company's Operating Subsidiaries are set out above. To the extent that these requirements are met, the Company 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 March 1, 2023, the Company's Board of Directors declared the following dividends:

	Dividend	Payable on:	Record Date:
5.950% Preference Shares (AHL PRC)	\$ 0.3719	April 1, 2023	March 15, 2023
5.625% Preference Shares (AHL PRD)	\$ 0.3516	April 1, 2023	March 15, 2023
5.625% Preference Shares, represented by depositary shares (AHL PRE) ⁽¹⁾	\$ 351.56	April 1, 2023	March 15, 2023

- ⁽¹⁾ The 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.

In the twelve months ended December 31, 2022, the Company paid an ordinary shares dividend of \$40 million to Highlands Bermuda Holdco, Ltd., the holder of all the Company's ordinary shares. The Company also paid an ordinary shares dividend of \$20 million to Highlands Bermuda Holdco, Ltd. on April 3, 2023.

15. Retirement Plans

The Company operates defined contribution retirement plans for the majority of its employees at varying rates of their salaries. Total contributions by the Company to the retirement plans were \$12.5 million in the twelve months ended December 31, 2022 (2021 — \$13.5 million, 2020 — \$12.1 million).

16. Share-Based Payments and Long-Term Incentive Plan

In 2019, the Company implemented a new long-term incentive scheme, under which annual awards are split equally between Performance Units and Exit Units. Performance units vesting conditions have been amended in the current year and vest after two years subject to the Company achieving certain thresholds of operating income over a two year period. Exit Units vest upon change of control (sale or IPO) and achieving predetermined multiplies 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, 2022 was \$0.6 million (December 31, 2021 — \$0.5 million), which is related to a charge of \$0.6 million (December 31, 2021 — \$0.5 million) in relation to Performance Units. The income tax effect of this is not considered to be material.

17. Intangible Assets and Goodwill

The following table provides a summary of the Company's intangible assets for the twelve months ended December 31, 2022 and 2021:

	Twelve Months Ended December 31, 2022				
	Beginning of the Year	Additions/ (Disposals)	Amortization	Impairment	End of the Year
	(\$ in millions)				
Intangible Assets					
Trademarks	\$ 1.3	\$ —	\$ (0.1)	\$ —	\$ 1.2
Insurance Licenses	16.7	—	—	—	16.7
Goodwill	3.9	—	—	—	3.9
Total	\$ 21.9	\$ —	\$ (0.1)	\$ —	\$ 21.8

Twelve Months Ended December 31, 2021					
	Beginning of the Year	Additions/ (Disposals)	Amortization (\$ in millions)	Impairment	End of the Year
Intangible Assets					
Trademarks	\$ 1.6	\$ —	\$ (0.3)	\$ —	\$ 1.3
Agency Relationships	0.6	—	(0.6)	—	—
Insurance Licenses	16.7	—	—	—	16.7
Goodwill	3.9	—	—	—	3.9
Total	<u>\$ 22.8</u>	<u>\$ —</u>	<u>\$ (0.9)</u>	<u>\$ —</u>	<u>\$ 21.9</u>

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 2010, the Company acquired licenses with a value of \$10.0 million. The total value of the licenses as at December 31, 2022 was \$16.7 million. This includes \$4.5 million of acquired licenses held by Aspen Specialty and \$2.1 million of acquired licenses held by Aspen UK. The insurance licenses are considered to have an indefinite life and are not being amortized.

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 \$1.2 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, 2022 and December 31, 2021, the Company performed its annual qualitative assessment and determined that it was more likely than not that these were not impaired.

18. Operating Leases

As at December 31, 2022, the Company has recognized right-of-use operating lease assets of \$72.8 million, net of impairment and operating lease liabilities of \$95.5 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, the Company has consolidated its office space. Where negotiations are either in advanced stages of discussion and it is probable that the sub-lease transactions will be completed, or the Company has agreed terms to sub-lease our office space, the Company has assessed the right-of-use lease assets for impairment and have recognized a \$6.7 million credit (2021 — \$0.4 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.

Operating lease charge. The following table summarizes the operating lease charge for the twelve months ended December 31, 2022 and 2021:

	For the Twelve Months Ended	
	December 31, 2022	December 31, 2021
	(\$ in millions)	
Amortization charge on right-of-use operating leased assets	\$ 10.1	\$ 12.0
Interest on operating lease liabilities	5.4	5.5
Operating lease charge	<u>\$ 15.5</u>	<u>\$ 17.5</u>

Lease Liabilities. The following table summarizes the maturity of lease liabilities under non-cancellable leases as of December 31, 2022 and 2021:

	For the Twelve Months Ended	
	December 31, 2022	December 31, 2021
	(\$ in millions)	
Operating leases — maturities		
2022	\$ —	\$ 17.0
2023	15.4	17.0
2024	15.2	16.5
2025	14.9	16.1
2026	14.1	15.3
2027	12.6	13.8
Later years	47.2	48.0
Total minimum lease payments	\$ 119.4	\$ 143.7
Less imputed interest	(23.9)	(28.5)
Total lease liabilities	<u>\$ 95.5</u>	<u>\$ 115.2</u>

Other lease information. The following table summarizes the cash flows on operating leases for the twelve months ended December 31, 2022 and 2021, and other supplemental information:

	For the Twelve Months Ended	
	December 31, 2022	December 31, 2021
	(\$ in millions)	
Cash paid for amounts included in the measurement of lease liabilities		
- Operating cash outflow from operating leases	\$ (15.5)	\$ (17.5)
Right-of-use assets obtained in exchange for lease obligations		
- Operating leases	\$ 1.9	\$ 23.9
Reduction to Right-of-use assets resulting from reductions to lease obligations		
- Operating leases	\$ 7.0	\$ 2.3
Weighted Averages		
- Operating leases, remaining lease terms (years)	8.1	8.8
- Operating leases, average discount rate	5.0 %	5.0 %

19. Related Party Transactions

Apollo's indirect subsidiary, Apollo Asset Management Europe PC LLP ("AAME"), serves as the investment manager for the Company and 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 and transactions that have existed or that the Company and certain of the Company's subsidiaries has entered into with Apollo and its affiliates are described below.

Investment Management Relationships

AAME provides centralized asset management investment advisory and risk services for the portfolio of the Company's investments and investments of such subsidiaries pursuant to the investment management agreements ("IMAs") that have been entered into with AAME.

In addition, pursuant to the IMAs, AAME may engage sub-advisors or delegates to provide certain of the investment advisory and management services to the Company's subsidiaries. Such sub-advisors may include affiliates of AAME.

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.

During the year ended December 31, 2022, the Company recognized IMA fees of \$4.9 million (2021 — \$5.8 million; 2020 — \$5.3 million), of which \$4.5 million (2021 — \$3.2 million) remains payable to AAME at year end.

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 the Company management consulting and advisory services related to the business and affairs of the Company and its subsidiaries. The Company will pay 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, or (ii) \$5 million.

During the year ended December 31, 2022, the Company recognized Management Consulting fees of \$5.0 million (2021 — \$5.0 million; 2020 — \$5.0 million), of which \$1.3 million remains payable to AMH at year end (2021 — \$Nil).

Related Party Investments

During the year, the Company bought or held the following securities or investments in Apollo:

Apollo Real Estate Fund. As at December 31, 2022, the Company's investment in Apollo Real Estate Fund had a fair value of \$25.3 million. This investment is included in other investments on the consolidated balance sheet. Income earned on this investment was \$1.6 million and is included in net investment income on the consolidated statement of operations and other comprehensive income.

Apollo Origination Partnership ("AOP") Fund. As at December 31, 2022, the Company's investment in the AOP Fund had a fair value of \$12.7 million. This investment is included in other investments on the consolidated balance sheet. The Company incurred gains of \$1.5 million and is included in net investments income on the consolidated statement of operations and other comprehensive income.

AOP Class A notes; AOP Class B notes. As at December 31, 2022, the Company's investment in AOP Class A notes had a fair value of \$30.0 million. As at December 31, 2022, the Company's investment in AOP Class B notes had a fair value of \$14.8 million. The Company incurred losses of \$0.2 million and \$0.2 million on AOP Class A and B notes, respectively, and is included in realized and unrealized investment losses on the consolidated statement of operations and other comprehensive income. These investments are included in privately-held investments on the consolidated balance sheet.

In 2022 there were no expenses incurred relating to any of these investments. The above transactions were entered into at arm's length.

Other Payables to Related Parties

As at year end December 31, 2022, the Company had an intercompany payable balance of \$2.0 million (2021 — \$0.6 million), due to its parent, Highlands Bermuda Holdco, 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, 2022 and 2021:

	As at December 31, 2022	At December 31, 2021
	(\$ in millions, except percentages)	
Regulatory trusts and deposits:		
Affiliated transactions	\$ 707.1	\$ 891.3
Third party	2,817.7	3,099.7
Letters of credit / guarantees ⁽¹⁾	471.3	539.8
Total restricted assets (excluding illiquid assets)	3,996.1	4,530.8
Other investments — illiquid assets	221.3	151.3
Total restricted assets and illiquid assets	\$ 4,217.4	\$ 4,682.1
Total as percent of cash and invested assets ⁽²⁾	59.4 %	59.7 %

⁽¹⁾ As at December 31, 2022, the Company had pledged funds of \$471.3 million (December 31, 2021 — \$539.8 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 Funds. We invest in real estate funds which, as is typical for this type of investment, have lock-up periods. A lock-up period is the initial amount of time an investor is contractually required to remain invested before having the ability to redeem. As at December 31, 2022, the lock-up periods across these funds range from one quarter to several years. Thereafter these funds could also be redeemed on a pro-rata basis depending on the liquidity position of the fund. 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.

Other Investments - Equity Method. 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. During the period ending December 31, 2022, \$1.6 million (December 31, 2021 — \$2.5 million) capital was invested in multi-line reinsurer.

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, 2022 and 2021, these funds amounted to approximately 59.4% of the \$7.1 billion and approximately 59.7% 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 Short-term Debt" of these consolidated financial statements.

Funds at Lloyd's. AUL operates at Lloyd's as the corporate member for Syndicate 4711. AUL also participates in underwriting activities of Carbon Syndicate 4747. Lloyd's determines required regulatory capital by considering the underwriting activities that AUL participates in. Such capital, called Funds at Lloyd's, consists of investable assets as at December 31, 2022 in the amount of \$489.5 million (2021 — \$565.8 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, 2022 was £0.4 million (December 31, 2021 — £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 UK 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 UK's U.S. reinsurance liabilities, which were \$1,166.4 million as at December 31, 2022 and \$1,470.5 million as at December 31, 2021. As at December 31, 2022, the balance (including applicable letter of credit facilities) held in the trust was \$1,389.5 million (2021 — \$1,581.9 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 \$380.3 million and \$450.4 million as at December 31, 2022 and 2021, respectively. As at December 31, 2022, the balance held in the U.S. trust fund and other Aspen Bermuda trusts was \$509.2 million (2021 — \$519.7 million).

U.S. Surplus Lines Trust Fund. Aspen UK 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, 2022 was \$215.1 million (2021 — \$216.0 million).

U.S. Regulatory Deposits. As at December 31, 2022, Aspen Specialty had a total of \$6.7 million (2021 — \$6.9 million) on deposit with six U.S. states in order to satisfy state regulations for writing business in those states. AAIC had a further \$6.5 million (2021 — \$6.4 million) on deposit with twelve U.S. states.

Canadian Trust Fund. Aspen UK has established a Canadian trust fund with a Canadian bank to secure a Canadian insurance license. As at December 31, 2022, the balance held in trust was CAD\$185.8 million (\$137.2 million) (2021 — CAD\$196.8 million).

Australian Trust Fund. Aspen UK 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, 2022, the balance held in trust was AUD\$183.9 million (\$124.7 million) (2021 — AUD\$226.6 million).

Swiss Trust Fund. Aspen UK 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, 2022, the balance held in trust was CHF9.4 million (\$10.2 million) (2021 — CHF8.0 million).

Singapore Fund. Aspen UK 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, 2022, the balance in the account was SGD\$174.7 million (\$130.3 million) (2021 — SGD\$178.0 million).

(b) 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, 2022, 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, 2022 was \$4,897.7 million (2021 — \$3,298.1 million) of which \$2,092.4 million was uncollateralized (2021 — \$1,981.4 million). As at December 31, 2022, of the Company's uncollateralized reinsurance recoverables 9.7% (2021 — 10.8%) were with Munich Re which is rated A+ by A.M. Best and AA- by S&P, 16.3% (2021 — 15.9%) were with Everest Re which is rated A+ by A.M. Best and A+ by S&P, and 8.2% (2021 — 9.3%) were with Lloyd's which is rated A by A.M. Best and A+ by S&P. These are the Company's largest exposures to individual reinsurers.

On June 16, 2016, the FASB issued ASU 2016-13, "*Financial Instruments - Credit Losses (Topic 326)*" which introduced a new impairment model, known as the current expected loss model ("CECL"), 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 reinsurance receivables. Following the adoption of this ASU with effect from January 1, 2020, the Company recognized a reduction in the Company's reinsurance recoverables by \$3.7 million as at December 31, 2022 (2021 — \$3.3 million). For the twelve months ended December 31, 2022 there was an increase in the CECL allowance on reinsurance recoverables of \$0.4 million (December 31, 2021 — \$0.5 million decrease).

Underwriting premium receivables

The total underwriting premium receivable by the Company as at December 31, 2022 was \$1,482.4 million (2021 — \$1,304.6 million). As at December 31, 2022, \$18.3 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. Allowance for credit losses of \$25.0 million as at December 31, 2022 (2021 — \$30.2 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, 2022, there were no investments in any single issuer, other than the U.S. government and the Canadian government in excess of 2% of the aggregate investment portfolio.

Business through 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, 2022 and the proportion of gross written premiums from each of those brokers.

	Twelve Months Ended December 31,		
	2022	2021	2020
	(in percentages)		
Aon Corporation	22.3 %	17.3 %	15.8 %
Marsh & McLennan Companies, Inc.	21.8	17.5	15.4
Willis Group Holdings, Ltd.	8.0	9.6	10.4
Other brokers/non-broker sources ⁽¹⁾	47.9	55.6	58.4
Total	100.0 %	100.0 %	100.0 %
Gross written premiums (\$ millions)	\$ 4,338.7	\$ 3,938.4	\$ 3,698.5

⁽¹⁾ 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 condensed consolidated statement of operations for the twelve months ended December 31, 2022 and 2021:

Details about the AOCI Components	Amount Reclassified from AOCI		Affected Line Item in the Consolidated Statement of Operations
	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021	
	(\$ in millions)		
Available for sale:			
Realized (gains) on sale of securities and cash and cash equivalents	\$ (3.9)	\$ (24.8)	Realized and unrealized investment gains
Realized losses on sale of securities and cash and cash equivalents	58.9	4.4	Realized and unrealized investment losses
	55.0	(20.4)	Income/(loss) from operations before income tax
Tax on net realized gains of securities	—	—	Income tax (expense)/benefit
	\$ 55.0	\$ (20.4)	Net income/(loss)
Realized derivatives:			
Net realized gains on settled derivatives	15.4	(6.2)	General, administrative and corporate expenses
Tax on settled derivatives	—	—	Income tax (expense)/benefit
	\$ 15.4	\$ (6.2)	Net income/(loss)
Total reclassifications from AOCI to the statement of operations, net of income tax	\$ 70.4	\$ (26.6)	Net income/(loss)

23. Credit Facilities and Short-term Debt

In the normal course of its operations, the Company enters into agreements with financial institutions to obtain financing through secured and unsecured credit facilities.

Credit Agreement. On December 1, 2021, Aspen Holdings and certain of its direct or indirect subsidiaries (collectively, the "Borrowers") entered into a Third Amended and Restated Credit Agreement, as further amended from time to time (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 and the Second Amended and Restated Credit Agreement, dated as of March 27, 2017, among Aspen Holdings, certain subsidiaries thereof, various lenders and Barclays Bank plc, as administrative agent. The Credit Agreement will be used by the Borrowers to finance the working capital needs of the Aspen Holdings and its subsidiaries, for letters of credit in connection with the insurance and reinsurance businesses of the Company and its subsidiaries and borrowings for other general corporate purposes. Initial availability under the Credit Agreement is \$300,000,000 and the Company has the right to request (subject to the terms and conditions of the Credit Agreement) an increase to the credit facility by up to \$100,000,000. The Credit Agreement will expire on December 1, 2026.

As at December 31, 2022, there were no borrowings 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, non-credit enhanced debt rating of the Company, as determined 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 as at the last day of each fiscal quarter of the Company to be less than the sum of (i) \$2,019,600,000, (ii) 25% of consolidated net income during the period from January 1, 2021 to and including such last day of such fiscal quarter (if positive) and (iii) 25% of the aggregate net cash proceeds of all issuances by the Company of shares of its capital stock during the period from January 1, 2021 to and including such last day of such fiscal quarter, but excluding (x) any amount included in the Company's accumulated other comprehensive income or loss related to unrealized gains or losses on available for sale securities and (y) during the period from January 1, 2022, any amount included in net unrealized investment gains or losses, related to unrealized gains or losses on trading securities, (b) the ratio of its total consolidated debt to the sum of such debt plus our consolidated tangible net worth to exceed 35% as at the last day of any fiscal quarter of the Company 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.

Other Credit Facilities.

(i) On March 2, 2023, Aspen Bermuda and Citibank Europe plc ("Citi Europe") amended the committed letter of credit facility, dated July 30, 2012, as amended with effect on June 30, 2014, June 30, 2016, June 30, 2018, September 20, 2019, June 26, 2020 and June 29, 2022 (the "LOC Facility"). The June 29, 2022 amendment to the LOC Facility extends the term to June 30, 2024. The maximum aggregate amount available under the LOC Facility is \$400.0 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 certain specific rate 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 December 18, 2014 to change the types of securities or other assets that are acceptable as collateral under the LOC Facility and again on June 29, 2022 to change the representations and warranties granted by Aspen Bermuda in relation to the collateral provided under the 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, 2022, we had \$416.8 million of outstanding collateralized letters of credit under the LOC Facility (December 31, 2021 — \$452.4 million).

(ii) On February 7, 2019, Aspen European and Aspen Holdings (acting as guarantor of Aspen European) entered into a letter of credit facility for the purpose of obtaining a letter of credit in favor of Aspen UK for a sum not to exceed \$100 million to provide approved regulatory capital for Aspen UK. A letter of credit was issued in favor of Aspen UK for a sum of \$100 million. This facility was amended and restated with respect to February 7, 2023, pursuant to which the \$100 million letter of credit was extended to February 11, 2027.

(iii) On October 27, 2022, AUL and Aspen Holdings (acting as guarantor of AUL), effected an amendment to a letter of credit facility agreement for the account of AUL, pursuant to which a syndicate of lenders issued a several letter of credit in an aggregate amount of \$285,000,000, for the benefit of Lloyd's, to support AUL's Funds at Lloyd's requirements in connection with the 2023 year of account at Lloyd's. This further amended the letter of credit facility agreement, dated November 3, 2020, entered into between AUL, Aspen Holdings (acting as guarantor of AUL) and various lenders, for the account of AUL, pursuant to which a lender provided a maximum aggregate amount of \$235,000,000, to support AUL's Funds at Lloyd's requirements in connection with the 2021 year of account at Lloyd's, as amended on May 7, 2021, November 1, 2021 and May 6, 2022, in connection with the 2021 and 2022 underwriting years of account at Lloyd's, as applicable.

(iv) On December 1, 2022, AUL and Aspen Holdings (acting as guarantor of AUL) amended a Funds at Lloyd's Facility Agreement dated November 25, 2020, as amended on December 2, 2021, for the account of AUL. This facility provides that a maximum aggregate amount of up to \$80.0 million of acceptable securities may be deposited with, and for the

benefit of, Lloyd's on behalf of AUL to support AUL's Funds at Lloyd's requirements in connection with the 2023 year of account at Lloyd's.

(v) On December 1, 2022, AUL and Aspen Bermuda (acting as AUL's guarantor) amended and restated a Funds a Lloyd's Facility Agreement dated November 30, 2020, as amended on November 30, 2021, for the account of AUL. This facility provides that a maximum aggregate amount of up to \$150 million of acceptable securities may be deposited with, and for the benefit of, Lloyd's on behalf of AUL to support AUL's Funds at Lloyd's requirements in connection with the 2023 year of account at Lloyd's.

(vi) On November 5, 2021, Aspen Bermuda entered into an uncommitted Continuing Agreement for Standby Letters of Credit and Demand Guarantees, as amended on April 1, 2022, where Aspen Bermuda has the ability to request letters of credit to be used in support of policyholder obligations with the consent of the lender. The fee associated with this facility is a facility fee based on the aggregate face amount of outstanding letters of credit. As at December 31, 2022 we had \$120 million of outstanding collateralized letters of credit under this facility.

(vii) On April 1, 2021, the Company's subsidiaries, AAIC and Aspen Specialty, each established a secured line of credit at Federal Home Loan Bank of Boston ("FHLBB"). Advances may be used to support general corporate purposes. The maximum amount available under these facilities will vary based on the borrower's net admitted assets or reserve assets (total invested assets) and the lender's underwriting criteria. Aspen Specialty's maximum borrowing capacity available from FHLBB upon initial application is 15% of net admitted assets or approximately \$223 million, and is subject to North Dakota approval. Under Texas state insurance law, without the prior consent of the Texas Department of Insurance, the amount of assets AAIC may pledge to secure debt obligations is limited to 10% of its reserve assets, resulting in a maximum borrowing capacity for AAIC under its FHLBB facility of approximately \$141 million. Neither AAIC nor Aspen Specialty expects to draw on these facilities in the near future.

(viii) On November 5, 2021, Aspen Holdings entered into a letter of credit facility agreement. The letter of credit issued under this facility is for the benefit of Aspen Bermuda, as beneficiary, and has been applied towards the eligible capital of Aspen Bermuda, and classified as ancillary Tier 3 capital of such entity, in accordance with applicable Bermuda laws and regulations. The total commitment under the facility is \$100,000,000. A letter of credit in the full amount of the available commitment has been issued to Aspen Holdings under this facility.

(ix) On December 29, 2021, Aspen Holdings entered into a committed letter of credit facility agreement. The letter of credit issued under this facility is for the benefit of Aspen Bermuda, as beneficiary, and has been applied towards the eligible capital of Aspen Bermuda, and classified as ancillary Tier 3 capital of such entity, in accordance with applicable Bermuda laws and regulations. The total commitment under the facility is \$75,000,000. A letter of credit in the full amount of the available commitment has been issued to Aspen Holdings under this facility.

(x) On June 17, 2022, AUL and Aspen Holdings (acting as AUL's guarantor) entered into a securities lending transaction, pursuant to a global master securities lending agreement. This facility provides that a maximum aggregate amount of up to \$50 million of eligible securities may be loaned to AUL, for the benefit of, Lloyd's, on behalf of AUL to support AUL's Funds at Lloyd's requirements in connection with the 2023 year of account at Lloyd's. As at December 31, 2022, the market value of the loaned securities under this facility was approximately \$50,000,000.

(xi) On December 21, 2022, Aspen Bermuda entered into an uncommitted Continuing Letter of Credit Agreement (For Standby Letters of Credit), where Aspen Bermuda has the ability to request letters of credit to be used in support of policyholder collateral obligations with the consent of the lender. The fee associated with this facility is a facility fee based on the aggregate face amount of outstanding letters of credit. As at December 31, 2022, we had \$100 million of outstanding collateralized letters of credit under this facility.

(xii) On November 13, 2002, Aspen UK entered into an uncommitted secured letter of credit facility agreement, where Aspen UK has the ability to issue letters of credit to be used in support of policyholder collateral obligations with the consent of the lender. The fee associated with this facility is a facility fee based on the aggregate face amount of outstanding letters of credit. As at December 31, 2022, we had \$75.1 million of outstanding collateralized letters of credit under this facility.

(xiii) On January 27, 2021, Aspen UK entered into an uncommitted unsecured letter of credit facility agreement, where Aspen UK has the ability to issue letters of credit to be used in support of policyholder and internal reinsurance collateral obligations with the consent of the lender. The fee associated with this facility is a facility fee based on the aggregate face

amount of outstanding letters of credit. As at December 31, 2022, we had \$22.8 million of outstanding collateralized letters of credit under this facility.

The above credit facilities include certain restrictive covenants customary for facilities of this type, including restrictions on indebtedness, consolidated tangible net worth, and minimum financial strength ratings, with such financial covenants largely consistent with these set forth in the Credit Agreement. In addition, the agreements include default covenants, which could require the Company to fully secure the outstanding amounts thereunder and/or result in the Company not being allowed to issue any new letters of credit.

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. In light of the impending maturity of the 2023 Senior Notes, the Company continues to monitor the capital markets.

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 UK 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.

The following table summarizes our contractual obligations under short-term debt as at December 31, 2022.

<u>Contractual Basis</u>	<u>Payments Due By Period</u>	
	<u>Less than 1 year</u>	<u>Total</u>
	(\$ in millions)	
Short-term Debt Obligations	\$ 300.0	\$ 300.0

The Senior Notes obligation disclosed above does not include the \$14.3 million annual interest payable associated with the Senior Notes.

24. Allowance for Expected Credit Losses

The following tables summarize the Company’s allowance for expected credit losses for the twelve months ended December 31, 2022 in investments, reinsurance recoverables and receivables following the adoption of ASU 2016-13 *Financial Instruments - Credit Losses (Topic 326)*”:

	<u>Twelve Months Ended December 31, 2022</u>			
	(\$ in millions)			
	<u>Investments</u>	<u>Reinsurance Recoverables</u>	<u>Receivables</u>	<u>Total</u>
Opening value as at January 1, 2022	\$ 2.7	\$ 3.3	\$ 30.2	\$ 36.2
Movement of the allowance for credit losses during the year	5.0	0.4	(5.2)	0.2
Closing value as at December 31, 2022	<u>\$ 7.7</u>	<u>\$ 3.7</u>	<u>\$ 25.0</u>	<u>\$ 36.4</u>

	Twelve Months Ended December 31, 2021			
	(\$ in millions)			
	Investments	Reinsurance Recoverables	Receivables	Total
Opening value as at January 1, 2021	\$ 0.2	\$ 3.8	\$ 34.0	\$ 38.0
Movement of the allowance for credit losses during the year	2.5	(0.5)	(3.8)	(1.8)
Closing value as at December 31, 2021	<u>\$ 2.7</u>	<u>\$ 3.3</u>	<u>\$ 30.2</u>	<u>\$ 36.2</u>

25. Subsequent Events

The Company declared and paid an ordinary shares dividend of \$20 million to Highlands Bermuda Holdco, Ltd., the holder of all the Company's ordinary shares, on April 3, 2023.

INDEX OF FINANCIAL STATEMENT SCHEDULES

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ASPEN INSURANCE HOLDINGS LIMITED

SCHEDULE I - INVESTMENTS

For the Twelve Months Ended December 31, 2022, 2021 and 2020

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, 2022 and 2021

	As at December 31, 2022	As at December 31, 2021
	(\$ in millions, except per share amounts)	
ASSETS		
Fixed income maturities (trading)	40.5	42.6
Cash and cash equivalents	44.4	45.0
Investments in subsidiaries ⁽¹⁾	2,767.9	3,142.0
Intercompany funds due from affiliates	1.7	1.3
Right-of-use operating lease assets	2.0	2.5
Other assets	5.9	8.0
Total assets	<u>\$ 2,862.4</u>	<u>\$ 3,241.4</u>
LIABILITIES		
Accrued expenses and other payables	22.3	25.5
Intercompany funds due to affiliates	180.5	139.0
Short-term debt	299.9	—
Long-term debt	—	299.9
Operating lease liabilities	1.7	2.2
Total liabilities	<u>\$ 504.4</u>	<u>\$ 466.6</u>
SHAREHOLDERS' EQUITY		
Ordinary Shares:		
60,395,839 shares of par value \$0.01 each (December 31, 2021 — 60,395,839)	\$ 0.6	\$ 0.6
Additional paid in capital	1,514.7	1,514.7
Retained earnings	1,349.0	1,382.5
Accumulated other comprehensive income, net of taxes:		
Unrealized (loss)/gains on investments	(333.2)	34.6
Gain/(loss) on derivatives	13.8	(1.6)
Cumulative (losses) on foreign currency translation adjustments	(186.9)	(156.0)
Total accumulated other comprehensive (loss)	<u>(506.3)</u>	<u>(123.0)</u>
Total shareholders' equity	<u>2,358.0</u>	<u>2,774.8</u>
Total liabilities and shareholders' equity	<u>\$ 2,862.4</u>	<u>\$ 3,241.4</u>

⁽¹⁾ The Company's investment in subsidiaries is 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.

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, 2022, 2021 and 2020

	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021	Twelve Months Ended December 31, 2020
	(\$ in millions)		
Operating Activities:			
Equity in net earnings/(losses) of subsidiaries and other investments, equity method	\$ 14.2	\$ (90.5)	\$ (108.4)
Dividend income	121.7	193.0	141.5
Net realized and unrealized investment (losses)/gains	(4.0)	(0.5)	2.5
Other income	1.0	—	—
Total revenues	132.9	102.0	35.6
Expenses:			
General, administrative and corporate expenses	(62.7)	(54.6)	(74.6)
Interest expense	(14.3)	(14.3)	(14.3)
Other expense	(4.8)	(3.3)	(3.1)
Income/(loss) from operations before income taxes	51.1	29.8	(56.4)
Income tax expense	—	—	—
Net income /(loss)	51.1	29.8	(56.4)
Amount attributable to non-controlling interest	—	—	—
Net income/(loss) attributable to Aspen Insurance Holdings Limited ordinary shareholders	51.1	29.8	(56.4)
Other comprehensive (loss)/income, net of taxes:			
Change in unrealized (losses)/gains on investments	(367.8)	(158.6)	108.0
Net change from current period hedged transactions	15.4	(6.2)	0.3
Change in foreign currency translation adjustment	(30.9)	21.4	(11.9)
Other comprehensive (loss)/income, net of tax	(383.3)	(143.4)	96.4
Comprehensive (Loss) / Income	\$ (332.2)	\$ (113.6)	\$ 40.0

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE II - CONDENSED FINANCIAL INFORMATION OF REGISTRANT - Continued

STATEMENTS OF CASH FLOWS
For the Twelve Months Ended December 31, 2022, 2021 and 2020

	Twelve Months Ended December 31, 2022	Twelve Months Ended December 31, 2021	Twelve Months Ended December 31, 2020
	(\$ in millions)		
Cash Flows From Operating Activities:			
Net income (excluding equity in net earnings of subsidiaries)	\$ 36.9	\$ 120.3	\$ 52.0
Adjustments:			
Realized and unrealized losses/(gains)	19.7	(6.7)	1.5
(Gain)/loss on derivative contracts	(15.4)	6.2	(0.3)
Amortization of right-of-use operating lease assets	0.5	0.5	0.4
Interest on operating lease liabilities	0.1	0.1	(0.4)
Change in other assets	2.1	(1.6)	0.5
Change in accrued expenses and other payables	(3.2)	1.4	15.9
Change in intercompany activities	41.1	35.0	41.6
Change in right-of use assets	—	(2.0)	—
Change in operating lease liabilities	(0.6)	1.5	—
Net cash generated by operating activities	81.2	154.7	111.2
Cash Flows From/(Used in) Investing Activities:			
(Purchases)/proceeds of fixed income securities	(10.0)	(42.6)	75.6
Proceeds from sales and maturities of fixed maturities, trading . . .	7.8	—	—
Investment in subsidiaries	5.0	(115.0)	(87.3)
Net cash from/(used in) investing activities	2.8	(157.6)	(11.7)
Cash Flows (Used in) Financing Activities:			
Net cash (used in) financing activities	(84.6)	(44.5)	(44.5)
(Decrease)/increase in cash and cash equivalents	(0.6)	(47.4)	55.0
Cash and cash equivalents — beginning of period	45.0	92.4	37.4
Cash and cash equivalents — end of period	\$ 44.4	\$ 45.0	\$ 92.4

ASPEN INSURANCE HOLDINGS LIMITED
SCHEDULE III - SUPPLEMENTARY INSURANCE INFORMATION
For the Twelve Months Ended December 31, 2022, 2021 and 2020

Supplementary Information

(\$ in millions)

Year Ended December 31, 2022	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	\$ 227.2	\$ 1,360.7	\$ 862.4	\$ 1,251.8		\$ 770.3	\$ 252.4	\$ 1,426.4	\$ 142.5
Insurance	91.8	1,452.5	857.8	1,436.9		909.7	179.4	1,469.6	244.0
Total	\$ 319.0	\$ 2,813.2	\$ 1,720.2	\$ 2,688.7	\$ 188.1	\$ 1,680.0	\$ 431.8	\$ 2,896.0	\$ 386.5

Year to date December 31, 2021	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	\$ 205.2	\$ 2,148.4	\$ 688.6	\$ 1,118.8		\$ 705.2	\$ 221.6	\$ 1,199.0	\$ 121.3
Insurance	85.6	2,165.3	827.6	1,291.7		988.1	192.5	1,388.7	211.8
Total	\$ 290.8	\$ 4,313.7	\$ 1,516.2	\$ 2,410.5	\$ 147.5	\$ 1,693.3	\$ 414.1	\$ 2,587.7	\$ 333.1

Year to date December 31, 2020	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	\$ 206.8	\$ 2,095.7	\$ 617.6	\$ 1,287.7		\$ 958.6	\$ 246.0	\$ 1,297.7	\$ 110.8
Insurance	99.8	1,874.4	746.1	1,239.8		882.2	219.7	1,280.1	197.2
Total	\$ 306.6	\$ 3,970.1	\$ 1,363.7	\$ 2,527.5	\$ 154.6	\$ 1,840.8	\$ 465.7	\$ 2,577.8	\$ 308.0

ASPEN INSURANCE HOLDINGS LIMITED

SCHEDULE IV - REINSURANCE

For the Twelve Months Ended December 31, 2022, 2021 and 2020

Premiums Written

	<u>Direct</u>	<u>Assumed</u>	<u>Ceded</u>	<u>Net Amount</u>
	(\$ in millions)			
2022	\$ 2,531.7	\$ 1,807.0	\$ (1,442.7)	\$ 2,896.0
2021	\$ 2,341.4	\$ 1,597.0	\$ (1,350.7)	\$ 2,587.7
2020	\$ 2,042.1	\$ 1,656.4	\$ (1,120.7)	\$ 2,577.8

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)				
2022	\$ 2,370.8	\$ 1,617.2	\$ (1,299.3)	\$ 2,688.7	60.1 %
2021	\$ 2,139.1	\$ 1,479.2	\$ (1,207.8)	\$ 2,410.5	61.4 %
2020	\$ 2,026.4	\$ 1,612.0	\$ (1,110.9)	\$ 2,527.5	63.8 %

ASPEN INSURANCE HOLDINGS LIMITED

SCHEDULE V - VALUATION AND QUALIFYING ACCOUNTS
For the Twelve Months Ended December 31, 2022, 2021 and 2020

The following table shows the movement in the Company's bad debt provision during the twelve months ended December 31, 2022, 2021 and 2020:

	<u>Balance at Beginning of Year</u>	<u>Charged to Costs and Expenses</u>	<u>Charged to Other Accounts</u>	<u>Deductions</u>	<u>Balance at End of Year</u>
<u>Provisions for Bad Debt</u>			(\$ in millions)		
2022					
Premiums receivable from underwriting activities . .	\$ 30.2	\$ (5.2)	\$ —	\$ —	\$ 25.0
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —
2021					
Premiums receivable from underwriting activities . .	\$ 34.0	\$ (3.8)	\$ —	\$ —	\$ 30.2
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —
2020					
Premiums receivable from underwriting activities . .	\$ 23.0	\$ 11.0	\$ —	\$ —	\$ 34.0
Reinsurance	\$ —	\$ —	\$ —	\$ —	\$ —

REPORT OF THE INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Aspen Insurance Holdings Limited

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Aspen Insurance Holdings Limited (the Company) as of December 31, 2022, the related consolidated statements of operations and other comprehensive income (loss), changes in shareholders' equity and cash flows for the year ended December 31, 2022, and the related notes and financial statement schedules I to V (collectively referred to as the "consolidated financial statements"). In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and the results of its operations and its cash flows for the year ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audit. 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit 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 audit included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

Critical Audit Matters

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

Valuation of incurred but not reported reserve estimates, gross and net of reinsurance

Description of the Matter

At December 31, 2022, the Company's reserves for losses and loss adjustment expenses, net of reinsurance, was \$2,813 million, of which a significant proportion is incurred but not reported reserves ('IBNR'). As described in Notes 2(b) and 10 of the consolidated financial statements, losses and loss adjustment expenses represents management's estimate of the ultimate costs of all reported and unreported losses incurred through the balance sheet date. There is significant uncertainty inherent in estimating the IBNR, gross and net of reinsurance. In particular, management's estimate is sensitive to the actuarial methods selected and the significant assumptions applied, including the impact of catastrophe events and other large losses, reinsurance assumptions incorporated into net loss ratios, expected trends in claims severity and frequency, and expected duration of the respective claim's development period.

How We Addressed the Matter in Our Audit

Auditing management's estimate for IBNR reserve estimates, gross and net of reinsurance, was complex and required the involvement of our actuarial specialists, due to the sensitivity of the estimate to the actuarial methods selected and the judgmental nature of the significant assumptions used in the valuation of the estimate, including the netting of IBNR for reinsurance.

To assess the actuarial methodologies applied, with the assistance of our actuarial specialists, we compared management's methods to those used in the industry for similar lines of business. To evaluate the significant assumptions used in the Company's estimates, with the assistance of our actuarial specialists, our procedures included, among others, comparing the significant assumptions, such as incurred to ultimate loss ratios, and industry loss levels specifically for the catastrophe events and other large losses, expected trends in claims severity and frequency and expected duration of the respective claim's development period, as well as reinsurance assumptions, to current industry benchmarks. Our procedures also included using the Company's historical data to develop our own independent projections and a range of reasonable reserve estimates for selected classes of business. We compared our independent projections and range of reasonable reserve estimates to the Company's recorded losses and loss adjustment expense reserves, both gross and net of reinsurance.

Valuation of privately-held investments

Description of the Matter

At December 31, 2022, the fair value of the Company's privately-held investments totaled \$533 million. The fair values are based on internally developed discounted cash flow models as discussed in Note 6 to the consolidated financial statements. The discount and dividend or interest rates used by management in the cash flow models are significant unobservable inputs, which create greater subjectivity when determining the fair value of these investments.

How We Addressed the Matter in Our Audit

Auditing the fair value of the privately-held investments was challenging due to the judgmental nature of the inputs and assumptions used, including discount, dividend, interest rates and timing of cash flows, as these were not directly observable in the market.

To test the fair value estimates, among other procedures, we involved our valuation specialists to independently determine a range of fair values for a sample of securities, which we compared to management's estimates of fair value for the selected securities. In developing our independent estimates, we, together with our valuation specialists, compared management's assumptions such as discount, dividend and interest rates, as well as timing of cashflows, to comparable publicly available market information, comparable instruments and other valuation techniques, if available. We also compared the fair value of the privately-held investments to independent third-party vendor pricing, where available.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2022.

London, United Kingdom

April 20, 2023

Report of 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 sheet of Aspen Insurance Holdings Limited and subsidiaries (the “Company”) as of December 31, 2021, the related consolidated statements of operations and other comprehensive income, changes in shareholders’ equity, and cash flows for each of the years in the two-year period ended December 31, 2021, 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, 2021, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2021, 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. 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

We served as the Company’s auditor from 2002 to 2022.

London, United Kingdom

May 16, 2022

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:

Exhibit Number	Description
1.1	<u>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))</u>
1.2	<u>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)</u>
1.3	<u>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)</u>
2.1	<u>Description of Securities, filed with this report</u>
3.1	<u>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))</u>
3.2	<u>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)</u>
3.3	<u>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)</u>
3.4	<u>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)</u>
3.5	<u>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)</u>
3.6	<u>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)</u>
3.7	<u>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)</u>
3.8	<u>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)</u>
3.9	<u>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)</u>
3.10	<u>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)</u>
3.11	<u>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)</u>

- 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 [Management Consulting Agreement, dated March 28, 2019, between Aspen Insurance Holdings Limited and Apollo Management Holdings, L.P. \(incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 29, 2019\)](#)
- 4.4 [Aspen Insurance U.S. Services Inc. Nonqualified Deferred Compensation Plan \(incorporated herein by reference to exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the three months ended March 31, 2014, filed on May 1, 2014\)*](#)
- 4.5 [Amended and Restated Aspen Insurance U.S. Services Inc. Nonqualified Deferred Compensation Plan \(incorporated herein by reference to exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the three months ended September 30, 2014, filed on November 7, 2014\)*](#)
- 4.6 [Second Amended and Restated Credit Agreement, dated March 27, 2017, among the Company, various subsidiaries therefor, various lenders and Barclays Bank plc, as administrative agent \(incorporated herein by reference to exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the three months ended March 31, 2017 filed on May 4, 2017\)](#)
- 4.7 [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 \(incorporated herein by reference to exhibit 4.13 filed with the Company's Annual Report on Form 20-F for the year ended December 31, 2019 filed on April 6, 2020\).](#)
- 4.8 [Second Amendment to Second Amended and Restated Credit Agreement dated April 28, 2020, among the Company, various lenders and Barclays Bank plc, as administrative agent \(incorporated herein by reference to exhibit 4.8 filed with the Company's Annual Report on Form 20-F for the year ended December 31, 2020 filed on April 9, 2021\).](#)
- 4.9 [Third Amended and Restated Credit Agreement, dated as of December 1, 2021, among the Company, various subsidiaries therefor, various lenders and Barclays Bank plc, as administrative agent \(incorporated herein by reference to exhibit 99.1 of the Company's Current Report on Form 6-K, filed on December 2, 2021\)](#)
- 4.10 [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. \(incorporated herein by reference to exhibit 10.2 to the Company's Current Report on Form 8-K, filed on October 13, 2006\)](#)
- 4.11 [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 \(incorporated herein by reference to exhibit 10.5 to the Company's Current Report on Form 8-K, filed on October 13, 2006\)](#)
- 4.12 [Reinsurance Deposit Agreement, dated October 11, 2006, between Aspen Bermuda Limited \(formerly known as Aspen Insurance Limited\) and Citibank Ireland Financial Services plc. \(incorporated herein by reference to exhibit 10.6 to the Company's Current Report on Form 8-K, filed on October 13, 2006\)](#)
- 4.13 [Committed Letter of Credit Facility, dated July 30, 2012, between Aspen Bermuda Limited and Citibank Europe plc \(incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on July 31, 2012\)](#)
- 4.14 [Committed Letter of Credit Facility, dated June 30, 2014, between Aspen Bermuda Limited and Citibank Europe plc \(incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K, filed on July 3, 2014\)](#)
- 4.15 [Committed Letter of Credit Facility, dated June 30, 2016, between Aspen Bermuda Limited and Citibank Europe plc \(incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K, filed on June 30, 2016\)](#)
- 4.16 [Deed of Amendment, dated June 29, 2018, between Aspen Bermuda Limited and Citibank Europe plc \(incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on July 3, 2018\)](#)
- 4.17 [Deed of Amendment, dated September 20, 2019, between Aspen Bermuda Limited and Citibank Europe plc. \(incorporated herein by reference to exhibit 4.21 to the Company's Annual Report on Form 20-F for the year ended December 31, 2019 filed on April 6, 2020\).](#)

- 4.18 [Deed of Amendment, dated June 26, 2020, between Aspen Bermuda Limited and Citibank Europe plc \(incorporated herein by reference to exhibit 4.17 filed with the Company's Annual Report on Form 20-F for the year ended December 31, 2020 filed on April 9, 2021\).](#)
- 4.19 [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. \(incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K, filed on December 18, 2014\)](#)
- 4.20 [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. \(incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K filed on April 26, 2018\)](#)
- 4.21 [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 \(incorporated herein by reference to exhibit 10.1 of the Company's Current Report on Form 8-K filed on July 5, 2018\)](#)
- 4.22 [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 \(incorporated herein by reference to exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 7, 2018\)](#)
- 4.23 [Amended and Restated Reinsurance Agreement, dated January 10, 2022, among the Company, various subsidiaries therefor, and Enstar Group Limited+, filed with this report](#)
- 4.24 [Master Services Agreement: ITO Services, dated May 27, 2022, between Aspen Insurance UK Services Limited and Mindtree Limited, filed with this report](#)
- 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 Christopher Coleman, 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 Christopher Coleman, 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, 2022 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.

+ Certain portions of this exhibit (indicated by "[***]"), including certain schedules (or similar attachments) thereto, have been redacted. The registrant agrees to furnish a copy of any omitted information schedule to the Securities and Exchange Commission upon request.

** 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/ Christopher Coleman

Name: Christopher Coleman

Title: Chief Financial Officer

Date: April 20, 2023