Validus Reinsurance, Ltd. Singapore Branch

Public Disclosure

For the fiscal year ended December 31, 2021

Report date June 30, 2022

Contents

Purpose

This document is meant to satisfy the public disclosure requirements, as outlined in Notice 124 of the Monetary Authority of Singapore (the “MAS”), for Validus Reinsurance, Ltd. Singapore Branch (the “Singapore Branch”).

The information in this document is directly extracted from or based on information from the Validus Reinsurance, Ltd. (“Validus Re Ltd.”) Consolidated Financial Statements, which can be found on the Bermuda Monetary Authority (“BMA”) website located at http://www.bma.bm; and the MAS Insurance Company Returns for the Singapore Branch, which can be found on the MAS website located at http://www.mas.gov.sg/.

The information provided below is for the fiscal year ended December 31, 2021 and contains disclosures relating to Validus Re Ltd., the intermediate parent and head office of the Singapore Branch. Hereinafter, "the Company", "us" or "we" is used to describe any or all of Validus Re Ltd. and its subsidiary.

Note: Paragraph 10 of Notice 124 states: “*Where any disclosure which relates to activities conducted at the group* level or at the head office level (as the case may be) has been made at the group level or head office level (as the case may be), a licensed insurer, may cross-refer to those disclosures made at the group level or head office level (as the case may be). *Group refers to the ultimate holding company, its subsidiaries and any other company or entity treated as part of the ultimate holding company’s group of companies according to the Accounting Standards.*”. Accordingly, the majority of the disclosures made herein are those of Validus Re Ltd. the intermediate parent entity of the Singapore Branch.

All financial information contained herein relating to Validus Re Ltd. includes results from the Singapore Branch and is expressed in thousands of U.S. dollars utilizing U.S. GAAP unless otherwise indicated. Singapore specific amounts are presented in accordance with the statutory requirements of the annual MAS Insurance Company Returns.

Information provided herein should be referenced in conjunction with additional information provided in the sources cited above.

Company Profile

Validus Re Ltd. was incorporated under the laws of Bermuda on October 19, 2005. The Company is 100% owned by Validus Holdings, Ltd. (the “parent company” or “Validus Holdings”) which was also incorporated under the laws of Bermuda on October 19, 2005. Validus Re Ltd. is registered as a Class 4 insurer under The Insurance Act 1978 of Bermuda, amendments thereto and the Insurance Account Rules 2016 (the “Legislation”). The Company primarily offers treaty reinsurance coverage on a global basis in the Property and Specialty lines markets.

On July 18, 2018, Validus Holdings completed its previously announced definitive agreement and plan of merger (the “Merger Agreement”) with American International Group, Inc. (“AIG”) in accordance with Section 105 of the Bermuda Companies Act 1981. Pursuant to the Merger Agreement, Validus Holdings merged with an existing AIG subsidiary, with Validus Holdings continuing as the surviving corporation and as a wholly-owned subsidiary of AIG.

Nature of the Business

Validus Re Ltd. seeks to establish itself as a leader in the global reinsurance markets. The Company’s principal operating objective is to use capital efficiently by underwriting reinsurance contracts with superior risk and return characteristics. The primary underwriting objective is to construct a portfolio of reinsurance contracts that maximizes return on equity subject to prudent risk constraints on the amount of capital exposed to any single event. Risks are managed through a variety of means, including contract terms, portfolio selection, diversification, including line of business and geographic diversification, and retrocession protections

The Company operates as a global provider of reinsurance products, operating primarily through Validus Reinsurance, Ltd., registered as a Class 4 insurer under the Bermuda Insurance Act, Validus Reinsurance (Switzerland) Ltd, licensed as a reinsurer under the Swiss Insurance Supervision Act, both S&P ‘A+’ rated and A.M Best ‘A’ rated balance sheets..

Validus Re Ltd. maintains a branch office in Singapore which commenced operations in December, 2009 and a branch office in Canada which commenced writing business on January 1, 2020 (as noted above).

The Company, including the Singapore Branch, primarily concentrates on property and other reinsurance risks commonly referred to as short-tail reinsurance due to the relatively brief period between the occurrence and payment of a claim.

Details of gross premiums written by line of business for the Company, are provided below:

	2021		2020	
(United States Dollars in thousands)	$	%	$	%
Property	1,192,721	37.61	953,913	39.59
Specialty – Short-tail	1,030,965	32.51	1,010,864	41.95
Specialty – Other	947,688	29.88	444,690	18.46
Total	**3,171,374**	**100.00**	**2,409,467**	**100.00**

Note: Figures provided in the table above and in the line of business descriptions immediately following are based on Validus Re Ltd. consolidated results.

Details of gross premiums written by line of business for the Singapore Branch, based on information provided in the MAS Insurance Company Returns and presented in thousands of Singapore Dollars, are provided below:

	2021		2020	
(Singapore Dollars in thousands)	S$	%	S$	%
Property	56,235	89.14	46,771	84.78
Marine and Aviation	6,482	10.29	8,250	14.95
Liability and Other	357	0.57	145	0.27
Total	**63,084**	**100.00**	**55,166**	**100.00**

Property: The Company primarily underwrites property reinsurance business on a catastrophe excess of loss, per risk excess of loss, aggregate excess of loss, and proportional basis. Each of these treaty types are described in greater detail hereunder:

Property catastrophe excess of loss: Property catastrophe reinsurance covers insurance companies' (referred to as "ceding companies" or "cedants") exposures to an accumulation of property and related losses from separate policies, typically relating to natural disasters or other catastrophic events. Property catastrophe reinsurance is generally written on an excess of loss basis, which responds when aggregate claims and claim expenses from a single occurrence for a covered peril exceed a certain amount specified in a particular contract. (In regards to the Singapore Branch, coverage for property catastrophe in Asia is more evenly distributed between pro-rata and excess of loss). Under these contracts, the Company provides protection to an insurer for a portion of the total losses in excess of a specified loss amount, normally up to a maximum amount per loss and/or an aggregate amount across multiple losses, as specified in the contract. 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 specific regions or geographical areas. Property catastrophe reinsurance contracts are typically written on an "all perils" basis, providing protection against losses from earthquakes and hurricanes, as well as other natural and man-made catastrophes such as floods, tornadoes, fires and storms. Coverages may also be written to provide limited coverage based on named perils only, such as windstorm-only coverage. The predominant exposures covered are losses stemming from property damage and business interruption coverage resulting from a covered peril. Certain risks, such as terrorism, cyber-crime, war or nuclear contamination may be excluded, partially or wholly, from certain contracts.

Property per risk excess of loss: Property per risk reinsurance provides coverage for ceding companies' excess retention on individual property and related risks, such as highly-valued buildings. Per risk reinsurance protects cedants on a "single risk" basis. A "risk" in this context might relate to one building, or a group of buildings, or to one insurance policy which the cedant treats as a single risk. Coverage is usually triggered by a large loss sustained by an individual risk rather than by smaller losses which fall below the specified retention of the reinsurance contract. Such property per risk coverages are generally written on an excess of loss basis, which provides the reinsured with protection beyond a specified amount up to the limit set within the reinsurance contract.

Property aggregate excess of loss: Property aggregate excess of loss provides coverage for ceding companies on an aggregate basis for losses occurring over a specified period of time, typically one year, as opposed to coverage for losses due to one single occurrence. Losses from each occurrence are typically subject to a franchise deductible, and amounts exceeding that deductible are aggregated over the period to determine the aggregate ultimate loss. This aggregate ultimate loss is in turn subject to limits and deductibles in the aggregate.

Property proportional: Property proportional contracts require that the reinsurer share the premiums as well as the losses and loss expenses in an agreed proportion with the reinsured.

The table below illustrates the gross premiums written for property coverage by treaty type:

2021	2020

(United States Dollars in thousands)	$	%	$	%
Catastrophe excess of loss	671,096	56.27	544,748	57.11
Per risk excess of loss	27,333	2.29	17,579	1.84
Aggregate excess of loss	202,567	16.98	181,380	19.01
Proportional	291,725	24.46	210,206	22.04
Total	**1,192,721**	**100.00**	**953,913**	**100.00**

Specialty – Short-tail*:* This line consists of reinsurance on aerospace and aviation, agriculture, composite, marine, other specialty (composed of contingency, crisis management and life and accident & health), technical lines, terrorism, trade credit, and workers' compensation. The Company seeks to underwrite specialty lines with very limited exposure correlation with its property portfolios. The Company's specialty - short-tail lines are written on a catastrophe excess of loss, per risk excess of loss, aggregate excess of loss, and proportional basis with the coverage and treaty basis consistent with that described in the property section above.

The table below illustrates the gross premiums written for specialty – short-tail coverage by treaty type:

	2021		**2020**	
(United States Dollars in thousands)	$	%	$	%
Catastrophe excess of loss	92,339	8.96	95,316	9.43
Per risk excess of loss	91,628	8.89	70,675	6.99
Aggregate excess of loss	40,009	3.88	25,569	2.53
Proportional	806,989	78.27	819,304	81.05
Total	**1,030,965**	**100.00**	**1,010,864**	**100.00**

Specialty - Other: This class provides reinsurance on casualty and financial lines of business. The Company's specialty – other lines are written on a catastrophe excess of loss, per risk excess of loss, aggregate excess of loss, and proportional basis with the coverage and treaty basis consistent with that described in the property section above.

The table below illustrates the gross premiums written for specialty – other coverage by treaty type:

	2021		**2020**	
(United States Dollars in thousands)	$	%	$	%
Catastrophe excess of loss	4,751	0.50	1,361	0.31
Per risk excess of loss	30,472	3.22	22,731	5.11
Aggregate excess of loss	88,533	9.34	81,238	18.27
Proportional	823,932	86.94	339,360	76.31
Total	**947,688**	**100.00**	**444,690**	**100.00**

Corporate Governance
Board of Directors

The directors of the Company oversee the management of the Company's business and affairs and are responsible for the corporate governance framework. The directors are elected annually at the Company's annual general meeting and as at December 31, 2021, consisted of the following persons, each of whom is either a senior executive of the Company or of AIG:

- Patrick Boisvert;
- Catherine Duffy; and
- Christopher Schaper.

Patrick Boisvert – Director

Patrick is the Chief Financial Officer of Validus Reinsurance, Ltd. Patrick joined the Insurer in 2012 and has over 25 years of experience, including over 20 years in the financial services industry. Prior to this role, Patrick was the Chief Financial Officer of Flagstone Reinsurance Holdings SA. He was previously Chief Financial Officer of West End Capital Management and Vice-President Fund Administration at Bisys Hedge Funds Services. He started his career with Ernst & Young and he is a member of the CPA Institute of Québec. He is also a Chartered Financial Analyst charter holder.

Catherine Duffy – Director

Catherine serves as AIG's Country Manager in Bermuda. She leads local operations, including a cross-functional team, and drives the achievement of AIG's strategic objectives in Bermuda. Cathy is the "face of AIG" within Bermuda for customers, brokers, reinsurers, and others. She also coordinates with North American product leaders to provide direction to local underwriting teams. Cathy is a veteran of the Bermuda International Insurance Industry with experience across many aspects of the industry. She was the first Bermudian woman to gain her CPCU and the author of the first comprehensive book tracing the historical development of the International Insurance Industry, Held Captive - A History of International Insurance in Bermuda. Cathy earned a Bachelor Business Administration in Insurance from Howard University. She has completed executive management programs through MIT as well as Wharton. Recently Cathy was chosen to be a Fellow in the Women's International Forum.

Christopher (Chris) Schaper – Director

Chris is responsible for AIG's assumed reinsurance business which brings together the business operations of Validus Re, AlphaCat and Talbot Treaty under one global enterprise of AIG Re.

Chris has over 30 years of insurance and reinsurance industry experience. He joins AIG from Marsh & McLennan Companies, where he was CEO of Victor Insurance Holdings, Marsh's managing general agent business and one of the largest MGA's in the world. He joined Marsh in 2016 and was also a member of the Marsh Operating Committee. Prior to that, Mr. Schaper served as President of Montpelier Re Ltd. and Underwriting Chairman of Blue Capital, Montpelier's capital markets entity. Previously, Mr. Schaper held several leadership positions at Endurance Specialty Insurance Ltd., including Chief Underwriting Officer and Head of Reinsurance, and Head of Casualty Treaty Reinsurance. Earlier in his career, Mr. Schaper held roles at Gerling Global Financial Products, Employers Reinsurance Corporation (a division of GE Capital), CIGNA and USF&G.Executive Officers:

The Company's executive officers are responsible for the development and execution of the Company's internal controls, budgets, strategic plans and objectives. As at issuance of this report, the executive officers consisted of the following persons:

- Christopher Schaper;
- Patrick Boisvert;
- Kevin Downs;
- William S. Randolph (appointed March 21st, 2022);
- Eric Kobrick;
- Gero Michel;
- Marc Haushofer;
- Paul Roberts;
- Jesse DeCouto;
- Andrew Tudor-Thomas;
- Simon Biggs;
- McKeisha Smith;
- Xiaonan Sun;
- Sven Wehmeyer;

- Angeline Ang;
- Heather Legg; and
- Joy Manning.

Christopher Schaper – President & Chief Executive Officer

Chris also serves as a director. Please refer to "Board of Directors" section above.

Patrick Boisvert – Executive Vice President & Chief Financial Officer

Patrick also serves as a director. Please refer to "Board of Directors" section above.

Kevin Downs – Executive Vice President & Chief Actuary

Kevin Downs serves as Executive Vice President & Chief Actuary. Prior to his appointment as Chief Actuary. Kevin served as Senior Vice President and Reserving Actuary for Validus Reinsurance, Ltd. since joining the firm in May 2009. Kevin has over 20 years of experience in the insurance and reinsurance industry, serving previously as a Senior Consulting Actuary for Towers Perrin, where he was responsible for managing the firm's relationship with various Bermuda reinsurance companies. Prior to joining Towers, Kevin worked for ACE Ltd. in both Philadelphia and London, where he was involved in reserving and settling liabilities for the firm's long-tail legacy exposures. Kevin began his career as a Pricing Actuary at General Accident Insurance in Philadelphia. Kevin holds a B.S. degree in Mathematics from the University of Notre Dame and is a Fellow of the Casualty Actuarial Society.

Eric Kobrick – Executive Vice President & General Counsel

Mr. Kobrick joined AIG in 1997 and has held a variety of senior legal positions during his 24+ years at AIG, including General Counsel of AIG's General Insurance business. He is currently an AIG Senior Vice President and Deputy General Counsel and General Counsel, AIG Re and Reinsurance. His duties include serving as the head lawyer for AIG Re and overseeing the reinsurance lawyers supporting AIG's General Insurance business. Eric also chairs the AIG Pro Bono Program.

Among Eric's various activities outside of AIG, Eric serves as an ARIAS, U.S. Certified Umpire and Arbitrator, and he is a former President of ARIAS, U.S. and Chairman of the ARIAS U.S. Board of Directors. Eric received a B.A. in Government from Cornell University and a J.D. from Columbia Law School. Prior to joining AIG, Eric was a litigation associate at Simpson Thacher & Bartlett LLP and a law clerk to the Honorable Miriam Goldman Cedarbaum in the United States District Court for the Southern District of New York.

William S. Randolph – Chief Risk Officer

William S. Randolph is Executive Vice President & Chief Risk Officer for Validus Reinsurance, Ltd. He joined the firm in February 2021 as Senior Vice President & Head of Reserving before moving to the Chief Risk Officer role in March 2022. William has over 15 years of experience in the insurance and reinsurance industry having previously served as Senior Vice President, Reserving at Renaissance Re Europe AG and Senior Vice President Enterprise Risk Management & Head of Reserving at Tokio Millennium Re AG. Before moving to Bermuda, William has worked as Pricing and Reserving Actuary in Canada and in the UK.

William holds a bachelor degree in Mathematics from the University of Montreal in Canada and is a Fellow of the Casualty Actuarial Society.

Gero Michel – Executive Vice President

Dr. Gero Michel is the Group CRO at AIG Re and responsible for the reinsurance Enterprise Risk Management and Risk measures and risk and pricing strategy for Validus Re, AlphaCat, and Talbot Treaty. Gero joined AIG Re in 2020 and has over 30 years of experience in risk management and risk modeling, has been underwriting in various roles and has managed extensive underwriting and risk analytics teams.

Before joining AIG Re, Gero was heading up Analytics for AON Reinsurance EMEA/UK; was Managing Director of Chaucer Underwriting A/S in Copenhagen, DK; and CRO and Head of Risk Analytics of Montpelier Re where he played a leading role in the analytics and underwriting peer review and strategy of Blue Capital, Montpelier's fund initiative. Prior to this Gero was Managing Director of the Willis Research network, along with heading up model development at Willis in London; headed up international catastrophe underwriting at Endurance Specialty Holdings Ltd., in Bermuda, led the windstorm and flood model development at Risk Management Solutions, Inc.; and was a senior actuarial analyst at Hannover Re.

Gero has a PhD and masters in geo-science and is and Alumni of the Harvard Business school. Gero has been lecturer and adjunct professor for numerous universities including Freiberg University in Germany, University of Western Ontario, Canada and, more recently, for the Frankfurt School of Finance & Management, Germany. He was the principal editor of "Risk Modeling for Hazards and Disasters" (Elsevier, 2018), has been an invited lecturer at numerous insurance and science events and has published various risk and insurance articles.

Marc Haushofer – Executive Vice President

Marc Haushofer is Executive Vice President and Chief Executive Officer, Asia Pacific. He joined Validus Re in 2008 to head the Singapore Branch Office which underwrites general reinsurance business in Asia. He also leads the Singapore Reinsurers' Association (SRA) as its Chairman since January 2017. Marc has over 35 years of experience in the (re)insurance industry. Prior to Validus Re, he was the Chief Executive Officer & Principal Officer of Munich Reinsurance Company, Singapore Branch, heading Munich Re's South-East-Asian Hub. Before that he was a Deputy Member of the Executive Management at Munich Reinsurance Company, Munich. Marc is a certified Versicherungskaufmann which is the German equivalent to Associate of The Chartered Insurance Institute (ACII). He also holds a Certificate in both Strategic Management and Financials for Executives from the St. Gallen Management School. In addition, he successfully accomplished an Executive Management stint with the London Business School.

Paul Roberts – Executive Vice President

Paul Roberts was recently promoted to Executive Vice President, Head of Marine and Energy for Validus Re based in Bermuda. He started his career at Willis Faber and Dumas in 1985 and worked in both the Marine Excess of Loss Treaty department in London and New York as a Divisional Director with responsibilities for London market and international clients. In 1996, Paul moved to Allianz Cornhill where he assumed responsibility for the Marine Excess of Loss Account, a worldwide portfolio. In 2002, Paul moved to Bermuda with Rosemont Reinsurance as an SVP with responsibility for the Marine Reinsurance portfolio. This was followed by a move in December 2005 to be one of the founding members of Validus Reinsurance, as SVP Underwriting for the Marine Treaty portfolio. Since then, Paul has held various roles within the broader group including Talbot Treaty and latterly SVP in Zurich with Validus Reinsurance (Switzerland) Ltd with responsibility for the Marine, Energy and Specialty portfolio written by the Swiss company.

Jesse DeCouto – Executive Vice President

Jesse joined Validus Re in 2007 as a Vice President and Specialty Line Underwriter and was a Senior Vice President for the Marine & Energy and Specialty Lines Underwriting. At December 31st, 2021 he held the role of Executive Vice President and leads the Financial Lines segment. The Financial Lines book underwrites Mortgage, Trade Credit, Structured Credit, Political Risk and Surety. Jesse has been promoted Chief Underwriting Officer effective June 2022.

Jesse has worked very closely with the Validus Actuarial team to develop accumulation, pricing, and surveillance tools to evaluate the Mortgage and Finance exposure assumed by Validus Re across its various business segments. Prior to joining Validus Re Jesse worked at Partner Re for a total of 8 years as a US Property Cat Underwriter in Bermuda and a Pricing Actuary for Partner Re in Greenwich, CT

Jesse earned his MBA at the College of Insurance, New York in Financial Risk Management and his B.S. in Biomedical Engineering from the University of Miami, FL. Jesse is an Associate of the Casualty Actuarial Society.

Andrew Tudor-Thomas – Executive Vice President

Andrew Tudor-Thomas was recently promoted to Executive Vice President, Head of US Property for Validus Re based in Bermuda. He is responsible for developing and executing the US Property department business plan and strategy, incorporating platforms in Bermuda, London and New York. Andrew has worked at Validus Re since January 2013 where he joined as Vice President.

Andrew previously worked as a US Treaty underwriter for Beazley Syndicates at Lloyds and started his career at Guy Carpenter in London working in the US Wholesale Treaty team. Andrew is an Associate of The Chartered Insurance Institute (ACII).

Simon Biggs – Executive Vice President

Simon Biggs is the Chief Executive Officer of Validus Research based in Bermuda. He oversees Research functions that include: Applied Research, Reinsurance Client Analytics, Cat Modeling and Analytical Tool Development. Previously, Simon served as Director of Analytics at Validus Re/Flagstone Re. Prior to Flagstone Re, Simon acted as a Fixed Income Strategist for West End Capital Management.

Simon has over 25 years of experience in analytical tool and model development relating to both Capital and Insurance Markets. Simon holds a B.S. in Computer Science from the University of Warwick (UK).

McKeisha (Keisha) Smith – Executive Vice President

McKeisha Smith joined AIG in September 2019 as Human Resources Leader, Bermuda, where she has dual responsibility for leading the AIG and AIG Re HR teams in Bermuda.

Keisha is a Human Resource Executive with 15+ years' experience and spent a substantial 14 years of her HR career with Butterfield Bank, where she departed as SVP Human Resources. While Head of Bermuda HR at Butterfield, she lead a team of HR professionals; served as a strategic HR business partner; and served as HR lead on the Bank's most recent acquisitions.

Keisha's core values and objectives are to partner with the business to define, attract, assess, develop, and retain talent and critical skills to meet the needs of the business and achieve overall operational excellence through the optimization of HR systems and process.

Outside of AIG, Keisha sits on the Department of Workforce Development's Employment Tribunal where she lends her HR expertise on employment disputes and is the President of the Bermuda Equestrian Federation.

Keisha holds a Bachelor of Science Degree in Accounting and an M.B.A. in Human Resources from Alabama A & M University.

Xiaonan (Shannon) Sun – Executive Vice President

Shannon Sun is the Head of Corporate Development and Chair of the Innovation Committee of AIG Re. She is responsible for AIG Re's corporate development-related initiatives, innovation strategy, as well as Validus Re's retrocession needs for non-property lines of business.

Shannon joined Validus in 2017 and has 15 years of corporate development and strategy experience in both London and Bermuda. She holds a M.A. in Mathematics from Oxford University and is a Chartered Property and Casualty Underwriter (CPCU) and an Associate in Reinsurance.

Sven Wehmeyer – Executive Vice President

Sven Wehmeyer is Executive Vice President and Head of International for Validus Reinsurance, Ltd. and CEO of Validus Reinsurance (Switzerland) Ltd. He joined the firm in October 2006 and has held progressively senior positions. From December 1996 to September 2006, Sven held reinsurance broking positions at Aon Jauch & Hubener, most recently as Executive Director and Head of Division.

He holds a Diplom-Volkswirt and Diplom-Kaufmann from Christian Albrechts University in Kiel, Germany.

Angeline Ang – Senior Vice President

Angeline Ang is the Financial Controller & Senior Vice President for the Validus Re Singapore Branch. She joined the Insurer in 2009 and is responsible for all financial accounting & regulatory requirements of the Branch office.

Heather Legg – Senior Vice President

Heather Legg has recently been brought on board to ultimately serve as the Chief Agent of the proposed Canadian Branch of Validus Reinsurance, Ltd. Heather has over 25 years of experience in the Canadian reinsurance industry, most of which have been in the role of a reinsurance intermediary, starting with Guy Carpenter and spending the last 19 years with Aon.

Heather earned a Masters in Business Administration from McGill University. She is a Fellow, Certified Insurance Professional and currently serves as Chair of the Board of Directors of Against the Grain Theatre.

Joy Manning – Secretary

Joy Manning is the Corporate Secretary of Validus Reinsurance, Ltd. Joy joined Validus in September 2021 and she is responsible for providing corporate secretarial and related administrative support to Validus in Bermuda.

Joy has over 27 years of experience in the field of Secretarial Administration, including 13 years of experience in Corporate Administration. Her most recent role prior to joining Validus was that of Senior Corporate Administrator with Conyers Corporate Services (Bermuda) Limited. She possesses a Bachelor of Science Degree in Professional Management (BPM), Certificate in Supervisory Management, Certified Professional Secretary Designation (CPS), Secretarial Studies certification, and Certificates in Corporate Procedures I and II. She is also currently working toward achieving the Chartered Governance Professional and Secretaries qualification.

Enterprise Risk Management

Risk Management Framework

The Company promotes sound risk management practices at all levels of the organization, and has implemented an Enterprise Risk Management ("ERM") framework (the "Framework") that is aligned with the Company's culture and responds to the needs of the business. The Framework establishes, identifies, assesses, quantifies and manages risks and opportunities. The Framework is designed to:

- Establish the principles by which the Company can evaluate the risk/reward trade-offs associated with key strategic and tactical decisions.
- Establish a risk governance structure that, in respect of all activities related to ERM, operates with clearly defined roles and responsibilities.
- Identify and assess all risks and causes of risks arising out of the Company's strategic initiatives, internal processes, and external environment.
- Establish a set of responses to manage the Company's risks within its stated risk appetite and risk tolerances.
- Establish procedures through which near miss and actual incidents, that either have the potential to impact or have impacted the Company, are reported and reviewed in order to inform the risk identification and assessment process.

Risk Governance:

Our risk governance philosophy reflects the overall governance of the Company while adhering to the overall strategy of the Company.

The Company's Board of Directors provides broad oversight of risk management for Validus Re Ltd. and is responsible for, among other things, approving the Framework, working with management to ensure ongoing, effective implementation of the Framework and reviewing the Company's specific risk limits as defined in the Framework, including limits related to major categories of risk. The implementation of risk policies and oversight of risk management is the responsibility of the Validus Re Risk Management Committee ("VRMC"). The VRMC reports to the Company's Board of Directors and is governed by a charter that is reviewed and approved annually. The VRMC also has a subcommittee, the Model Validation Subcommittee ("MVS"), which is governed by a charter that is reviewed annually. Various risk policies are in place to facilitate consistent risk assessment across the Company and to ensure that strategic business decisions are supported by effective modeling and analysis.

Risk Appetite

The Company's risk appetite is expressed through a series of qualitative and quantitative statements, principles, limits, and tolerances that, in the aggregate, convey the Company's risk and reward preferences and set the risk parameters within which the Company operates. The risk appetite is proposed by management and approved by the Board of Directors.

The significant quantitative measures include meeting minimum returns on capital and risk-adjusted capital over a full insurance industry cycle, managing the probability of break-even net income or better, meeting or exceeding budgeted net income over a calendar year, and managing the probability of losing specified percentages of shareholders' equity in a calendar year. They also include probability thresholds in respect of maintaining a buffer above regulatory and rating agency capital levels.

The Company also sets levels of concentration risks within its risk appetite, including those related to probable maximum losses, zonal aggregates and the contribution of various risk categories to the overall assessment of the Company's risk capital.

Risk Classification

Risks are broadly divided into those that the Company assumes explicitly and from which it derives income and those that are a by-product of the operating and business environment, from which the Company does not earn income.

The risks assumed are categorized as catastrophe, reserve and premium risks (also together referred to as insurance risk), market (or investment) risk, liquidity risk and credit risk. The Company's goal is to get adequately compensated for these risks, while creating optimal insurance and investment portfolios subject to the constraints of the Company's risk appetite. The remaining risks are categorized as Operational, Strategic & Group and Business & Emerging risks, all of which the Insurer's goal is to identify, assess and mitigate to the extent considered appropriate.

Risk Ownership

The Company's risk management philosophy is to entrust risk identification and control activities with the employees who have the responsibility for and expertise in the areas giving rise to each risk. This approach not only creates workflow efficiencies, it also promotes awareness of and accountability for risk at all levels of the Company. As such, primary risk ownership is assigned to the managers of functional areas. The risk identification and control activities are embedded in the job descriptions of risk owners and control operators and monitored by the VRMC.

Risk Assessment, Control and Mitigation

The Company performs a regular risk assessment process that considers the likelihood and impact of causes of risk, both before and after the existence of relevant controls. The approaches used to identify and update causes of risk include scenario building, incident and near-miss reporting and market intelligence. We have established controls to appropriately manage the likelihood and impact of risks, focused on those with the most significance and after considering the tolerance level established for each risk. We may also design new controls in response to the incident reporting process.

The Company also has in place policies, including underwriting, investment, and credit policies, to manage the assumption of risk. These policies provide for the Company's risk limits, tolerance levels and other guidelines, as well as the processes for ensuring compliance with the desired risk profile of the Company. The Company has at its disposal a variety of risk mitigation tools, including the purchase of reinsurance and retrocessional coverage, which it uses to ensure that its risk profile stays within prescribed limits and tolerance levels.

Exposure Management

In order to manage the assumption of insurance risk, the Company has established risk limits through both qualitative and quantitative considerations, including market share, history of and expertise in a class of business or jurisdiction, transparency and symmetry of available information, reliability of pricing models and availability and cost of reinsurance. These limits are reviewed at least annually and aligned to the overall risk appetite established by the Company's Board of Directors. In addition, an exposure management policy is in place to ensure appropriate and consistent risk assessment and aggregation of exposures that accumulate.

Three tools are used to measure and manage exposures:

- Absolute maximum limits - these are defined based on the underlying peril or coverage and include measures such as zonal aggregates, which convey the maximum contractual loss exposure.

- Probable maximum loss - these are defined where probabilistic event sets exist for underlying perils and are established for most natural catastrophe, aviation and upstream energy coverage, and convey an extreme but likely loss exposure.
- Realistic disaster scenarios ("RDSs") - these are either prescribed by third parties or developed internally and convey a more intuitive view of potential loss outcomes.

The Company will often use multiple tools to validate its exposure measurement and ensures that at least one of these tools is available for each class of business.

Model Validation Framework

The Company relies extensively on a wide range of models to support key decisions made across the business, and has implemented a Model Validation Framework to establish a uniform set of validation and governance standards that ensure the quality and reliability of key models across the Company.

Portfolio Optimization

The Company has developed a comprehensive and integrated Economic Capital Model (“ECM”) framework to facilitate the consistent assessment of risk, including risks classified as operational. This framework includes assessment at the individual operating company level, as well as across the Company. Using the ECM framework, the Company is able to assess the impact on risk appetite metrics of key strategic and tactical decisions as well as the risk/return trade-offs associated with these decisions, including growth strategy, new product launch, business mix and retrocession strategy, mergers and acquisitions, planning and budgeting, investment strategy and capital management.

It is the goal of the Company to make the most efficient use of its capital and to achieve an adequate return for its shareholders. To that end, the Company seeks to maximize net income given the amount of capital at risk and subject to the risk limits, tolerance levels and other constraints that are imposed by our business, regulatory, and rating agency environments. The Company has therefore put in place portfolio optimization procedures, including the integrated use of the ECM within the annual planning process, in order to help shape portfolios that optimize their respective risk return profiles.

Underwriting Risk Management

The Company's underwriters manage risk by monitoring a number of qualitative and quantitative indicators. Our in-house pricing platform, the Validus Capital Allocation and Pricing System (“VCAPS”), a proprietary computer-based system for modeling, pricing, allocating capital and analyzing catastrophe-exposed risks, provides reinsurance underwriters with a real-time view of the risk-adjusted profitability of each account. This tool allows our underwriters to examine the effects of contract terms and conditions as well as analyze the contribution of a contract to our overall risk capital and its impact on the projected incurred loss for one of our key stress scenarios. The Company believes that giving our underwriters the tools to make sound decisions is critical to our long-term success. To that end, we strive to create an environment that promotes close cooperation between our underwriting, catastrophe modeling, risk, claims, and actuarial functions.

All of the Company’s underwriters adhere to a strict set of underwriting guidelines and letters of authority that specifically address the limits of their underwriting authority and their referral criteria.

The Company’s current underwriting guidelines and letters of authority include:

- Lines of business that a particular underwriter is authorized to write;
- Exposure limits by line of business;
- Contractual exposures and limits requiring mandatory referrals; and
- Levels of analysis to be performed by lines of business.

In general, our underwriting approach is to:

- Seek high quality clients who have demonstrated superior performance over an extended period;
- Evaluate our clients' exposures and make adjustments where their exposure is not adequately reflected;
- Apply the comprehensive knowledge and experience of our entire underwriting team to make progressive and cohesive decisions about the business they underwrite; and
- Employ our well-founded and carefully maintained market contacts within the group to enhance our robust distribution capabilities.

Our underwriters have the responsibility to analyze all submissions and determine if the related potential exposures meet with both the Company's risk profile line size and aggregate limitations, in line with the business plan. In order to ensure compliance, we run appropriate management information reports and subject all lines to regular audits.

Use of Models

A pivotal factor in determining whether to found and fund the Company was the opportunity for differentiation based upon superior risk management expertise; specifically, managing catastrophe risk and optimizing our portfolio to generate attractive returns on capital while controlling our exposure to risk, and assembling a management team with the experience and expertise to do so. The Company's proprietary models are updated to reflect the latest science and data for the given peril-region of interest. This has enabled the Company to gain a competitive advantage over those reinsurers who rely exclusively on commercial models for pricing and portfolio management. The Company has made a significant investment in expertise in the risk modeling area to capitalize on this opportunity. The Company has assembled an experienced group of professional experts who operate in an environment designed to enable them to use their expertise as a competitive advantage. While the Company uses both proprietary and commercial probabilistic models, catastrophe risk is ultimately subject to absolute aggregate limitations as discussed above.

Commercial Vendor Models: The Company licenses major commercial vendor models, including RMS and AIR, to assess the adequacy of risk pricing and to monitor its overall exposure to risk in correlated geographic zones for various natural catastrophe perils. The vendor models provide information that enables the Company to aggregate exposures by correlated event loss scenarios, which are probability-weighted. This enables the generation of exceedance probability curves for the portfolio and major geographic areas. All models have their strengths and weaknesses; our internal research efforts target a greater understanding of, and if necessary, changes to frequency and severity for key peril-regions.

The Company also uses its quantitative expertise to improve the reliability of the vendor model outputs and expedite scientific review and operationalization of their findings to formulate its view of risk in the following areas:

- Ceding companies may report insufficient data and many reinsurers may not be sufficiently critical in their analysis of this data. The Company generally scrutinizes data for anomalies that may indicate insufficient data quality. These circumstances are addressed by either declining the program or, if the variances are manageable, by modifying the model inputs and outputs and pricing to reflect insufficient data quality;
- Performing independent checks on the accuracy of reported building characteristics through third-party tools and the use of licensed data sources;
- Prior to making overall adjustments for changes in variable metrics, the Company carefully examines the adjustment against the latest scientific studies and technology available to ensure its impact to the business is thoroughly evaluated before adopting it into its systems; and
- To properly quantify risk, the Company frequently adjusts vendor models in advance of their updates based on the latest scientific studies and claims data from recent events.

In addition, many risks, such as second-event covers, aggregate excess of loss, or attritional loss components, cannot be fully evaluated using the vendor models. In order to better evaluate and price these risks, the Company has developed proprietary analytical tools, such as VCAPS and other models and data sets.

Proprietary Models: In addition to making frequency and severity adjustments to the vendor model outputs, the Company utilizes VCAPS to assist in pricing submissions and monitoring risk aggregation.

VCAPS uses the output of catastrophe models to generate a 100,000-year simulation set, which is used for both pricing and risk management. This approach allows more precise measurement and pricing of risk given the underlying exposures. The two primary benefits of this approach are:

- VCAPS takes into account annual limits, event/franchise/annual aggregate deductibles, and reinstatement premiums. This functionality allows for more accurate evaluation of treaties with a broad range of features, including both common (reinstatement premium and annual limits) and complex features (second or third event coverage, aggregate excess of loss, attritional loss components, covers with varying attachment across different geographical zones or lines of businesses and covers with complicated structures); and
- VCAPS's use of 100,000-year simulations enables robust pricing of catastrophe-exposed business. This capability is possible in real-time operation because the Company has designed a computing hardware platform and software environment to accommodate the significant computing needs.

In addition to VCAPS, the Company uses other proprietary models and other data in evaluating exposures.

Geographic Diversification

The Company actively manages its aggregate exposures by geographic or risk zone to maintain a balanced and diverse portfolio of underlying risks. The coverage the Company is willing to provide for any risk located in a particular zone is limited to a predetermined level, thus limiting the net aggregate loss exposure from all contracts covering risks believed to be located in any zone. Contracts that have "worldwide" territorial limits have exposures in several geographic zones. Generally, if a proposed contract would cause the limit to be exceeded, the contract would be declined, regardless of its desirability, unless the Company buys reinsurance or retrocessional coverage, thereby reducing the net aggregate exposure to the maximum limit permitted or less.

The following table sets forth the gross premiums written allocated to the territory of coverage for the Company:

	2021		2020	
(United States Dollars in thousands)	$	%	$	%
Worldwide excluding United States [a]	78,580	2.48	67,873	2.82
Australia and New Zealand	7,390	0.23	6,295	0.26
Europe	82,833	2.61	58,734	2.44
Latin America and Caribbean	57,901	1.83	46,831	1.94
Japan	94,765	2.99	72,769	3.02
Canada	30,416	0.96	23,835	0.99
Rest of the world [b]	57,777	1.82	38,164	1.58
Sub-total, non-United States	409,662	12.92	314,501	13.05
United States	849,834	26.80	810,554	33.64
Worldwide including United States	560,673	17.68	519,624	21.57
Other locations non-specific [c]	1,351,205	42.60	764,788	31.74
Total	**3,171,374**	**100.00**	**2,409,467**	**100.00**

[a] Represents risks in two or more geographic zones.
[b] Represents risks in one geographic zone.

(c) The other locations non-specific category refers to business for which an analysis of exposure by geographic zone is not applicable since these exposures can span multiple geographic areas and, in some instances, are not fixed locations.

Note: Figures provided in the table above are based on the Validus Re Ltd. Consolidated Financial Statements.

The following table sets forth the gross premiums written by line of business and allocated to the territory of coverage for the Singapore Branch based on information provided in the MAS Insurance Company Returns:

(Singapore Dollars in thousands)	2021		2020	
	S$	%	S$	%
China	40,236	63.78	34,086	61.79
Japan	9,575	15.18	8,691	15.75
Korea	8,494	13.46	11,184	20.27
Thailand	1,029	1.63	630	1.14
Philippine	535	0.85	768	1.39
Taiwan	2,775	4.40	855	1.55
Others	440	0.70	(1,048)	-1.89
Total	**63,084**	**100.00**	**55,166**	**100.00**

The effectiveness of geographic zone limits in managing risk exposure depends on the degree to which an actual event is confined to the zone in question and on the Company's ability to determine the actual location of the risks believed to be covered under a particular insurance or reinsurance contract. Accordingly, there can be no assurance that risk exposure in any particular zone will not exceed that zone's limits. Further control over diversification is achieved through guidelines covering the types and amount of business written in product classes and lines within a class.

Reinsurance Management

The Company enters into reinsurance and retrocession agreements in order to mitigate its accumulation of loss, reduce its liability on individual risks and enable it to underwrite policies with higher limits. The ceding of the risk does not legally discharge the Company from its primary liability for the full amount of the policies, and the Company is therefore required to pay the loss and bear collection risk relating to the possibility that the reinsurer or retrocessionaire fails to meet its obligations under the reinsurance or retrocession agreement.

Retrocession*:* The Company monitors the opportunity to purchase retrocessional coverage for its reinsurance business on a continual basis and employs the VCAPS modeling system to evaluate the effectiveness of risk mitigation and exposure management relative to the cost. This coverage may be purchased on an indemnity basis as well as on an index basis (e.g., industry loss warranties ("ILWs")). The Company also considers and at times uses alternative retrocessional structures, including collateralized quota share facilities and other capital markets products (e.g. catastrophe bonds), where the pricing and terms are attractive.

When the Company buys retrocessional coverage on an indemnity basis, payment is for an agreed upon portion of the losses actually suffered. In contrast, when the Company buys an ILW cover, which is a reinsurance contract in which the payout is dependent on both the insured loss of the policy purchaser and a measure of the industry-wide loss, payment is made only if both the Company and the industry suffer a loss, as reported by one of a number of independent agencies, in excess of specified threshold amounts. With an ILW, the Company bears the risk of suffering a loss while receiving no payment under the ILW if the industry loss was less than the specified threshold amount.

Reserve for Losses and Loss Expenses

For reinsurance companies, a significant judgment made by management is the estimation of the reserve for losses and loss expenses. The Company establishes its reserve for losses and loss expenses to cover the estimated incurred liability for both reported and unreported claims.

Loss reserves are established due to the significant periods of time that may lapse between the occurrence, reporting, and payment of a loss. To recognize liabilities for unpaid losses and loss expenses, the Company estimates future amounts needed to pay claims and related expenses with respect to insured events. The Company's reserving practices and the establishment of any particular reserve reflects management's judgment concerning sound financial practice and does not represent any admission of liability with respect to any claim. Unpaid losses and loss expense reserves are established for reported claims ("case reserves") and incurred but not reported ("IBNR") claims.

The nature of the Company's high excess of loss liability and catastrophe business can result in loss expenses and payments that are both irregular and significant. Such losses are part of the normal course of business for the Company. Adjustments to reserves for individual years can also be irregular and significant. Conditions and trends that have affected development of liabilities in the past may not necessarily occur in the future. Accordingly, it is inappropriate to extrapolate future redundancies or deficiencies based upon historical experience.

Validus Re Ltd.'s reinsurance loss reserves are established based upon an estimate of the total cost of claims that have been incurred, including estimates of unpaid liability on known individual claims, the costs of additional case reserves on claims reported but not considered to be adequately reserved in such reporting ("ACRs") and amounts that have been incurred but not yet reported. ACRs are used in certain cases and are calculated based on management's estimate of the required case reserve on an individual claim less the case reserves reported by the client. The Loss Reserve Committee follows catastrophe event ultimate loss reserve estimation procedures for the investigation, analysis, estimation and approval of ultimate loss reserving.

For reported losses, case reserves are established within the parameters of the coverage provided in the impacted reinsurance contracts. Where there is a reported claim for which the reported case reserve is determined to be insufficient, an ACR or individual claim IBNR estimate will be booked that is adjusted as claims notifications are received. Information is obtained from various sources including brokers, proprietary and third party vendor models and internal data regarding reinsured exposures related to the geographic location of the event, as well as other sources. Generally accepted actuarial techniques are used in the IBNR estimation process. Historical insurance industry loss emergence patterns, as well as estimates of future trends in claims severity, frequency and other factors, are used in establishing loss reserves.

Loss reserves represent estimates, including actuarial and statistical projections at a given point in time, of the expectations of the ultimate settlement and administration costs of claims incurred. Such estimates are not precise in that, among other things, they are based on predictions of future developments and estimates of future trends in loss severity and frequency and other variable factors such as inflation, litigation and tort reform. This uncertainty is heightened by the low frequency high severity nature of the reinsurance business written, thereby providing limited claims loss emergence patterns that directly pertain to the reinsurance operations. This continues to necessitate the partial use of industry loss emergence patterns in deriving IBNR, which contribute to the inherent uncertainty within the loss reserve estimation process and therefore will differ from actual experience. Further, expected losses and loss ratios are typically developed in part by using outputs from vendor and proprietary computer models and these expected losses and loss ratios are a significant component in the calculation of IBNR. Finally, the uncertainty surrounding estimated costs is greater in cases where large, unique events have been reported and the associated claims are in early stages of resolution. As a result of these uncertainties, it is likely that the ultimate liability will differ from such estimates, perhaps materially.

The following table represents an analysis of paid and unpaid losses and loss expenses incurred and a reconciliation of the beginning and ending unpaid loss expenses for Validus Re Ltd. as at December 31, 2021 and 2020:

(United States Dollars in thousands)	**2021** $	**2020** $
Reserve for losses and loss expenses, beginning of year	3,211,396	2,724,823
Loss reserves recoverable, beginning of year	(1,074,617)	(1,119,707)
Net reserves for losses and loss expenses, beginning of year	2,136,779	1,605,116
Increase (decrease) in net reserves for losses and loss expenses in respect of losses occurring in:		
Current year	1,563,703	1,316,354
Prior years	(32,866)	(44,642)
Total incurred losses and loss expenses	1,530,837	1,271,712
Foreign exchange (gains) losses	(50,941)	34,128
Net impact of commodity derivatives recognized in losses and loss expense	(9,694)	-
Less net losses and loss expenses paid in respect of losses occurring in:		
Current year	(413,001)	(374,837)
Prior years	(600,965)	(399,340)
Total net paid losses	(1,013,966)	(774,177)
Net reserve for losses and loss expenses, end of year	2,593,015	2,136,779
Loss reserves recoverable, end of year	2,140,746	1,074,617
Reserve for losses and loss expenses, end of year	**4,733,761**	**3,211,396**

Total incurred losses and loss expenses for the years ended December 31, 2021 and 2020 is comprised of:

	2021	2020
	$	$
Gross losses and loss expenses	2,782,914	1,477,480
Reinsurance recoveries	(1,252,077)	(205,768)
Net incurred losses and loss expenses	**1,530,837**	**1,271,712**

Note: Figures provided in the table above are based on the Validus Re Ltd. Consolidated Financial Statements.

Insurance liabilities of the Singapore Branch are set in accordance with the MAS Insurance (Valuation and Capital) Regulations 2004. For year ended December 31, 2021, premium and claim liabilities, as provided in the MAS Insurance Company Returns, were S$21.8 million and S$57.7 million respectively.

The following table provides a summary of the Singapore Branch's insurance liabilities by claim and premium categories and by line of business as at December 31, 2021 and 2020:

(United States Dollars in thousands)	2021	2020
	$	$
Net reserves by claim and premium categories:		
Net reserves for claims reported and loss expenses	25,873	20,380
Net reserves for claims incurred but not reported	31,779	32,474
Net unearned premium reserve	21,784	20,414
Total net policy liabilities	79,436	73,268
Net reserves by line of business:		
Property	61,913	55,918
Marine and Aviation	17,178	17,066
Casualty & Others	345	284
Total net policy liabilities	79,436	73,268

Capital Adequacy

Validus Re Ltd. has operations which are subject to laws and regulations in the jurisdictions in which they operate, the most significant of which are Bermuda and Switzerland.

Validus Re Ltd. and its subsidiaries are required to maintain certain measures of solvency and liquidity which provide restrictions on declaring dividends and distributions. Statutory capital and surplus as at December 31, 2021 and 2020 and statutory net income for the years ended December 31, 2021 and 2020 for our reinsurance subsidiaries based in our most significant regulatory jurisdictions were as follows:

	Statutory capital and surplus				Statutory net income (loss)	
	Required		Actual			
	2021	2020	2021	2020	2021	2020
	$	$	$	$	$	$
Bermuda	1,211,090	1,036,557	3,893,878	3,784,457	108,408	91,797
Switzerland	557,000	454,000	1,236,051	1,269,694	91,491	(43,543)

Bermuda-based insurers are required to maintain minimum statutory capital and surplus equal to the greater of a minimum solvency margin (“MSM”) and the Enhanced Capital Requirement (“ECR”) where applicable. The ECR is equal to the higher of the MSM or the Bermuda Solvency Capital Requirement (“BSCR”) model or approved internal capital model. The BSCR for the relevant insurers for the year ended December 31, 2021 will not be filed with the Bermuda Monetary Authority (“BMA”) until end of April 2022. As a result, the required statutory capital and surplus as at December 31, 2021 of $1,211,090, which exceeds the December 31, 2021 MSM of $591,332, is primarily based on the latest draft BSCR. The required statutory capital and surplus as at December 31, 2020 of $1,036,557 is based primarily on the actual December 31, 2020 ECR, which exceeded the December 31, 2020 MSM of $449,612.

At December 31, 2021 and 2020, the actual statutory capital and surplus of the Company and the Bermuda-based insurance subsidiaries exceeded the relevant regulatory requirements.

Validus Re Ltd. maintains a branch office in Singapore. As the branch office is not considered a separate entity for regulatory purposes, the required and actual statutory capital and surplus amount includes amounts, as set out above, related to the applicable branch office. The branch office is subject to additional minimum capital or asset requirements in their country of domicile. At December 31, 2021 and 2020, the actual capital and assets for the branch exceeded the relevant local regulatory requirements.

Additional information relating to Validus Re Ltd.’s statutory and regulatory requirements is provided in the Validus Re Ltd. Consolidated Financial Statements.

Investment Management

The overriding goal of our investment management is capital preservation, such that the assets of the Company are invested to provide for the timely payment of all contractual obligations of policyholders and creditors, ensuring our ability to underwrite future business and to satisfy all regulatory and rating agency requirements. We aim to achieve these objectives through a clearly defined process that is driven by the enterprise-wide risk and capital position of the Company to ensure assets are invested in accordance with our defined financial objectives and risk tolerances. Our approach considers the joint impact of underwriting and investment risks to the Company, in the context of clear prioritization of underwriting needs and opportunities. As such, we structure our investment portfolio to support policyholder reserves and contingent risk exposures with a liquid portfolio of high quality fixed-income investments with a comparable duration profile.

A significant portion of reinsurance contracts written by the Insurer provide short-tail reinsurance coverage for losses resulting mainly from natural and man-made catastrophes, which could result in payment of a substantial amount of losses at short notice. Accordingly, the Insurer's investment portfolio is primarily structured to provide liquidity, which means the investment portfolio contains a significant amount of relatively short-term fixed maturity investments. As such, the Insurer structures its managed cash and investment portfolio to support policyholder reserves and contingent risk exposures with a liquid portfolio of high quality fixed-income investments with a comparable duration profile.

The Company also monitors Asset Liability Matching ("ALM") when setting investment management mandated to ensure that the tenure of liabilities and assets are sufficiently match to manage liquidity requirements of policyholders. The Insurer's Investment Guidelines ("IG") requires investments to have an average duration in the range of 0.75 years to 3.25 years. At December 31, 2021, the average duration of the Insurer's investment portfolio was 2.69 years (2020: 1.79 years). This duration is reviewed regularly based on changes in the duration of the Insurer's liabilities and general market conditions.

The Company's Investment Guidelines also requires certain minimum credit quality standards for its managed fixed maturity portfolio. Further limits on asset classes and security types are also mandated. In addition, the Company stress-tests the downside risks within its asset portfolio using internal and external inputs and stochastic modeling processes to help define and limit asset risks to acceptable levels that are consistent with our overall ERM framework.

The value of the Company's managed fixed maturity portfolio will fluctuate with, among other factors, changes in the interest rate environment and in overall economic conditions. Additionally, the structure of the Company's overall managed investment portfolio exposes the Company to other risks, including insolvency or reduced credit quality of corporate debt securities, prepayment, default and structural risks on asset-backed securities, mortgage-backed securities and bank loans and liquidity risks on certain other investments, including hedge funds, fixed income investment funds and private equity investments.

Consistent with U.S. GAAP, the Company recognizes investments at their fair value in the Consolidated Balance Sheets. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

More information regarding investments and related valuation, risks and accounting policies can be found in the Validus Re, Ltd. Consolidated Financial Statements.

The Singapore Branch maintains a liquid portfolio of high quality fixed-income investments with a duration profile commensurate with its insurance liabilities.

Financial Performance

The following table provides consolidated statements of operations and comprehensive income for Validus Re Ltd. for the years ended December 31, 2021 and 2020 (expressed in thousands of U.S. dollars):

(United States Dollars in thousands)	2021 $	2020 $
Revenues		
Gross premiums written	3,171,374	2,409,467
Reinsurance premiums ceded	(719,266)	(586,263)
Net premiums written	2,452,108	1,823,204
Change in unearned premiums	(338,403)	(180,355)
Net premiums earned	2,113,705	1,642,849
Net investment income	110,714	110,589
Net realized gains on investments	146,603	699
Net change in unrealized (losses) gains on investments	(154,677)	58,874
Other insurance-related income and other income	10,377	12,750
Foreign exchange gains (losses)	34,264	(18,517)
Total revenues	**2,260,986**	**1,807,244**
Expenses		
Losses and loss expenses	1,530,837	1,271,712
Policy acquisition costs	487,570	354,757
General and administrative expenses	115,632	100,760
Share compensation expenses	1,310	1,686
Finance expenses	5,800	3,290
Transaction expenses	92	504
Total expenses	**2,141,241**	**1,732,709**
Income before taxes and (loss) income from operating affiliates and structured notes	**119,745**	**74,535**
Tax benefit	3,702	8,437
(Loss) income from operating affiliates	(14,866)	8,245
(Loss) income from structured notes receivable from AlphaCat ILS fund	(173)	580
Net income and comprehensive income	**108,408**	**91,797**

Note: Figures provided in the table above are based on the Validus Re Ltd. Consolidated Financial Statements.

The following table provides information from Form 2 – Fund Profit and Loss Account, as provided in the MAS Insurance Company Returns, for the years ended December 31, 2021 and 2020 (expressed in thousands of Singapore dollars):

(Singapore Dollars in thousands)	2021 S$	2020 S$
Revenues		
Earned gross premiums written	63,084	55,166
Earned reinsurance premiums ceded	(4,694)	(1,407)
Net earned Premium	58,390	53,759
Investment income	916	1,964
Investment expenses	-	6
Net investment income	916	1,970
Other Investment Income	163	2,341
Total revenues	**59,469**	**58,070**
Expenses		
Gross claims settled	25,518	43,763
Reinsurance recoveries	(3,521)	(3,060)
Management expenses	6,061	5,292
Distribution expenses	17,644	15,313
Increase (decrease) in net policy liabilities	4,501	(12,369)
Provision for doubtful debts	-	-
Taxation expenses	-	-
Other expenses	1,295	391
Total expenses	**51,498**	**49,330**
Net income	**7,971**	**8,740**