UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF

THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2023

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF

THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File Number: 001-14428

RENAISSANCERE HOLDINGS LTD.

(Exact Name Of Registrant As Specified In Its Charter)

Bermuda	**98-0141974**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)

Renaissance House, 12 Crow Lane, Pembroke, Bermuda **HM 19**

(Address of Principal Executive Offices) (Zip Code)

(441) 295-4513

(Registrant’s telephone number, including area code)

Not Applicable

(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	**Trading symbol**	**Name of each exchange on which registered**
Common Shares, Par Value $1.00 per share	RNR	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a Series F 5.750% Preference Share, Par Value $1.00 per share	RNR PRF	New York Stock Exchange
Depositary Shares, each representing a 1/1,000th interest in a Series G 4.20% Preference Share, Par Value $1.00 per share	RNR PRG	New York Stock Exchange

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. 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, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

The number of Common Shares, par value U.S. $1.00 per share, outstanding at May 1, 2023 was 43,931,577.

RENAISSANCERE HOLDINGS LTD.
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GLOSSARY OF DEFINED TERMS

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

"ASC"	Accounting Standards Codification
"A.M. Best"	A.M. Best Company, Inc.
"DaVinci Reinsurance"	DaVinci Reinsurance Ltd.
"DaVinci"	DaVinciRe Holdings Ltd. and its subsidiaries
"ERM"	enterprise risk management
"Exchange Act"	the Securities Exchange Act of 1934, as amended
"FAL"	a deposit that must be submitted to support the underwriting capacity of a member of Lloyd's
"FASB"	Financial Accounting Standards Board
"FCR"	financial condition report
"Fitch"	Fitch Ratings Ltd.
"Fontana"	Fontana Holdings L.P. and its subsidiaries
"Form 10-K"	Annual Report on Form 10-K
"Form 10-Q"	this Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2023
"IRS"	United States Internal Revenue Service
"Medici"	RenaissanceRe Medici Fund Ltd.
"Moody's"	Moody's Investors Service
"Renaissance Reinsurance"	Renaissance Reinsurance Ltd.
"Renaissance Reinsurance of Europe"	Renaissance Reinsurance of Europe Unlimited Company
"Renaissance Reinsurance U.S."	Renaissance Reinsurance U.S. Inc.
"RenaissanceRe"	RenaissanceRe Holdings Ltd.
"RenaissanceRe Finance"	RenaissanceRe Finance Inc.
"RenaissanceRe Specialty U.S."	RenaissanceRe Specialty U.S. Ltd.
"RREAG"	RenaissanceRe Europe AG
"S&P"	Standard and Poor's Rating Services
"SEC"	U.S. Securities and Exchange Commission
"Securities Act"	Securities Act of 1933, as amended
"Syndicate 1458"	RenaissanceRe Syndicate 1458
"Top Layer"	Top Layer Reinsurance Ltd.
"Tower Hill Companies"	collectively, our investments in a group of Tower Hill affiliated companies including Bluegrass Insurance Management, LLC, Tower Hill Claims Service, LLC, Tower Hill Holdings, Inc., Tower Hill Insurance Group, LLC, Tower Hill Insurance Managers, LLC, Tower Hill Re Holdings, Inc., Tower Hill Signature Insurance Holdings, Inc., Tower Hill Risk Management LLC and Tomoka Re Holdings, Inc.
"U.K."	United Kingdom
"U.S."	United States of America
"Upsilon Fund"	RenaissanceRe Upsilon Fund Ltd.
"Upsilon RFO"	Upsilon RFO Re Ltd.
"Vermeer"	Vermeer Reinsurance Ltd.

NOTE ON FORWARD-LOOKING STATEMENTS

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

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

- our exposure to natural and non-natural catastrophic events and circumstances and the variance they may cause in our financial results;
- the effect of climate change on our business, including the trend towards increasingly frequent and severe climate events;
- the effectiveness of our claims and claim expense reserving process;
- the effect of emerging claims and coverage issues;
- the performance of our investment portfolio and financial market volatility;
- the effects of inflation;
- the ability of our ceding companies and delegated authority counterparties to accurately assess the risks they underwrite;
- our ability to maintain our financial strength ratings;
- the highly competitive nature of our industry;
- our reliance on a small number of brokers;
- collection on claimed retrocessional coverage, and new retrocessional reinsurance being available on acceptable terms or at all;
- the historically cyclical nature of the (re)insurance industries;
- our ability to attract and retain key executives and employees;
- our ability to successfully implement our business, strategies and initiatives;
- our exposure to credit loss from counterparties;
- our need to make many estimates and judgments in the preparation of our financial statements;
- our ability to effectively manage capital on behalf of investors in joint ventures or other entities we manage;
- changes to the accounting rules and regulatory systems applicable to our business, including changes in Bermuda and U.S. laws or regulations;
- other political, regulatory or industry initiatives adversely impacting us;
- our ability to comply with covenants in our debt agreements;
- the effect of adverse economic factors, including changes in the prevailing interest rates and recession or the perception that recession may occur;
- the effect of cybersecurity risks, including technology breaches or failure;
- a contention by the IRS that any of our Bermuda subsidiaries are subject to taxation in the U.S.;
- the effects of possible future tax reform legislation and regulations in the jurisdictions in which we operate;
- our ability to determine any impairments taken on our investments;

- our ability to raise capital on acceptable terms, including through debt instruments, the capital markets, and third party investments in our joint ventures and managed fund partners;
- our ability to comply with applicable sanctions and foreign corrupt practices laws; and
- our dependence on the ability of our operating subsidiaries to declare and pay dividends.

As a consequence, our future financial condition and results may differ from those expressed in any forward-looking statements made by or on behalf of us. The factors listed above, which are discussed in more detail in our filings with the SEC, including our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on February 8, 2023, and Item 1A of this Quarterly Report on Form 10-Q, should not be construed as exhaustive. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to revise or update forward-looking statements to reflect new information, events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

PART I FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Balance Sheets
(in thousands of United States Dollars, except share and per share amounts)

	March 31, 2023	December 31, 2022
Assets	(Unaudited)	(Audited)
Fixed maturity investments trading, at fair value – amortized cost $15,067,873 at March 31, 2023 (December 31, 2022 – $15,038,551)	$ 14,695,585	$ 14,351,402
Short term investments, at fair value - amortized cost $5,177,881 at March 31, 2023 (December 31, 2022 - $4,671,581)	5,177,095	4,669,272
Equity investments, at fair value	551,394	625,058
Other investments, at fair value	2,700,655	2,494,954
Investments in other ventures, under equity method	84,731	79,750
Total investments	23,209,460	22,220,436
Cash and cash equivalents	1,063,707	1,194,339
Premiums receivable	5,933,701	5,139,471
Prepaid reinsurance premiums	1,130,831	1,021,412
Reinsurance recoverable	4,706,671	4,710,925
Accrued investment income	121,681	121,501
Deferred acquisition costs	1,242,395	1,171,738
Receivable for investments sold	267,161	350,526
Other assets	358,203	384,702
Goodwill and other intangible assets	236,517	237,828
Total assets	$ 38,270,327	$ 36,552,878
Liabilities, Noncontrolling Interests and Shareholders' Equity		
Liabilities		
Reserve for claims and claim expenses	$ 15,996,826	$ 15,892,573
Unearned premiums	5,250,642	4,559,107
Debt	1,140,960	1,170,442
Reinsurance balances payable	3,989,660	3,928,281
Payable for investments purchased	389,440	493,776
Other liabilities	279,878	648,036
Total liabilities	27,047,406	26,692,215
Commitments and contingencies		
Redeemable noncontrolling interests	5,357,386	4,535,389
Shareholders' Equity		
Preference shares: $1.00 par value – 30,000 shares issued and outstanding at March 31, 2023 (December 31, 2022 – 30,000)	750,000	750,000
Common shares: $1.00 par value – 43,931,597 shares issued and outstanding at March 31, 2023 (December 31, 2022 – 43,717,836)	43,932	43,718
Additional paid-in capital	467,623	475,647
Accumulated other comprehensive income (loss)	(14,838)	(15,462)
Retained earnings	4,618,818	4,071,371
Total shareholders' equity attributable to RenaissanceRe	5,865,535	5,325,274
Total liabilities, noncontrolling interests and shareholders' equity	$ 38,270,327	$ 36,552,878

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Operations
For the three months ended March 31, 2023 and 2022
(in thousands of United States Dollars, except per share amounts) (Unaudited)

	Three months ended	
	March 31, 2023	**March 31, 2022**
Revenues		
Gross premiums written	$ 2,790,261	$ 2,942,964
Net premiums written	$ 2,263,703	$ 2,165,217
Decrease (increase) in unearned premiums	(583,153)	(678,792)
Net premiums earned	1,680,550	1,486,425
Net investment income	254,378	83,691
Net foreign exchange gains (losses)	(14,503)	(15,486)
Equity in earnings (losses) of other ventures	9,530	(6,390)
Other income (loss)	(4,306)	1,193
Net realized and unrealized gains (losses) on investments	279,451	(673,017)
Total revenues	2,205,100	876,416
Expenses		
Net claims and claim expenses incurred	801,200	841,733
Acquisition expenses	432,257	376,507
Operational expenses	77,474	67,907
Corporate expenses	12,843	12,502
Interest expense	12,134	11,955
Total expenses	1,335,908	1,310,604
Income (loss) before taxes	869,192	(434,188)
Income tax benefit (expense)	(28,902)	36,707
Net income (loss)	840,290	(397,481)
Net (income) loss attributable to redeemable noncontrolling interests	(267,384)	11,912
Net income (loss) attributable to RenaissanceRe	572,906	(385,569)
Dividends on preference shares	(8,844)	(8,844)
Net income (loss) available (attributable) to RenaissanceRe common shareholders	$ 564,062	$ (394,413)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – basic	$ 12.95	$ (9.10)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	$ 12.91	$ (9.10)
Dividends per common share	$ 0.38	$ 0.37

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)
For the three months ended March 31, 2023 and 2022
(in thousands of United States Dollars) (Unaudited)

	Three months ended	
	March 31, 2023	March 31, 2022
Comprehensive income (loss)		
Net income (loss)	$ 840,290	$ (397,481)
Change in net unrealized gains (losses) on investments, net of tax	918	834
Foreign currency translation adjustments, net of tax	(294)	(2,759)
Comprehensive income (loss)	840,914	(399,406)
Net (income) loss attributable to redeemable noncontrolling interests	(267,384)	11,912
Comprehensive income (loss) attributable to redeemable noncontrolling interests	(267,384)	11,912
Comprehensive income (loss) attributable to RenaissanceRe	$ 573,530	$ (387,494)

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Changes in Shareholders' Equity
For the three months ended March 31, 2023 and 2022
(in thousands of United States Dollars) (Unaudited)

	Three months ended	
	March 31, 2023	March 31, 2022
Preference shares		
Beginning balance	$ 750,000	$ 750,000
Issuance of shares	—	—
Repurchase of shares	—	—
Ending balance	750,000	750,000
Common shares		
Beginning balance	43,718	44,445
Repurchase of shares	—	(577)
Issuance of restricted stock awards	214	325
Ending balance	43,932	44,193
Additional paid-in capital		
Beginning balance	475,647	608,121
Repurchase of shares	—	(92,857)
Offering expenses	—	—
Change in redeemable noncontrolling interests	(1,106)	(863)
Issuance of restricted stock awards	(6,918)	(770)
Ending balance	467,623	513,631
Accumulated other comprehensive income (loss)		
Beginning balance	(15,462)	(10,909)
Change in net unrealized gains (loss) on investments, net of tax	918	834
Foreign currency translation adjustments, net of tax	(294)	(2,759)
Ending balance	(14,838)	(12,834)
Retained earnings		
Beginning balance	4,071,371	5,232,624
Net income (loss)	840,290	(397,481)
Net (income) loss attributable to redeemable noncontrolling interests	(267,384)	11,912
Dividends on common shares	(16,615)	(16,241)
Dividends on preference shares	(8,844)	(8,844)
Ending balance	4,618,818	4,821,970
Total shareholders' equity	$ 5,865,535	$ 6,116,960

See accompanying notes to the consolidated financial statements

RenaissanceRe Holdings Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
For the three months ended March 31, 2023 and 2022
(in thousands of United States Dollars) (Unaudited)

	Three months ended	
	March 31, 2023	March 31, 2022
Cash flows provided by (used in) operating activities		
Net income (loss)	$ 840,290	$ (397,481)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities		
Amortization, accretion and depreciation	(32,948)	(9,337)
Equity in undistributed (earnings) losses of other ventures	5,568	16,069
Net realized and unrealized (gains) losses on investments	(267,289)	632,729
Change in:		
Premiums receivable	(794,230)	(1,069,971)
Prepaid reinsurance premiums	(109,419)	(331,260)
Reinsurance recoverable	4,254	(50,821)
Deferred acquisition costs	(70,657)	(150,552)
Reserve for claims and claim expenses	104,253	215,674
Unearned premiums	691,535	1,015,092
Reinsurance balances payable	61,379	458,694
Other	2,972	(160,607)
Net cash provided by (used in) operating activities	435,708	168,229
Cash flows provided by (used in) investing activities		
Proceeds from sales and maturities of fixed maturity investments trading	5,019,879	3,958,948
Purchases of fixed maturity investments trading	(5,159,348)	(4,405,789)
Net sales (purchases) of equity investments	104,077	(374,292)
Net sales (purchases) of short term investments	(480,425)	626,639
Net sales (purchases) of other investments	(159,523)	(210,840)
Net sales (purchases) of investments in other ventures	(11,250)	(779)
Return of investment from investment in other ventures	1,893	2,213
Net cash provided by (used in) investing activities	(684,697)	(403,900)
Cash flows provided by (used in) financing activities		
Dividends paid – RenaissanceRe common shares	(16,615)	(16,241)
Dividends paid – preference shares	(8,950)	(8,940)
RenaissanceRe common share repurchases	—	(97,259)
Repayment of debt	(30,000)	—
Net third-party redeemable noncontrolling interest share transactions	190,585	66,729
Taxes paid on withholding shares	(18,729)	(10,782)
Net cash provided by (used in) financing activities	116,291	(66,493)
Effect of exchange rate changes on foreign currency cash	2,066	6,201
Net increase (decrease) in cash and cash equivalents	(130,632)	(295,963)
Cash and cash equivalents, beginning of period	1,194,339	1,859,019
Cash and cash equivalents, end of period	$ 1,063,707	$ 1,563,056

See accompanying notes to the consolidated financial statements

NOTE 1. ORGANIZATION

This report on Form 10-Q should be read in conjunction with RenaissanceRe's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 ("Form 10-K"). RenaissanceRe was formed under the laws of Bermuda on June 7, 1993. Together with its wholly owned and majority-owned subsidiaries, joint ventures and managed funds, the Company provides property, casualty and specialty reinsurance and certain insurance solutions to its customers.

- Renaissance Reinsurance Ltd. ("Renaissance Reinsurance"), a Bermuda-domiciled reinsurance company, is the Company's principal reinsurance subsidiary and provides property, casualty and specialty reinsurance coverages to insurers and reinsurers on a worldwide basis.
- Renaissance Reinsurance U.S. Inc. ("Renaissance Reinsurance U.S.") is a reinsurance company domiciled in the state of Maryland that provides property, casualty and specialty reinsurance coverages to insurers and reinsurers, primarily in the Americas.
- RenaissanceRe Syndicate 1458 ("Syndicate 1458") is the Company's Lloyd's syndicate. RenaissanceRe Corporate Capital (UK) Limited ("RenaissanceRe CCL"), a wholly owned subsidiary of RenaissanceRe, is Syndicate 1458's sole corporate member. RenaissanceRe Syndicate Management Ltd. ("RSML"), a wholly owned subsidiary of RenaissanceRe, is the managing agent for Syndicate 1458.
- RenaissanceRe Europe AG ("RREAG"), a Swiss-domiciled reinsurance company, which has branches in Australia, Bermuda, the U.K. and the U.S., provides property, casualty and specialty reinsurance coverages to insurers and reinsurers on a worldwide basis.
- RenaissanceRe Specialty U.S. Ltd. ("RenaissanceRe Specialty U.S."), a Bermuda-domiciled insurer, which operates subject to U.S. federal income tax.
- DaVinci Reinsurance Ltd. ("DaVinci Reinsurance"), a wholly-owned subsidiary of DaVinciRe Holdings Ltd. ("DaVinci"), is a managed joint venture formed by the Company to principally write property catastrophe reinsurance and certain casualty and specialty reinsurance lines of business on a global basis.
- Vermeer Reinsurance Ltd. ("Vermeer") is a managed joint venture formed by the Company to provide capacity focused on risk remote layers in the U.S. property catastrophe market. The Company maintains a majority voting control of Vermeer, while Stichting Pensioenfonds Zorg en Welzijn ("PFZW"), a pension fund represented by PGGM Vermogensbeheer B.V., a Dutch pension fund manager, retains economic benefits.
- Fontana Holdings L.P. and its subsidiaries (collectively, "Fontana") are a managed joint venture formed by the Company to assume casualty and specialty risks in line with the Company's book of business. Fontana launched effective April 1, 2022.
- Top Layer Reinsurance Ltd. ("Top Layer") is a managed joint venture formed by the Company to write high excess non-U.S. property catastrophe reinsurance.
- RenaissanceRe Underwriting Managers U.S. LLC, is licensed as a reinsurance intermediary broker in the State of Connecticut and underwrites specialty treaty reinsurance solutions on both a quota share and excess of loss basis on behalf of affiliates.
- Renaissance Underwriting Managers, Ltd. ("RUM"), a wholly-owned subsidiary of RenaissanceRe, is the exclusive underwriting manager for certain of our joint ventures or managed funds in return for a management fee, performance fee, or both.
- RenaissanceRe Fund Management Ltd. ("RFM") is a wholly-owned Bermuda exempted company and is the exclusive investment fund manager for several of the Company's joint ventures or managed

funds, in return for a management fee, a performance based incentive fee, or both. RFM is an Exempt Reporting Adviser with the Securities and Exchange Commission and serves as the investment adviser to third-party investors in the various private investment partnerships and insurance-related investment products offered by the Company.

- RenaissanceRe Medici Fund Ltd. (“Medici”) is an exempted company, incorporated in Bermuda and registered as an institutional fund. Medici invests, primarily on behalf of third-party investors, in various instruments that have returns primarily tied to property catastrophe risk.
- Upsilon RFO Re Ltd. (“Upsilon RFO”), an exempted company incorporated in Bermuda and registered as a segregated accounts company and as a collateralized insurer, is a managed fund formed by the Company principally to provide additional capacity to the worldwide aggregate and per-occurrence primary and retrocessional property catastrophe excess of loss market.
- RenaissanceRe Upsilon Fund Ltd., an exempted company incorporated in Bermuda and registered as a segregated accounts company and a Class A Professional Fund, provides a fund structure through which third-party investors can invest in reinsurance risk managed by the Company.
- Mona Lisa Re Ltd. (“Mona Lisa Re”), a Bermuda domiciled special purpose insurer (“SPI”), provides reinsurance capacity to subsidiaries of RenaissanceRe through reinsurance agreements which are collateralized and funded by Mona Lisa Re through the issuance of one or more series of principal-at-risk variable rate notes.
- Fibonacci Reinsurance Ltd. (“Fibonacci Re”), an exempted company incorporated in Bermuda and registered as an SPI, was formed to provide collateralized capacity to Renaissance Reinsurance and its affiliates. Fibonacci Re raises capital from third-party investors and the Company, via private placements of participating notes which are listed on the Bermuda Stock Exchange.
- The Company and Reinsurance Group of America, Incorporated formed an initiative (“Langhorne”) to source third-party capital to support reinsurers targeting large in-force life and annuity blocks. Langhorne Holdings LLC (“Langhorne Holdings”) was incorporated to own and manage certain reinsurance entities, and Langhorne Partners LLC (“Langhorne Partners”) is the general partner for Langhorne. Langhorne’s capital commitment period expired at the end of December 2022 and the Langhorne entities are in the process of winding down.
- Following the acquisition of Tokio Millennium Re AG and certain associated entities and subsidiaries (collectively, “TMR”) on March 22, 2019, the Company managed Shima Reinsurance Ltd. (“Shima Re”), Norwood Re Ltd. (“Norwood Re”) and Blizzard Re Ltd. (“Blizzard,” together with Shima Re and Norwood Re, the “TMR managed third-party capital vehicles”), which provided third-party investors with access to reinsurance risk. The TMR managed third-party capital vehicles no longer write new business. The Company ceased providing management services to Blizzard effective November 1, 2020, and to Shima Re and Norwood Re effective December 1, 2020.

NOTE 2. SIGNIFICANT ACCOUNTING POLICIES

There have been no material changes to the Company’s significant accounting policies as described in its Form 10-K for the year ended December 31, 2022, except as described below.

BASIS OF PRESENTATION

These consolidated financial statements have been prepared on the basis of accounting principles generally accepted in the U.S. (“GAAP”) for interim financial information and in conformity with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete consolidated financial statements. In the opinion of management, these unaudited consolidated financial statements reflect all adjustments (consisting of normal recurring accruals) considered necessary for a fair statement of the Company’s financial position and results of operations as at the end of and for the periods presented. All significant intercompany accounts and transactions have been eliminated from these statements.

Certain comparative information has been reclassified to conform to the current presentation. Because of the seasonality of the Company’s business, the results of operations and cash flows for any interim period will not necessarily be indicative of the results of operations and cash flows for the full fiscal year or subsequent quarters.

USE OF ESTIMATES IN FINANCIAL STATEMENTS

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported and disclosed amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from those estimates. The major estimates reflected in the Company’s consolidated financial statements include, but are not limited to, the reserve for claims and claim expenses; reinsurance recoverable and premiums receivable, including provisions for reinsurance recoverable and premiums receivable to reflect expected credit losses; estimates of written and earned premiums; fair value, including the fair value of investments, financial instruments and derivatives; impairment charges; and the Company’s deferred tax valuation allowance.

NOTE 3. INVESTMENTS

Fixed Maturity Investments Trading

The following table summarizes the fair value of fixed maturity investments trading:

	March 31, 2023	December 31, 2022
U.S. treasuries	$ 7,331,398	$ 7,180,129
Corporate [(1)]	4,474,372	4,390,568
Agencies	481,850	395,149
Non-U.S. government	364,048	383,838
Residential mortgage-backed	786,680	710,429
Commercial mortgage-backed	215,655	213,987
Asset-backed	1,041,582	1,077,302
Total fixed maturity investments trading	$ 14,695,585	$ 14,351,402

(1) Corporate fixed maturity investments include non-U.S. government-backed corporate fixed maturity investments.

Contractual maturities of fixed maturity investments trading are described in the following table. Expected maturities will differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

	March 31, 2023		December 31, 2022	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due in less than one year	$ 569,267	$ 562,042	$ 364,501	$ 356,770
Due after one through five years	8,180,866	8,055,551	8,117,971	7,875,771
Due after five through ten years	3,882,836	3,770,478	4,072,142	3,805,287
Due after ten years	289,700	263,597	356,268	311,856
Mortgage-backed	1,073,453	1,002,335	1,009,205	924,416
Asset-backed	1,071,751	1,041,582	1,118,464	1,077,302
Total	$ 15,067,873	$ 14,695,585	$ 15,038,551	$ 14,351,402

Equity Investments

The following table summarizes the fair value of equity investments:

	March 31, 2023	December 31, 2022
Fixed income exchange traded funds	$ 296,049	$ 295,481
Financials	107,455	103,250
Equity exchange traded funds	—	90,510
Communications and technology	58,434	48,687
Consumer	36,532	33,447
Industrial, utilities and energy	25,012	25,326
Healthcare	24,001	24,617
Basic materials	3,911	3,740
Total	$ 551,394	$ 625,058

Pledged Investments

At March 31, 2023, $7.9 billion (December 31, 2022 - $7.9 billion) of cash and investments at fair value were on deposit with, or in trust accounts for the benefit of, various counterparties, including with respect to the Company’s letter of credit facilities. Of this amount, $1.3 billion (December 31, 2022 - $1.2 billion) is on deposit with, or in trust accounts for the benefit of, U.S. state regulatory authorities.

Reverse Repurchase Agreements

At March 31, 2023, the Company held $156.7 million (December 31, 2022 - $38.5 million) of reverse repurchase agreements. These loans are fully collateralized, are generally outstanding for a short period of time and are presented on a gross basis as part of short term investments on the Company’s consolidated balance sheets. The required collateral for these loans typically includes high-quality, readily marketable instruments at a minimum amount of 102% of the loan principal. Upon maturity, the Company receives principal and interest income.

Net Investment Income

The components of net investment income are as follows:

	Three months ended	
	March 31, 2023	March 31, 2022
Fixed maturity investments trading	$ 155,500	$ 62,417
Short term investments	32,950	1,136
Equity investments	3,399	2,754
Other investments		
Catastrophe bonds	38,831	17,360
Other	24,571	5,552
Cash and cash equivalents	4,264	(41)
	259,515	89,178
Investment expenses	(5,137)	(5,487)
Net investment income	$ 254,378	$ 83,691

Net Realized and Unrealized Gains (Losses) on Investments

Net realized and unrealized gains (losses) on investments are as follows:

	Three months ended	
	March 31, 2023	March 31, 2022
Net realized gains (losses) on fixed maturity investments trading	$ (104,765)	$ (121,152)
Net unrealized gains (losses) on fixed maturity investments trading	312,026	(464,177)
Net realized and unrealized gains (losses) on fixed maturity investments trading	207,261	(585,329)
Net realized and unrealized gains (losses) on investments-related derivatives[1]	12,162	(40,288)
Net realized gains (losses) on equity investments	(8,738)	(20)
Net unrealized gains (losses) on equity investments	39,151	(48,669)
Net realized and unrealized gains (losses) on equity investments	30,413	(48,689)
Net realized and unrealized gains (losses) on other investments - catastrophe bonds	24,126	(8,261)
Net realized and unrealized gains (losses) on other investments - other	5,489	9,550
Net realized and unrealized gains (losses) on investments	$ 279,451	$ (673,017)

(1) Net realized and unrealized gains (losses) on investment-related derivatives includes fixed maturity investments related derivatives (interest rate futures, interest rate swaps, credit default swaps and total return swaps), and equity investments related derivatives (equity futures). See “Note 13. Derivative Instruments” for additional information.

Net Sales (Purchases) of Investments

The tables below show the Company's cash flows in respect of gross and net purchases and sales of equity investments, short term investments, other investments and investments in other ventures for the three months ended March 31, 2023 and 2022.

Three months ended March 31, 2023	Gross Purchases	Gross Sales	Net
Equity investments	$ (1,599)	105,676	$ 104,077
Short term investments	$ (7,246,835)	6,766,410	$ (480,425)
Other investments	$ (212,336)	52,814	$ (159,523)
Investments in other ventures	$ (11,250)	—	$ (11,250)

Three months ended March 31, 2022	Gross Purchases	Gross Sales	Net
Equity investments	$ (396,298)	22,006	$ (374,292)
Short term investments	$ (7,138,020)	7,764,659	$ 626,639
Other investments	$ (276,668)	65,828	$ (210,840)
Investments in other ventures	$ (905)	126	$ (779)

NOTE 4. FAIR VALUE MEASUREMENTS

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

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

- Fair values determined by Level 1 inputs utilize unadjusted quoted prices obtained from active markets for identical assets or liabilities for which the Company has access at the measurement date. The fair value is determined by multiplying the quoted price by the quantity held by the Company;
- Fair values determined by Level 2 inputs utilize inputs (other than quoted prices included in Level 1) that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets and liabilities in active markets, and inputs other than quoted prices that are observable for the asset or liability, such as interest rates and yield curves that are observable at commonly quoted intervals, broker quotes and certain pricing indices; and
- Level 3 inputs are based all or in part on significant unobservable inputs for the asset or liability, and include situations where there is little, if any, market activity for the asset or liability. In these cases, significant management assumptions can be used to establish management's best estimate of the assumptions used by other market participants in determining the fair value of the asset or liability.

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

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

There have been no material changes in the Company's valuation techniques, nor have there been any transfers between Level 1 and Level 2, or Level 2 and Level 3 during the period represented by these consolidated financial statements.

Below is a summary of the assets and liabilities that are measured at fair value on a recurring basis and also represents the carrying amount on the Company's consolidated balance sheets:

At March 31, 2023	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fixed maturity investments trading				
U.S. treasuries	$ 7,331,398	$ 7,331,398	$ —	$ —
Corporate [1]	4,474,372	—	4,474,372	—
Agencies	481,850	—	481,850	—
Non-U.S. government	364,048	—	364,048	—
Residential mortgage-backed	786,680	—	786,680	—
Commercial mortgage-backed	215,655	—	215,655	—
Asset-backed	1,041,582	—	1,041,582	—
Total fixed maturity investments trading	14,695,585	7,331,398	7,364,187	—
Short term investments	5,177,095	54,095	5,123,000	—
Equity investments trading	551,394	551,394	—	—
Other investments				
Catastrophe bonds	1,388,579	—	1,388,579	—
Term loans	100,000	—	—	100,000
Direct private equity investments	67,532	—	—	67,532
	1,556,111	—	1,388,579	167,532
Fund investments [2]	1,144,544	—	—	—
Total other investments	2,700,655	—	1,388,579	167,532
Other assets and (liabilities)				
Assumed and ceded (re)insurance contracts [3]	(1,112)	—	—	(1,112)
Derivative assets [4]	33,435	3,961	29,474	—
Derivative liabilities [4]	(16,587)	(4,985)	(11,602)	—
Total other assets and (liabilities)	15,736	(1,024)	17,872	(1,112)
	$ 23,140,465	$ 7,935,863	$ 13,893,638	$ 166,420

(1) Corporate fixed maturity investments include non-U.S. government-backed corporate fixed maturity investments.

(2) Fund investments, which may include private equity funds, private credit funds, and hedge funds, are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient and have not been classified in the fair value hierarchy. The fair value presented in this table is provided to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheet.

(3) Included in assumed and ceded (re)insurance contracts at March 31, 2023 was $2.0 million of other assets and $3.2 million of other liabilities.

(4) Refer to "Note 13. Derivative Instruments" for additional information related to the fair value, by type of contract, of derivatives entered into by the Company.

At December 31, 2022	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fixed maturity investments trading				
U.S. treasuries	$ 7,180,129	$ 7,180,129	$ —	$ —
Corporate (1)	4,390,568	—	4,390,568	—
Agencies	395,149	—	395,149	—
Non-U.S. government	383,838	—	383,838	—
Residential mortgage-backed	710,429	—	710,429	—
Commercial mortgage-backed	213,987	—	213,987	—
Asset-backed	1,077,302	—	1,077,302	—
Total fixed maturity investments trading	14,351,402	7,180,129	7,171,273	—
Short term investments	4,669,272	—	4,669,272	—
Equity investments	625,058	625,058	—	—
Other investments				
Catastrophe bonds	1,241,468	—	1,241,468	—
Term loans	100,000			100,000
Direct private equity investments	66,780	—	—	66,780
	1,408,248	—	1,241,468	166,780
Fund investments (2)	1,086,706	—	—	—
Total other investments	2,494,954	—	1,241,468	166,780
Other assets and (liabilities)				
Assumed and ceded (re)insurance contracts (3)	(1,832)	—	—	(1,832)
Derivative assets (4)	44,400	387	44,013	—
Derivative liabilities (4)	(7,560)	(2,008)	(5,552)	—
Total other assets and (liabilities)	35,008	(1,621)	38,461	(1,832)
	$ 22,175,694	$ 7,803,566	$ 13,120,474	$ 164,948

(1) Corporate fixed maturity investments include non-U.S. government-backed corporate fixed maturity investments.

(2) Fund investments, which may include private equity funds, private credit funds and hedge funds, are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient and have not been classified in the fair value hierarchy. The fair value presented in this table is provided to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheet.

(3) Included in assumed and ceded (re)insurance contracts at December 31, 2022 was $3.5 million of other assets and $5.3 million of other liabilities.

(4) Refer to "Note 13. Derivative Instruments" for additional information related to the fair value, by type of contract, of derivatives entered into by the Company.

Level 1 and Level 2 Assets and Liabilities Measured at Fair Value

Fixed Maturity Investments

Fixed maturity investments included in Level 1 consist of the Company's investments in U.S. treasuries. Fixed maturity investments included in Level 2 are agencies, corporate (including non-U.S. government-backed corporate), non-U.S. government, residential mortgage-backed, commercial mortgage-backed and asset-backed.

The Company’s fixed maturity investments are primarily priced using pricing services, such as index providers and pricing vendors, as well as broker quotations. In general, the pricing vendors provide pricing for a high volume of liquid securities that are actively traded. For securities that do not trade on an exchange, the pricing services generally utilize market data and other observable inputs in matrix pricing models to determine month end prices. Observable inputs include benchmark yields, reported trades, broker-dealer quotes, issuer spreads, bids, offers, reference data and industry and economic events. Index pricing generally relies on market traders as the primary source for pricing; however, models are also utilized to provide prices for all index eligible securities. The models use a variety of observable inputs such as benchmark yields, transactional data, dealer runs, broker-dealer quotes and corporate actions. Prices are generally verified using third-party data. Securities which are priced by an index provider are generally included in the index.

In general, broker-dealers value securities through their trading desks based on observable inputs. The methodologies include mapping securities based on trade data, bids or offers, observed spreads, and performance on newly issued securities. Broker-dealers also determine valuations by observing secondary trading of similar securities. Prices obtained from broker quotations are considered non-binding, however they are based on observable inputs and by observing secondary trading of similar securities obtained from active and non-distressed markets.

The Company considers these broker quotations to be Level 2 inputs as they are corroborated with other market observable inputs. The techniques generally used to determine the fair value of the Company’s fixed maturity investments are detailed below by asset class.

U.S. Treasuries

Level 1 - At March 31, 2023, the Company’s U.S. treasuries fixed maturity investments were primarily priced by pricing services and had a weighted average yield to maturity of 3.9% and a weighted average credit quality of AA (December 31, 2022 - 4.3% and AA, respectively). When pricing these securities, the pricing services utilize daily data from many real time market sources, including active broker-dealers. Certain data sources are regularly reviewed for accuracy to attempt to ensure the most reliable price source is used for each issue and maturity date.

Corporate

Level 2 - At March 31, 2023, the Company’s corporate fixed maturity investments principally consisted of U.S. and international corporations and non-U.S. government-backed corporations and had a weighted average yield to maturity of 5.9% and a weighted average credit quality of BBB (December 31, 2022 - 6.3% and BBB, respectively).

The Company’s corporate fixed maturity investments, other than non-U.S. government-backed corporations, are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources regarding the issuer of the security and obtain credit data, as well as other observations, from markets and sector news. Evaluations are updated by obtaining broker-dealer quotes and other market information including actual trade volumes, when available. The pricing services also consider the specific terms and conditions of the securities, including any specific features which may influence risk. In certain instances, securities are individually evaluated using a spread which is added to the U.S. treasury curve or a security specific swap curve as appropriate.

Non-U.S. government-backed corporate fixed maturity investments are primarily priced by pricing services that employ proprietary discounted cash flow models to value the securities. Key quantitative inputs for these models are daily observed benchmark curves for treasury, swap and high quality credits. The pricing services then apply a credit spread to the respective curve for each security which is developed by in-depth and real time market analysis. For securities in which trade volume is low, the pricing services utilize data from more frequently traded securities with similar attributes. These models may also be supplemented by daily market and credit research for international markets.

Agencies

Level 2 - At March 31, 2023, the Company’s agency fixed maturity investments had a weighted average yield to maturity of 4.5% and a weighted average credit quality of AA (December 31, 2022 - 4.6% and AA, respectively). The issuers of the Company's agency fixed maturity investments primarily consist of the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and other agencies. Fixed maturity investments included in agencies are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources and integrate other observations from markets and sector news. Evaluations are updated by obtaining broker-dealer quotes and other market information including actual trade volumes, when available. The fair value of each security is individually computed using analytical models which incorporate option adjusted spreads and other daily interest rate data.

Non-U.S. Government

Level 2 - At March 31, 2023, the Company's non-U.S. government fixed maturity investments had a weighted average yield to maturity of 4.3% and a weighted average credit quality of AA (December 31, 2022 - 4.7% and AA, respectively). The issuers of securities in this sector are non-U.S. governments and their respective agencies as well as supranational organizations. Securities held in these sectors are primarily priced by pricing services that employ proprietary discounted cash flow models to value the securities. Key quantitative inputs for these models are daily observed benchmark curves for treasury, swap and high issuance credits. The pricing services then apply a credit spread for each security which is developed by in-depth and real time market analysis. For securities in which trade volume is low, the pricing services utilize data from more frequently traded securities with similar attributes. These models may also be supplemented by daily market and credit research for international markets.

Residential Mortgage-backed

Level 2 - At March 31, 2023, the Company's residential mortgage-backed fixed maturity investments had a weighted average yield of maturity of 5.2%, a weighted average credit quality of A, and a weighted average life of 8.3 years (December 31, 2022 - 5.4%, A and 8.6 years, respectively). Residential mortgage-backed securities include both agency and non-agency mortgage-backed securities. The Company's agency mortgage-backed fixed maturity investments are primarily priced by pricing services using a mortgage pool specific model which utilizes daily inputs from the active to-be-announced market which is very liquid, as well as the U.S. treasury market. The model also utilizes additional information, such as the weighted average maturity, weighted average coupon and other available pool level data which is provided by the sponsoring agency. Valuations are also corroborated with active market quotes.

Non-agency mortgage-based securities are primarily priced by pricing services using an option adjusted spread model or other relevant models, which principally utilize inputs including benchmark yields, available trade information or broker quotes, and issuer spreads. The pricing services also review collateral prepayment speeds, loss severity and delinquencies among other collateral performance indicators for the securities valuation, when applicable.

Commercial Mortgage-backed

Level 2 - At March 31, 2023, the Company's commercial mortgage-backed fixed maturity investments had a weighted average yield to maturity of 8.4%, a weighted average credit quality of AA, and a weighted average life of 2.5 years (December 31, 2022 - 7.4%, AA and 3.2 years, respectively). Securities held in these sectors are primarily priced by pricing services. The pricing services apply dealer quotes and other available trade information such as bids and offers, prepayment speeds which may be adjusted for the underlying collateral or current price data, the U.S. treasury curve and swap curve as well as cash settlement. The pricing services discount the expected cash flows for each security held in this sector using a spread adjusted benchmark yield based on the characteristics of the security.

Asset-backed

Level 2 - At March 31, 2023, the Company's asset-backed fixed maturity investments had a weighted average yield to maturity of 7.5%, a weighted average credit quality of AA and a weighted average life of 4.9 years (December 31, 2022 - 7.4%, AA and 5.2 years, respectively). The underlying collateral for the Company's asset-backed fixed maturity investments primarily consists of collateralized loan obligations and other receivables. Securities held in these sectors are primarily priced by pricing services. The pricing services apply dealer quotes and other available trade information such as bids and offers, prepayment speeds which may be adjusted for the underlying collateral or current price data, the U.S. treasury curve and swap curve as well as cash settlement. The pricing services determine the expected cash flows for each security held in this sector using historical prepayment and default projections for the underlying collateral and current market data. In addition, a spread is applied to the relevant benchmark and used to discount the cash flows noted above to determine the fair value of the securities held in this sector.

Short Term Investments

Level 1 - At March 31, 2023, the Company’s short term investments in U.S. treasuries were primarily priced by pricing services and had a weighted average yield to maturity of 4.1% and a weighted average credit quality of AAA (December 31, 2022 - 4.0% and AAA). When pricing these securities, the pricing services utilize daily data from many real time market sources, including active broker-dealers. Certain data sources are regularly reviewed for accuracy to attempt to ensure the most reliable price source is used for each issue and maturity date.

Level 2 - At March 31, 2023, the Company’s other short term investments had a weighted average yield to maturity of 4.6% and a weighted average credit quality of AAA (December 31, 2022 - 4.2% and AAA, respectively). Amortized cost approximates fair value for the majority of the remainder of the Company’s short term investments portfolio and, in certain cases, fair value is determined in a manner similar to the Company’s fixed maturity investments noted above.

Equity Investments

Level 1 - The fair value of the Company’s portfolio of equity investments, classified as trading is primarily priced by pricing services, reflecting the closing price quoted for the final trading day of the period. When pricing these securities, the pricing services utilize daily data from many real time market sources, including applicable securities exchanges. All data sources are regularly reviewed for accuracy to attempt to ensure the most reliable price source was used for each security.

Other Investments

Catastrophe Bonds

Level 2 - The Company’s other investments include investments in catastrophe bonds which are recorded at fair value based on broker or underwriter bid indications.

Other Assets and Liabilities

Derivatives

Level 1 and Level 2 - Other assets and liabilities include certain derivatives entered into by the Company. The fair value of these transactions includes certain exchange traded futures contracts which are considered Level 1, and foreign currency contracts and certain credit derivatives, determined using standard industry valuation models and considered Level 2, as the inputs to the valuation model are based on observable market inputs. For credit derivatives, these inputs include credit spreads, credit ratings of the underlying referenced security, the risk-free rate and the contract term. For foreign currency contracts, these inputs include spot rates and interest rate curves.

Level 3 Assets and Liabilities Measured at Fair Value

Below is a summary of quantitative information regarding the significant unobservable inputs (Level 3) used in determining the fair value of assets and liabilities measured at fair value on a recurring basis:

At March 31, 2023	Fair Value (Level 3)	Valuation Technique	Unobservable Inputs	Low	High	Weighted Average or Actual
Other investments						
Direct private equity investments	$ 67,532	Internal valuation model	Discount rate	n/a	n/a	9.0%
			Liquidity discount	n/a	n/a	15.0 %
Term loans	100,000	Discounted cash flow	Credit spread adjustment	n/a	n/a	0.2 %
			Risk premium	n/a	n/a	2.6 %
Total other investments	167,532					
Other assets and (liabilities)						
Assumed and ceded (re)insurance contracts	(1,112)	Internal valuation model	Net undiscounted cash flows	n/a	n/a	$ 14,964
			Expected loss ratio	n/a	n/a	4.3 %
			Discount rate	n/a	n/a	3.6 %
Total other assets and (liabilities)	(1,112)					
Total assets and (liabilities) measured at fair value on a recurring basis using Level 3 inputs	$ 166,420					

At December 31, 2022	Fair Value (Level 3)	Valuation Technique	Unobservable Inputs	Low	High	Weighted Average or Actual
Other investments						
Direct private equity investments	$ 66,780	Internal valuation model	Discount rate	n/a	n/a	7.5 %
			Liquidity discount	n/a	n/a	15.0 %
Term loans	100,000	Discounted cash flow	Credit spread Adjustment	n/a	n/a	0.2 %
			Risk premium	n/a	n/a	2.6 %
Total other investments	166,780					
Other assets and (liabilities)						
Assumed and ceded (re)insurance contracts	(1,832)	Internal valuation model	Net undiscounted cash flows	n/a	n/a	$ 14,734
			Expected loss ratio	n/a	n/a	5.8 %
			Discount rate	n/a	n/a	4.0 %
Total other assets and (liabilities)	(1,832)					
Total assets and (liabilities) measured at fair value on a recurring basis using Level 3 inputs	$ 164,948					

Below is a reconciliation of the beginning and ending balances, for the periods shown, of assets and liabilities measured at fair value on a recurring basis using Level 3 inputs.

	Other Investments		Other Assets and (Liabilities)	Total
	Direct private equity investments	Term loans		
Balance - January 1, 2023	$ 66,780	$ 100,000	$ (1,832)	$ 164,948
Included in net investment income	62	—	—	62
Included in net realized and unrealized gains (losses) on investments	709	—	—	709
Included in other income (loss)	—	—	1,020	1,020
Total foreign exchange gains (losses)	(19)	—	—	(19)
Purchases	—	—	(300)	(300)
Balance - March 31, 2023	$ 67,532	$ 100,000	$ (1,112)	$ 166,420

	Other investments		Other assets and (liabilities)	Total
	Direct private equity investments	Term loans		
Balance - January 1, 2022	$ 88,373	$ 74,850	$ (4,727)	$ 158,496
Included in net investment income	—	605	—	605
Included in net realized and unrealized gains (losses) on investments	(8,150)	—	—	(8,150)
Included in other income (loss)	—	—	909	909
Total foreign exchange gains (losses)	(10)	—	—	(10)
Purchases	—	10,000	(281)	9,719
Settlements	—	(455)	—	(455)
Balance - March 31, 2022	$ 80,213	$ 85,000	$ (4,099)	$ 161,114

Other Investments

Direct private equity investments

Level 3 - At March 31, 2023, the Company's other investments included $67.5 million (December 31, 2022 - $66.8 million) of direct private equity investments which are recorded at fair value, with the fair value obtained through the use of internal valuation models. The Company measured the fair value of these investments using multiples of net tangible book value of the underlying entities. The significant unobservable inputs used in the fair value measurement of these investments are liquidity discount rates applied to each of the net tangible book value multiples used in the internal valuation models, and discount rates applied to the expected cash flows of the underlying entities in various scenarios. These unobservable inputs in isolation can cause significant increases or decreases in fair value. Generally, an increase in the liquidity discount rate or discount rates would result in a decrease in the fair value of these private equity investments.

Term Loans

Level 3 - At March 31, 2023, the Company’s other investments included a $100.0 million (December 31, 2022 - $100.0 million) investment in a term loan which is recorded at fair value, with the fair value obtained through the use of a discounted cash flow model. The significant unobservable inputs used in the discounted cash flow model are the cash flow projection of the associated term loan, and the discount rate. The discount rate used is based on the Secured Overnight Financing Rate, or SOFR, which is then adjusted for credit risk and a risk premium. These adjustments may be impacted by market movements implied by transactions of similar or related assets, loan-to-value, tenor, liquidity, credit risk adjustment or other risk factors. Assumptions used in the valuation process may significantly impact the resulting fair value.

Other Assets and Liabilities

Assumed and Ceded (Re)insurance Contracts

Level 3 - At March 31, 2023, the Company had a $1.1 million net liability (December 31, 2022 - $1.8 million net liability) related to assumed and ceded (re)insurance contracts accounted for at fair value, with the fair value obtained through the use of an internal valuation model. The inputs to the internal valuation model are principally based on proprietary data as observable market inputs are generally not available. The most significant unobservable inputs include the assumed and ceded expected net cash flows related to the contracts, including the expected premium, acquisition expenses and losses; the expected loss ratio and the relevant discount rate used to present value the net cash flows. The contract period and acquisition expense ratio are considered an observable input as each is defined in the contract. Generally, an increase in the net expected cash flows and expected term of the contract and a decrease in the discount rate, expected loss ratio or acquisition expense ratio, would result in an increase in the expected profit and ultimate fair value of these assumed and ceded (re)insurance contracts.

Financial Instruments Disclosed, But Not Carried, at Fair Value

The Company uses various financial instruments in the normal course of its business. The Company’s (re)insurance contracts are excluded from the fair value of financial instruments accounting guidance, unless the Company elects the fair value option, and therefore, are not included in the amounts discussed herein. The carrying values of cash and cash equivalents, accrued investment income, receivables for investments sold, certain other assets, payables for investments purchased, certain other liabilities, and other financial instruments not included herein approximated their fair values.

Debt

Included on the Company’s consolidated balance sheet at March 31, 2023 were debt obligations of $1.1 billion (December 31, 2022 - $1.2 billion). At March 31, 2023, the fair value of the Company’s debt obligations was $1.1 billion (December 31, 2022 – $1.1 billion).

The fair value of the Company’s debt obligations is determined using indicative market pricing obtained from third-party service providers, which the Company considers Level 2 in the fair value hierarchy. There have been no changes during the period in the Company’s valuation technique used to determine the fair value of the Company’s debt obligations. Refer to “Note 7. Debt and Credit Facilities” for additional information related to the Company’s debt obligations.

The Fair Value Option for Financial Assets and Financial Liabilities

The Company has elected to account for certain financial assets and financial liabilities at fair value using the guidance under FASB ASC Topic *Financial Instruments* as the Company believes it represents the most meaningful measurement basis for these assets and liabilities. Below is a summary of the balances the Company has elected to account for at fair value:

	March 31, 2023	December 31, 2022
Other investments	$ 2,700,655	$ 2,494,954
Other assets	$ 2,045	$ 3,499
Other liabilities	$ 3,157	$ 5,331

The change in fair value of other investments resulted in net unrealized gains on investments for the three months ended March 31, 2023 of $30.2 million (March 31, 2022 – net unrealized losses of $6.1 million).

Measuring the Fair Value of Other Investments Using Net Asset Valuations

The table below shows the Company's portfolio of other investments measured using net asset valuations as a practical expedient:

At March 31, 2023	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period (Minimum Days)	Redemption Notice Period (Maximum Days)
Private credit funds	$ 806,495	$ 695,788	See below	See below	See below
Private equity funds	338,049	466,854	See below	See below	See below
Total other investments measured using net asset valuations	$ 1,144,544	$ 1,162,642			

At December 31, 2022	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period (Minimum Days)	Redemption Notice Period (Maximum Days)
Private credit funds	$ 771,383	$ 714,302	See below	See below	See below
Private equity funds	315,323	493,155	See below	See below	See below
Total other investments measured using net asset valuations	$ 1,086,706	$ 1,207,457			

Private Credit Funds

The Company's investments in private credit funds include limited partnership or similar interests that invest in certain private credit asset classes, including U.S. direct lending funds, secondaries, mezzanine investments, distressed securities and senior secured bank loan funds. The Company generally has no right to redeem its interest in any of these private credit funds in advance of dissolution of the applicable limited partnerships. Instead, distributions are received by the Company in connection with the liquidation or maturity of the underlying private credit assets of the fund. It is estimated that the majority of the underlying assets of the limited partnerships would liquidate over 5 to 10 years from inception of the limited partnership.

Private Equity Funds

The Company's investments in private equity funds include limited partnership or similar interests that invest in certain private equity asset classes including U.S. and global leveraged buyouts. The Company generally has no right to redeem its interest in any of these private equity funds in advance of dissolution of the applicable limited partnerships. Instead, distributions are received by the Company in connection with the exit from the underlying private equity investments of the fund. It is estimated that the majority of the underlying assets of the limited partnerships would liquidate over 5 to 10 years from inception of the limited partnership.

Limited Partnerships Entities

The Company’s fund investments represent variable interests in limited partnerships entities with unaffiliated fund managers in the normal course of business. The Company determined that certain of these limited partnership interests represent investments in variable interest entities (“VIEs”) and that it is not required to consolidate these investments because it is not the primary beneficiary of these VIEs. The Company’s maximum exposure to loss with respect to these VIEs is limited to the carrying amounts reported in the Company’s consolidated balance sheet and any unfunded commitment.

The following table summarizes the aggregate carrying amount of the unconsolidated fund investments in VIEs, as well as our maximum exposure to loss associated with these VIEs:

		Maximum Exposure to Loss	
At March 31, 2023	**Carrying amount**	**Unfunded Commitments**	**Total**
Other investments	$ 974,466	$ 1,101,990	$ 2,076,456
At December 31, 2022			
Other investments	$ 916,248	$ 1,148,630	$ 2,064,878

NOTE 5. REINSURANCE

The Company purchases reinsurance and other protection to manage its risk portfolio and to reduce its exposure to large losses. The Company currently has in place contracts that provide for recovery of a portion of certain claims and claim expenses, generally in excess of various retentions or on a proportional basis. In addition to loss recoveries, certain of the Company’s ceded reinsurance contracts provide for payments of additional premiums, for reinstatement premiums and for lost no-claims bonuses, which are incurred when losses are ceded to the respective reinsurance contracts. The Company remains liable to the extent that any reinsurer fails to meet its obligations.

The following table sets forth the effect of reinsurance and retrocessional activity on premiums written and earned and on net claims and claim expenses incurred:

	Three months ended	
	March 31, 2023	March 31, 2022
Premiums Written		
Direct	$ 172,696	$ 301,105
Assumed	2,617,565	2,641,859
Ceded	(526,558)	(777,747)
Net premiums written	$ 2,263,703	$ 2,165,217
Premiums Earned		
Direct	$ 254,019	$ 242,761
Assumed	1,843,669	1,690,268
Ceded	(417,138)	(446,604)
Net premiums earned	$ 1,680,550	$ 1,486,425
Claims and Claim Expenses		
Gross claims and claim expenses incurred	$ 959,704	$ 1,017,555
Claims and claim expenses recovered	(158,504)	(175,822)
Net claims and claim expenses incurred	$ 801,200	$ 841,733

In assessing an allowance for reinsurance assets, which includes premiums receivable and reinsurance recoverable, the Company considers historical information, financial strength of reinsurers, collateralization amounts, and counterparty credit ratings to determine the appropriateness of the allowance. In assessing future default for reinsurance assets, the Company evaluates the provision for current expected credit losses under the probability of default and loss given default method. The Company utilizes its internal capital and risk models, which use counterparty ratings from major rating agencies, and assesses the current market conditions for the likelihood of default. The Company updates its internal capital and risk models for counterparty credit ratings and current market conditions on a periodic basis. Historically, the Company has not experienced material credit losses from reinsurance assets.

Premiums receivable reflect premiums written based on contract and policy terms and include estimates based on information received from both insureds and ceding companies, supplemented by our own judgement, including our estimates of premiums that are written but not reported. Due to the nature of reinsurance, ceding companies routinely report and remit premiums to us subsequent to the contract coverage period, although the time lag involved in the process of reporting and collecting premiums is typically shorter than the lag in reporting losses.

At March 31, 2023, the Company’s premiums receivable balance was $5.9 billion (December 31, 2022 - $5.1 billion). Of the Company’s premiums receivable balance as of March 31, 2023, the majority are receivable from highly rated counterparties. The provision for current expected credit losses on the Company’s premiums receivable was $3.4 million at March 31, 2023 (December 31, 2022 - $4.6 million). The following table provides a roll forward of the provision for current expected credit losses of the Company’s premiums receivable:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 4,606	$ 2,776
Provision for (release of) allowance	(1,235)	—
Ending balance	$ 3,371	$ 2,776

Reinsurance recoverable reflects amounts due from reinsurers based on the claim liabilities associated with the reinsurance policy. The Company accrues amounts that are due from reinsurers based on estimated ultimate losses applicable to the contracts.

At March 31, 2023, the Company's reinsurance recoverable balance was $4.7 billion (December 31, 2022 - $4.7 billion). Of the Company's reinsurance recoverable balance at March 31, 2023, 48.7% is fully collateralized by our reinsurers, 50.7% is recoverable from reinsurers rated A- or higher by major rating agencies and 0.6% is recoverable from reinsurers rated lower than A- by major rating agencies (December 31, 2022 - 47.2%, 52.0% and 0.8%, respectively). The reinsurers with the three largest balances accounted for 19.2%, 8.2% and 6.2%, respectively, of the Company's reinsurance recoverable balance at March 31, 2023 (December 31, 2022 - 20.8%, 7.0% and 5.4%, respectively). The provision for current expected credit losses was $11.5 million at March 31, 2023 (December 31, 2022 - $12.2 million). The three largest company-specific components of the provision for current expected credit losses represented 15.1%, 9.7% and 6.5%, respectively, of the Company's total provision for current expected credit losses at March 31, 2023 (December 31, 2022 - 14.3%, 9.1% and 8.0%, respectively). The following table provides a roll forward of the provision for current expected credit losses of the Company's reinsurance recoverable:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 12,169	$ 8,344
Provision for (release of) allowance	(665)	—
Ending balance	$ 11,504	$ 8,344

NOTE 6. RESERVE FOR CLAIMS AND CLAIM EXPENSES

The Company believes the most significant accounting judgment made by management is its estimate of claims and claim expense reserves. Claims and claim expense reserves represent estimates, including actuarial and statistical projections at a given point in time, of the ultimate settlement and administration costs for unpaid claims and claim expenses arising from the insurance and reinsurance contracts the Company sells. The Company's reserve for claims and claim expenses are a combination of case reserves, additional case reserves ("ACR") and incurred but not reported losses and incurred but not enough reported losses (collectively referred to as "IBNR"). Case reserves are losses reported to the Company by insureds and ceding companies, but which have not yet been paid. If deemed necessary and in certain situations, the Company establishes ACR which represents the Company's estimate for claims related to specific contracts which the Company believes may not be adequately estimated by the client as of that date or within the IBNR. The Company establishes IBNR using actuarial techniques and expert judgement to represent the anticipated cost of claims which have not been reported to the Company yet, or where the Company anticipates increased reporting. The Company's reserving committee, which includes members of the Company's senior management, reviews, discusses, and assesses the reasonableness and adequacy of the reserving estimates included in our unaudited consolidated financial statements.

The following table summarizes the Company's reserve for claims and claim expenses by segment, allocated between case reserves, additional case reserves and IBNR:

At March 31, 2023	Case Reserves	Additional Case Reserves	IBNR	Total
Property	$ 2,017,567	$ 2,069,014	$ 3,100,878	$ 7,187,459
Casualty and Specialty	1,917,179	189,794	6,702,394	8,809,367
Total	$ 3,934,746	$ 2,258,808	$ 9,803,272	$ 15,996,826
At December 31, 2022				
Property	$ 1,956,688	$ 2,008,891	$ 3,570,253	$ 7,535,832
Casualty and Specialty	1,864,365	167,993	6,324,383	8,356,741
Total	$ 3,821,053	$ 2,176,884	$ 9,894,636	$ 15,892,573

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

Three months ended March 31,	2023	2022
Reserve for claims and claim expenses, net of reinsurance recoverable, as of beginning of period	$ 11,181,648	$ 9,025,961
Net incurred related to:		
Current year	905,952	859,566
Prior years	(104,752)	(17,833)
Total net incurred	801,200	841,733
Net paid related to:		
Current year	26,969	17,790
Prior years	690,868	608,805
Total net paid	717,837	626,595
Foreign exchange [(1)]	25,144	(50,285)
Reserve for claims and claim expenses, net of reinsurance recoverable, as of end of period	11,290,155	9,190,814
Reinsurance recoverable as of end of period	4,706,671	4,319,490
Reserve for claims and claim expenses as of end of period	$ 15,996,826	$ 13,510,304

(1) Reflects the impact of the foreign exchange revaluation of the reserve for claims and claim expenses, net of reinsurance recoverable, denominated in non-U.S. dollars as at the balance sheet date.

Prior Year Development of the Reserve for Net Claims and Claim Expenses

The Company’s estimates of claims and claim expense reserves are not precise in that, among other things, they are based on predictions of future developments and estimates of future trends and other variable factors. Some, but not all, of the Company’s reserves are further subject to the uncertainty inherent in actuarial methodologies and estimates. Because a reserve estimate is simply an insurer’s estimate at a point in time of its ultimate liability, and because there are numerous factors that affect reserves and claims payments that cannot be determined with certainty in advance, the Company’s ultimate payments will vary, perhaps materially, from its estimates of reserves. If the Company determines in a subsequent period that adjustments to its previously established reserves are appropriate, such adjustments are recorded in the period in which they are identified. On a net basis, the Company’s cumulative favorable or unfavorable development is generally reduced by offsetting changes in its reinsurance recoverable, as well as changes to loss related premiums such as reinstatement premiums and redeemable noncontrolling interest, all of which generally move in the opposite direction to changes in the Company’s ultimate claims and claim expenses.

The following table details the Company’s prior year net development by segment of its liability for net unpaid claims and claim expenses:

Three months ended March 31,	2023	2022
	(Favorable) adverse development	(Favorable) adverse development
Property	$ (81,693)	$ (16,758)
Casualty and Specialty	(23,059)	(1,075)
Total net (favorable) adverse development of prior accident years net claims and claim expenses	$ (104,752)	$ (17,833)

Changes to prior year estimated net claims reserves increased net income by $104.8 million during the three months ended March 31, 2023 (2022 - decreased net loss by $17.8 million), excluding the consideration of changes in reinstatement, adjustment or other premium changes, profit commissions, redeemable noncontrolling interests - DaVinci, Vermeer and Fontana and income tax.

Property Segment

The following tables detail the development of the Company's liability for net unpaid claims and claim expenses for its Property segment, allocated between large and small catastrophe net claims and claim expenses and attritional net claims and claim expenses, included in the other line item:

Three months ended March 31,	**2023**
	(Favorable) adverse development
Catastrophe net claims and claim expenses	
Large catastrophe events	
2022 Weather-Related Large Losses [(1)]	$ (7,785)
2021 Weather-Related Large Losses [(2)]	(32,333)
2020 Weather-Related Large Loss Events [(3)]	6,535
2019 Large Loss Events [(4)]	(15,369)
2018 Large Loss Events [(5)]	(16,259)
2017 Large Loss Events [(6)]	(11,486)
Other	90
Total large catastrophe events	(76,607)
Small catastrophe events and attritional loss movements	
Other small catastrophe events and attritional loss movements	(5,086)
Total small catastrophe events and attritional loss movements	(5,086)
Total catastrophe and attritional net claims and claim expenses	(81,693)
Total net (favorable) adverse development of prior accident years net claims and claim expenses	$ (81,693)

(1) "2022 Weather-Related Large Losses" includes Hurricane Ian, the floods in Eastern Australia in February and March of 2022, Storm Eunice, the severe weather in France in May and June of 2022, Hurricane Fiona and the typhoons in Asia during the third quarter of 2022, Hurricane Nicole and Winter Storm Elliott during the fourth quarter of 2022, and loss estimates associated with certain aggregate loss contracts triggered during 2022 as a result of weather-related catastrophe events.

(2) "2021 Weather-Related Large Losses" includes Winter Storm Uri, the European Floods, Hurricane Ida, the hail storm in Europe in late June 2021, the wildfires in California during the third quarter of 2021, the tornadoes in the Central and Midwest U.S. in December 2021, the Midwest Derecho in December 2021, and losses associated with aggregate loss contracts.

(3) "2020 Weather-Related Large Loss Events" includes Hurricanes Laura, Sally, Isaias, Delta, Zeta and Eta, the California, Oregon and Washington wildfires, Typhoon Maysak, the August 2020 Derecho, and losses associated with aggregate loss contracts.

(4) "2019 Large Loss Events" includes Hurricane Dorian and Typhoons Faxai and Hagibis and certain losses associated with aggregate loss contracts.

(5) "2018 Large Loss Events" includes Typhoons Jebi, Mangkhut and Trami, Hurricane Florence, the wildfires in California during the third and fourth quarters of 2018, Hurricane Michael and certain losses associated with aggregate loss contracts.

(6) "2017 Large Loss Events includes Hurricanes Harvey, Irma and Maria, the Mexico City Earthquake, the wildfires in California during the fourth quarter of 2017 and certain losses associated with aggregate loss contracts.

The net favorable development of prior accident years net claims and claim expenses was driven by better than expected loss emergence.

The net favorable development on other small catastrophe events and attritional loss movements was related to lines of business where the Company principally estimates net claims and claim expenses using traditional actuarial methods.

Three months ended March 31,	2022
	(Favorable) adverse development
Catastrophe net claims and claim expenses	
Large catastrophe events	
2021 Weather-Related Large Losses	$ 19,190
2020 Weather-Related Large Loss Events	(5,272)
2019 Large Loss Events	(4,807)
2018 Large Loss Events	(3,800)
2017 Large Loss Events	(18,000)
Other	(1,601)
Total large catastrophe events	(14,290)
Small catastrophe events and attritional loss movements	
Other small catastrophe events and attritional loss movements	(2,468)
Total small catastrophe events and attritional loss movements	(2,468)
Total catastrophe and attritional net claims and claim expenses	(16,758)
Total net (favorable) adverse development of prior accident years net claims and claim expenses	$ (16,758)

The net favorable development of prior accident years net claims and claim expenses was largely driven by better than expected loss emergence.

The net favorable development on other small catastrophe events and attritional loss movements was related to lines of business where the Company principally estimates net claims and claim expenses using traditional actuarial methods.

Casualty and Specialty Segment

The following table details the development of the Company’s liability for unpaid claims and claim expenses for its Casualty and Specialty segment:

Three months ended March 31,	2023	2022
	(Favorable) adverse development	(Favorable) adverse development
Actuarial methods - actual reported claims less than expected claims	$ (23,059)	$ (1,075)
Total net (favorable) adverse development of prior accident years net claims and claim expenses	$ (23,059)	$ (1,075)

The net favorable development of prior accident years net claims and claim expenses within the Company’s Casualty and Specialty segment of $23.1 million in the three months ended March 31, 2023, was due to reported losses generally coming in lower than expected on attritional net claims and claim expenses driven by favorable experience in other specialty and credit lines of business.

The net favorable development of prior accident years net claims and claim expenses within the Company’s Casualty and Specialty segment of $1.1 million in the three months ended March 31, 2022 was due to reported losses generally coming in lower than expected on attritional net claims and claim expenses within our credit lines of business.

NOTE 7. DEBT AND CREDIT FACILITIES

There have been no material changes to the Company’s debt obligations and credit facilities as described in its Form 10-K for the year ended December 31, 2022, except as described below.

The agreements governing the Company’s debt obligations and credit facilities contain certain customary representations, warranties and covenants. At March 31, 2023, the Company believes that it was in compliance with its debt covenants.

Debt Obligations

A summary of the Company’s debt obligations on its consolidated balance sheets is set forth below:

	March 31, 2023		December 31, 2022	
	Fair Value	Carrying Value	Fair Value	Carrying Value
3.600% Senior Notes due 2029	$ 371,676	$ 394,448	$ 362,644	$ 394,221
3.450% Senior Notes due 2027	284,241	297,898	280,506	297,775
3.700% Senior Notes due 2025	293,463	299,259	290,874	299,168
4.750% Senior Notes due 2025 (DaVinci) (1)	148,088	149,355	146,625	149,278
Total senior notes	1,097,468	1,140,960	1,080,649	1,140,442
Medici Revolving Credit Facility (2)	—	—	30,000	30,000
Total debt	$ 1,097,468	$ 1,140,960	$ 1,110,649	$ 1,170,442

(1) RenaissanceRe owns a noncontrolling economic interest in its joint venture DaVinci. Because RenaissanceRe controls a majority of DaVinci’s issued voting shares, the consolidated financial statements of DaVinci are included in the consolidated financial statements of RenaissanceRe. However, RenaissanceRe does not guarantee or provide credit support for DaVinci and RenaissanceRe’s financial exposure to DaVinci is limited to its investment in DaVinci’s shares and counterparty credit risk arising from reinsurance transactions.

(2) RenaissanceRe owns a noncontrolling economic interest in Medici. Because RenaissanceRe controls all of Medici’s outstanding issued voting shares, the financial statements of Medici are included in RenaissanceRe’s consolidated financial statements. However, RenaissanceRe does not guarantee or provide credit support for Medici, and RenaissanceRe’s financial exposure to Medici is limited to its investment in Medici’s shares and counterparty credit risk arising from reinsurance transactions.

Credit Facilities

The outstanding amounts issued or drawn under each of the Company’s significant credit facilities is set forth below:

At March 31, 2023	Issued or Drawn
Revolving Credit Facility (1)	$ —
Medici Revolving Credit Facility (2)	—
Bilateral Letter of Credit Facilities	
Secured	396,994
Unsecured	483,809
Funds at Lloyd’s Letter of Credit Facility	275,000
	$ 1,155,803

(1) At March 31, 2023, no amounts were issued or drawn under this facility.

(2) RenaissanceRe owns a noncontrolling economic interest in Medici. Because RenaissanceRe controls all of Medici’s outstanding issued voting shares, the financial statements of Medici are included in RenaissanceRe’s consolidated financial statements. However, RenaissanceRe does not guarantee or provide credit support for Medici, and RenaissanceRe’s financial exposure to Medici is limited to its investment in Medici’s shares and counterparty credit risk arising from reinsurance transactions. At March 31, 2023, no amounts were issued or drawn under this facility.

Uncommitted, Secured Standby Letter of Credit Facility with Wells Fargo

On February 22, 2023, RenaissanceRe and certain of its subsidiaries and affiliates, including Renaissance Reinsurance, DaVinci Reinsurance, Renaissance Reinsurance U.S., RenaissanceRe Specialty U.S. and RREAG, entered into an amendment to its letter of credit facility with Wells Fargo Bank, National Association. The Amendment provides for, among other things, the option to request the issuance of up to $150.0 million of secured letters of credit in the aggregate, the removal of an unused option to request unsecured letters of credit, and certain other modifications to the provisions that require collateral to be pledged in favor of Wells Fargo to secure the applicants' reimbursement obligations, including changes to the methodology for calculation of collateral values.

NOTE 8. NONCONTROLLING INTERESTS

A summary of the Company's redeemable noncontrolling interests on its consolidated balance sheets is set forth below:

	March 31, 2023	December 31, 2022
Redeemable noncontrolling interest - DaVinci	$ 2,234,541	$ 1,740,300
Redeemable noncontrolling interest - Medici	1,307,741	1,036,218
Redeemable noncontrolling interest - Vermeer	1,538,245	1,490,840
Redeemable noncontrolling interest - Fontana	276,859	268,031
Redeemable noncontrolling interests	$ 5,357,386	$ 4,535,389

A summary of the Company's redeemable noncontrolling interests on its consolidated statements of operations is set forth below:

	Three months ended	
	March 31, 2023	March 31, 2022
Redeemable noncontrolling interest - DaVinci	$ 166,082	$ (25,323)
Redeemable noncontrolling interest - Medici	45,069	(5,287)
Redeemable noncontrolling interest - Vermeer	47,405	18,698
Redeemable noncontrolling interest - Fontana	8,828	—
Net income (loss) attributable to redeemable noncontrolling interests	$ 267,384	$ (11,912)

Redeemable Noncontrolling Interest – DaVinci

RenaissanceRe owns a noncontrolling economic interest in DaVinci; however, because RenaissanceRe controls a majority of DaVinci's outstanding voting rights, the Company consolidates DaVinci and all significant intercompany transactions have been eliminated. The portion of DaVinci's earnings owned by third parties is recorded in the consolidated statements of operations as net income (loss) attributable to redeemable noncontrolling interests. The Company's noncontrolling economic ownership in DaVinci was 25.4% at March 31, 2023 (December 31, 2022 - 30.9%).

DaVinci shareholders are party to a shareholders agreement which provides DaVinci shareholders, excluding RenaissanceRe, with certain redemption rights that enable each shareholder to notify DaVinci of such shareholder's desire for DaVinci to repurchase up to half of such shareholder's initial aggregate number of shares held, subject to certain limitations, such as limiting the aggregate of all share repurchase requests to 25% of DaVinci's capital in any given year and satisfying all applicable regulatory requirements. If total shareholder requests exceed 25% of DaVinci's capital, the number of shares repurchased will be reduced among the requesting shareholders pro-rata, based on the amounts desired to be repurchased. Shareholders desiring to have DaVinci repurchase their shares must notify DaVinci before March 1 of each year. The repurchase price will be based on GAAP book value as of the end of the year in which the shareholder notice is given, and the repurchase will be effective as of December 31 of that year. The repurchase price can be subject to a holdback and true-up for potential development on outstanding loss reserves. Similarly, when shares are issued by DaVinci and sold to DaVinci shareholders, the sale price is based on GAAP book value as of the end of the period preceding the sale and can be subject to a true-up for potential development on outstanding loss reserves.

2023

During the three months ended March 31, 2023, DaVinci completed an equity capital raise of $250.0 million, comprised of $102.2 million from third-party investors and $147.8 million from RenaissanceRe. In addition, RenaissanceRe sold an aggregate of $275.0 million of its shares in DaVinci to third-party investors and purchased an aggregate of $50.2 million of shares from third-party investors. The Company's noncontrolling economic ownership in DaVinci subsequent to these transactions was 25.4%.

Refer to "Note 15. Subsequent Events" for additional information related to the Company's noncontrolling economic ownership in DaVinci subsequent to March 31, 2023.

The timing of cash flows associated with equity capital transactions can vary from one period to the next. During the three months ended March 31, 2023, RenaissanceRe received $Nil from subscriptions of shares in DaVinci by third-party investors, and paid $45.2 million as a result of redemptions of shares from third-party investors.

2022

During the three months ended March 31, 2022, DaVinci completed an equity capital raise of $500.0 million, comprised of $284.8 million from third-party investors and $215.2 million from RenaissanceRe. In addition, RenaissanceRe sold an aggregate of $102.9 million of its shares in DaVinci to third-party investors and purchased an aggregate of $87.4 million of shares from third-party investors. The Company's noncontrolling economic ownership in DaVinci subsequent to these transactions was 30.9%.

The Company expects its noncontrolling economic ownership in DaVinci to fluctuate over time.

The activity in redeemable noncontrolling interest – DaVinci is detailed in the table below:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 1,740,300	$ 1,499,451
Redemption of shares from redeemable noncontrolling interests	(50,175)	(87,428)
Sale of shares to redeemable noncontrolling interests, net of adjustments	378,334	388,803
Net income (loss) attributable to redeemable noncontrolling interest	166,082	(25,323)
Ending balance	$ 2,234,541	$ 1,775,503

Redeemable Noncontrolling Interest - Medici

RenaissanceRe owns a noncontrolling economic interest in Medici; however, because RenaissanceRe controls all of Medici's issued voting shares, the Company consolidates Medici and all significant intercompany transactions have been eliminated. The portion of Medici's earnings owned by third parties is recorded in the consolidated statements of operations as net income (loss) attributable to redeemable noncontrolling interests. Any shareholder may redeem all or any portion of its shares as of the last day of any calendar month, upon at least 30 calendar days' prior irrevocable written notice to Medici.

2023

During the three months ended March 31, 2023, investors subscribed for $244.1 million, including $0.1 million from the Company, and redeemed $17.6 million of the participating, non-voting common shares of Medici. As a result of these net subscriptions, the Company's noncontrolling economic ownership in Medici was 10.8% at March 31, 2023.

Refer to “Note 15. Subsequent Events” for additional information related to the Company’s noncontrolling economic ownership in Medici subsequent to March 31, 2023.

The timing of cash flows associated with equity capital transactions can vary from one period to the next. During the three months ended March 31, 2023, RenaissanceRe received $253.3 million from subscriptions of shares in Medici by third-party investors, and paid $17.6 million as a result of redemptions of shares from third-party investors.

2022

During the three months ended March 31, 2022, third-party investors subscribed for $167.3 million and redeemed $76.9 million of the participating, non-voting common shares of Medici. As a result of these net subscriptions, the Company’s noncontrolling economic ownership in Medici was 13.6% at March 31, 2022.

The Company expects its noncontrolling economic ownership in Medici to fluctuate over time.

The activity in redeemable noncontrolling interest – Medici is detailed in the table below:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 1,036,218	$ 856,820
Redemption of shares from redeemable noncontrolling interests, net of adjustments	(17,648)	(76,908)
Sale of shares to redeemable noncontrolling interests	244,102	167,287
Net income (loss) attributable to redeemable noncontrolling interest	45,069	(5,287)
Ending balance	$ 1,307,741	$ 941,912

Redeemable Noncontrolling Interest – Vermeer

RenaissanceRe owns 100% of the voting non-participating shares of Vermeer, while the sole third-party investor, PFZW, owns 100% of the non-voting participating shares of Vermeer and retains all of the economic benefits. Vermeer is managed by RUM in return for a management fee. The Company has concluded that Vermeer is a VIE as it has voting rights that are not proportional to its participating rights, and the Company is the primary beneficiary of Vermeer. As a result, the Company consolidates Vermeer and all significant inter-company transactions have been eliminated. As PFZW owns all of the economics of Vermeer, all of Vermeer’s earnings are allocated to PFZW in the consolidated statement of operations as net income (loss) attributable to redeemable noncontrolling interests. The Company has not provided any financial or other support to Vermeer that it was not contractually required to provide.

2023

During the three months ended March 31, 2023, there were no subscriptions for participating, non-voting common shares of Vermeer.

2022

During the three months ended March 31, 2022, PFZW subscribed for $30.0 million of the participating, non-voting common shares of Vermeer.

The Company does not expect its noncontrolling economic ownership in Vermeer to fluctuate over time.

The activity in redeemable noncontrolling interest – Vermeer is detailed in the table below:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 1,490,840	$ 1,197,782
Sale of shares to redeemable noncontrolling interest	—	30,000
Net income (loss) attributable to redeemable noncontrolling interest	47,405	18,698
Ending balance	$ 1,538,245	$ 1,246,480

Redeemable Noncontrolling Interest – Fontana

RenaissanceRe owns a noncontrolling economic interest in Fontana and controls a majority of Fontana's issued voting shares. The Company concluded that Fontana meets the definition of a VIE as the voting rights are not proportional with the obligations to absorb losses and rights to receive residual returns. The Company evaluated its relationship with Fontana and concluded it is the primary beneficiary of Fontana, as it has power over the activities that most significantly impact the economic performance of Fontana. As a result, the Company consolidates Fontana and all significant inter-company transactions have been eliminated. The portion of Fontana's earnings owned by third parties is recorded in the consolidated statements of operations as net income (loss) attributable to redeemable noncontrolling interests. The Company may be obligated to repurchase all or a portion of the shares held by shareholders of Fontana upon request, subject to certain restrictions. The Company has not provided any financial or other support to Fontana that it was not contractually required to provide.

2023

During the three months ended March 31, 2023, there were no subscriptions or redemptions of non-voting common shares of Fontana. The Company's noncontrolling economic ownership in Fontana was 31.6% at March 31, 2023.

The Company's investment in Fontana may fluctuate, perhaps materially, in future quarters.

The activity in redeemable noncontrolling interest – Fontana is detailed in the table below:

	Three months ended	
	March 31, 2023	March 31, 2022
Beginning balance	$ 268,031	$ —
Sale of shares to redeemable noncontrolling interest	—	—
Net income (loss) attributable to redeemable noncontrolling interest	8,828	—
Ending balance	$ 276,859	$ —

NOTE 9. VARIABLE INTEREST ENTITIES

Upsilon RFO

RenaissanceRe indirectly owns a portion of the participating non-voting preference shares of Upsilon RFO and all of Upsilon RFO's voting Class A shares. The shareholders (other than the voting Class A shareholder) participate in all of the profits or losses of Upsilon RFO while their shares remain outstanding. The shareholders (other than the voting Class A shareholder) indemnify Upsilon RFO against losses relating to insurance risk, and therefore, these shares have been accounted for as prospective reinsurance under FASB ASC Topic *Financial Services - Insurance*.

Upsilon RFO is considered a VIE as it has insufficient equity capital to finance its activities without additional financial support. The Company is the primary beneficiary of Upsilon RFO as it has the power over the activities that most significantly impact the economic performance of Upsilon RFO and has the obligation to absorb expected losses and the right to receive expected benefits that could be significant to Upsilon RFO, in accordance with the accounting guidance. As a result, the Company consolidates Upsilon RFO and all significant inter-company transactions have been eliminated. Other than its equity investment in Upsilon RFO, the Company has not provided financial or other support to Upsilon RFO that it was not contractually required to provide.

2023

During the three months ended March 31, 2023 and following the release of collateral that was previously held by cedants associated with prior years' contracts, Upsilon RFO returned $160.1 million of capital to investors, including $20.7 million to the Company. Also during the three months ended March 31, 2023, Upsilon RFO did not issue non-voting preference shares to existing investors. At March 31, 2023, the Company's participation in the risks assumed by Upsilon RFO was 12.6%.

At March 31, 2023, the Company's consolidated balance sheet included total assets and total liabilities of Upsilon RFO of $3.4 billion and $3.4 billion, respectively (December 31, 2022 - $3.7 billion and $3.7 billion, respectively). Of the total assets and liabilities, a net amount of $0.2 billion (December 31, 2022 - $0.2 billion) is attributable to the Company, and $1.1 billion (December 31, 2022 - $1.2 billion) is attributable to third-party investors.

2022

During the three months ended March 31, 2022, $89.0 million of Upsilon RFO non-voting preference shares were issued to existing investors, including $10.0 million to the Company. In addition, during the three months ended March 31, 2022 and following the release of collateral that was previously held by cedants associated with prior years' contracts, Upsilon RFO returned $22.9 million of capital to its investors. At March 31, 2022, the Company's participation in the risks assumed by Upsilon RFO was 13.8%.

Vermeer

Vermeer provides capacity focused on risk remote layers in the U.S. property catastrophe market. Refer to "Note 8. Noncontrolling Interests" for additional information regarding Vermeer.

At March 31, 2023, the Company's consolidated balance sheet included total assets and total liabilities of Vermeer of $1.7 billion and $168.0 million, respectively (December 31, 2022 - $1.6 billion and $144.9 million, respectively). In addition, the Company's consolidated balance sheet included redeemable noncontrolling interests associated with Vermeer of $1.5 billion at March 31, 2023 (December 31, 2022 - $1.5 billion).

Fontana

Fontana provides reinsurance capacity focused on business written within the Company's Casualty and Specialty segment. Refer to "Note 8. Noncontrolling Interests" for additional information regarding Fontana.

At March 31, 2023, the Company's consolidated balance sheet included total assets and total liabilities of Fontana of $878.0 million and $473.4 million, respectively. In addition, the Company's consolidated balance sheet included redeemable noncontrolling interests associated with Fontana of $276.9 million at March 31, 2023.

Mona Lisa Re Ltd.

Mona Lisa Re provides reinsurance capacity to subsidiaries of RenaissanceRe through reinsurance agreements which are collateralized and funded by Mona Lisa Re through the issuance of one or more series of principal-at-risk variable rate notes to third-party investors.

Upon issuance of a series of notes by Mona Lisa Re, all of the proceeds from the issuance are deposited into collateral accounts, separated by series, to fund any potential obligation under the reinsurance agreements entered into with Renaissance Reinsurance and/or DaVinci Reinsurance underlying such series of notes. The outstanding principal amount of each series of notes generally will be returned to holders of such notes upon the expiration of the risk period underlying such notes, unless an event occurs which causes a loss under the applicable series of notes, in which case the amount returned will be reduced by such noteholder's pro rata share of such loss, as specified in the applicable governing documents of such notes. In addition, holders of such notes are generally entitled to interest payments, payable quarterly, as determined by the applicable governing documents of each series of notes.

The Company concluded that Mona Lisa Re meets the definition of a VIE as it does not have sufficient equity capital to finance its activities. The Company evaluated its relationship with Mona Lisa Re and concluded it is not the primary beneficiary of Mona Lisa Re as it does not have the power over the activities that most significantly impact the economic performance of Mona Lisa Re, in accordance with the accounting guidance. As a result, the financial position and results of operations of Mona Lisa Re are not consolidated by the Company.

The only transactions related to Mona Lisa Re that are recorded in the Company's consolidated financial statements are the ceded reinsurance agreements entered into by Renaissance Reinsurance and DaVinci Reinsurance which are accounted for as prospective reinsurance under FASB ASC Topic *Financial Services - Insurance*, and the fair value of the principal-at-risk variable rate notes owned by the Company. Other than its investment in the principal-at-risk variable rate notes of Mona Lisa Re, the Company has not provided financial or other support to Mona Lisa Re that it was not contractually required to provide.

Renaissance Reinsurance and DaVinci Reinsurance have together entered into ceded reinsurance contracts with Mona Lisa Re with ceded premiums written of $18.3 million and $4.6 million, respectively, during the three months ended March 31, 2023 (2022 - $25.1 million and $6.2 million, respectively). In addition, Renaissance Reinsurance and DaVinci Reinsurance recognized ceded premiums earned related to the ceded reinsurance contracts with Mona Lisa Re of $7.7 million and $2.0 million, respectively, during the three months ended March 31, 2023 (2022 - $9.7 million and $2.4 million, respectively).

Effective January 10, 2023, Mona Lisa Re issued two series of principal-at-risk variable rate notes to investors for principal amounts of $85.0 million and $100.0 million. Also during the three months ended March 31, 2023, Mona Lisa Re redeemed its Series 2020-1 principal-at-risk variable rate notes at their par value of $400.0 million, of which $16.5 million was returned to Medici. At March 31, 2023, the total assets and total liabilities of Mona Lisa Re were $466.0 million and $466.0 million, respectively (December 31, 2022 - $654.8 million and $654.8 million, respectively).

The fair value of the Company's investment in the principal-at-risk variable rate notes of Mona Lisa Re is included in other investments. Net of third-party investors, the fair value of the Company's investment in Mona Lisa Re was $3.0 million at March 31, 2023 (December 31, 2022 - $5.7 million).

Fibonacci Re

Fibonacci Re provides collateralized capacity to Renaissance Reinsurance and its affiliates.

The Company concluded that Fibonacci Re meets the definition of a VIE as it does not have sufficient equity capital to finance its activities. The Company evaluated its relationship with Fibonacci Re and concluded it is not the primary beneficiary of Fibonacci Re as it does not have power over the activities that most significantly impact the economic performance of Fibonacci Re. As a result, the Company does not consolidate the financial position or results of operations of Fibonacci Re. The Company has not provided financial or other support to Fibonacci Re that it was not contractually required to provide.

Renaissance Reinsurance had no outstanding balances with Fibonacci Re as of March 31, 2023 and December 31, 2022, and there was no material impact on the Company's consolidated statements of operations for the three months ended March 31, 2023 and 2022.

Langhorne

The Company and Reinsurance Group of America, Incorporated formed Langhorne, an initiative to source third-party capital to support reinsurers targeting large in-force life and annuity blocks. In connection with Langhorne, as of March 31, 2023, the Company had invested $0.1 million in Langhorne Partners (December 31, 2022 - $0.1 million). Langhorne's capital commitment period expired at the end of December 2022 and the Langhorne entities are in the process of winding down. During the quarter ended March 31, 2023, the reinsurance entities of Langhorne Holdings were sold or dissolved, and all capital of Langhorne Holdings was distributed, including $1.5 million to the Company.

The Company concluded that Langhorne Holdings meets the definition of a VIE as the voting rights are not proportional with the obligations to absorb losses and rights to receive residual returns. The Company evaluated its relationship with Langhorne Holdings and concluded it is not the primary beneficiary of Langhorne Holdings, as it does not have power over the activities that most significantly impact the economic performance of Langhorne Holdings. As a result, the Company does not consolidate the financial position or results of operations of Langhorne Holdings. The Company separately evaluated Langhorne Partners and concluded that it was not a VIE. The Company accounts for its investments in Langhorne Holdings and Langhorne Partners under the equity method of accounting, one quarter in arrears.

The Company expects its absolute and relative ownership in Langhorne Partners to remain stable until the wind down concludes. Other than its current equity investment in Langhorne, the Company has not provided financial or other support to Langhorne that it was not contractually required to provide.

Shima Re

Shima Re was acquired on March 22, 2019 in connection with the acquisition of TMR. Shima Re is a Bermuda domiciled Class 3 insurer. Shima Re is registered as a segregated accounts company and provides third-party investors with access to reinsurance risk. The maximum remaining exposure of each segregated account is fully collateralized and is funded by cash or investments as prescribed by the participant thereto. Shima Re no longer writes new business and the last in-force contract written by Shima Re expired on December 31, 2019. The Company ceased providing management services to Shima Re effective December 1, 2020.

Shima Re is considered a VIE as it has voting rights that are not proportional to its participating rights. The Company evaluated its relationship with Shima Re and concluded it is not the primary beneficiary of any segregated account, as it does not have power over the activities that most significantly impact the economic performance of any segregated account. As a result, the Company does not consolidate the financial position or results of operations of Shima Re or its segregated accounts. The Company has not provided any financial or other support to any segregated account of Shima Re that it was not contractually required to provide.

Norwood Re

Until December 1, 2020, Norwood Re was managed by a subsidiary of RREAG that the Company acquired in the acquisition of TMR. Norwood Re is a Bermuda domiciled special purpose insurer registered as a segregated accounts company formed to provide solutions for reinsurance-linked asset investors. Norwood Re is wholly owned by the Norwood Re Purpose Trust. Risks assumed by the segregated accounts of Norwood Re were fronted by, or ceded from, only one cedant - RREAG and/or its insurance affiliates. The obligations of each segregated account are funded through the issuance of non-voting preference shares to third-party investors. The maximum exposure of each segregated account is fully collateralized and is funded by cash and term deposits or investments as prescribed by the participant thereto. Norwood Re no longer writes new business, and the last in-force contract written by Norwood Re expired on June 30, 2020. The Company ceased providing management services to Norwood Re effective December 1, 2020.

Norwood Re is considered a VIE as it has voting rights that are not proportional to its participating rights. The Company evaluated its relationship with Norwood Re and concluded it is not the primary beneficiary of Norwood Re and its segregated accounts, as it does not have power over the activities that most significantly impact the economic performance of Norwood Re and its segregated accounts. As a result, the Company does not consolidate the financial position or results of operations of Norwood Re and its segregated accounts. The Company has not provided any financial or other support to Norwood Re that it was not contractually required to provide.

Fund Investments

The Company’s fund investments represent variable interests in limited partnerships entities with unaffiliated fund managers in the normal course of business. Refer to “Note 4. Fair Value Measurements” for additional information.

NOTE 10. SHAREHOLDERS' EQUITY

Dividends

The Board of Directors of RenaissanceRe declared dividends of $0.38 per common share, payable to common shareholders of record on March 15, 2023, and the Company paid the dividends on March 31, 2023.

The Board of Directors approved the payment of quarterly dividends on each of the series of RenaissanceRe's preference shares to preference shareholders of record in the amounts and on the quarterly record dates and dividend payment dates set forth in the prospectus supplement and Certificate of Designation for the applicable series of preference shares, unless and until further action is taken by the Board of Directors. The dividend payment dates for the preference shares will be the first day of March, June, September and December of each year (or if this date is not a business day, on the business day immediately following this date). The record dates for the preference share dividends are one day prior to the dividend payment dates.

The amount of the dividend on the 5.750% Series F Preference Shares is an amount per share equal to 5.750% of the liquidation preference per annum (the equivalent to $1,437.50 per 5.750% Series F Preference Share per annum, or $359.375 per 5.750% Series F Preference Share per quarter, or $1.4375 per Depositary Share per annum, or $0.359375 per Depositary Share per quarter). The amount of the dividend on the 4.20% Series G Preference Shares is an amount per share equal to 4.20% of the liquidation preference per annum (the equivalent to $1,050 per 4.20% Series G Preference Share per annum, or $262.50 per 4.20% Series G Preference Share per quarter, or $1.05 per Depositary Share per annum, or $0.2625 per quarter).

During the three months ended March 31, 2023, the Company paid $8.8 million in preference share dividends (2022 - $8.8 million) and $16.6 million in common share dividends (2022 - $16.2 million).

Share Repurchases

The Company's share repurchase program may be effected from time to time, depending on market conditions and other factors, through open market purchases and privately negotiated transactions. On August 2, 2022, RenaissanceRe's Board of Directors approved a renewal of its authorized share repurchase program for an aggregate amount of up to $500.0 million. Unless terminated earlier by RenaissanceRe's Board of Directors, the program will expire when the Company has repurchased the full value of the common shares authorized. During the three months ended March 31, 2023, the Company did not repurchase common shares. At March 31, 2023, $500.0 million remained available for repurchase under the share repurchase program. In the future, the Company may authorize additional purchase activities under the currently authorized share repurchase program, increase the amount authorized under the share repurchase program, or adopt additional trading plans. The Company's decision to repurchase common shares will depend on, among other matters, the market price of the common shares and the capital requirements of the Company.

NOTE 11. EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per common share:

(common shares in thousands)	Three months ended March 31, 2023	Three months ended March 31, 2022
Numerator:		
Net income (loss) available (attributable) to RenaissanceRe common shareholders	$ 564,062	$ (394,413)
Amount allocated to participating common shareholders [1]	(8,854)	(235)
Net income (loss) allocated to RenaissanceRe common shareholders	$ 555,208	$ (394,648)
Denominator:		
Denominator for basic income (loss) per RenaissanceRe common share - weighted average common shares [2]	42,876	43,357
Per common share equivalents of non-vested shares [2]	130	—
Denominator for diluted income (loss) per RenaissanceRe common share - adjusted weighted average common shares and assumed conversions [2]	43,006	43,357
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – basic	$ 12.95	$ (9.10)
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	$ 12.91	$ (9.10)

(1) Represents earnings and dividends attributable to holders of unvested shares issued pursuant to the Company's stock compensation plans.

(2) In periods for which the Company has net loss allocated to RenaissanceRe common shareholders, the denominator used in calculating net loss attributable to RenaissanceRe common shareholders per common share - basic is also used in calculating net loss attributable to RenaissanceRe common shareholders per common share - diluted.

NOTE 12. SEGMENT REPORTING

The Company's reportable segments are defined as follows: (1) Property, which is comprised of catastrophe and other property (re)insurance written on behalf of the Company's consolidated operating subsidiaries, joint ventures and managed funds, and (2) Casualty and Specialty, which is comprised of casualty and specialty (re)insurance written on behalf of the Company's consolidated operating subsidiaries, joint ventures and managed funds. In addition to its reportable segments, the Company has an Other category, which primarily includes its investments unit, strategic investments, corporate expenses, capital servicing costs, noncontrolling interests and certain expenses related to acquisitions and dispositions.

The Company does not manage its assets by segment; accordingly, net investment income and total assets are not allocated to the segments.

A summary of the significant components of the Company's revenues and expenses by segment is as follows:

Three months ended March 31, 2023	Property	Casualty and Specialty	Other	Total
Gross premiums written	$ 1,304,199	$ 1,486,062	$ —	$ 2,790,261
Net premiums written	$ 1,019,829	$ 1,243,874	$ —	$ 2,263,703
Net premiums earned	$ 687,420	$ 993,130	$ —	$ 1,680,550
Net claims and claim expenses incurred	187,609	613,591	—	801,200
Acquisition expenses	145,319	286,938	—	432,257
Operational expenses	55,813	21,661	—	77,474
Underwriting income (loss)	$ 298,679	$ 70,940	$ —	369,619
Net investment income			254,378	254,378
Net foreign exchange gains (losses)			(14,503)	(14,503)
Equity in earnings of other ventures			9,530	9,530
Other income (loss)			(4,306)	(4,306)
Net realized and unrealized gains (losses) on investments			279,451	279,451
Corporate expenses			(12,843)	(12,843)
Interest expense			(12,134)	(12,134)
Income (loss) before taxes and redeemable noncontrolling interests				869,192
Income tax benefit (expense)			(28,902)	(28,902)
Net (income) loss attributable to redeemable noncontrolling interests			(267,384)	(267,384)
Dividends on preference shares			(8,844)	(8,844)
Net income (loss) available (attributable) to RenaissanceRe common shareholders				$ 564,062
Net claims and claim expenses incurred – current accident year	$ 269,302	$ 636,650	$ —	$ 905,952
Net claims and claim expenses incurred – prior accident years	(81,693)	(23,059)	—	(104,752)
Net claims and claim expenses incurred – total	$ 187,609	$ 613,591	$ —	$ 801,200
Net claims and claim expense ratio – current accident year	39.2 %	64.1 %		53.9 %
Net claims and claim expense ratio – prior accident years	(11.9)%	(2.3)%		(6.2)%
Net claims and claim expense ratio – calendar year	27.3 %	61.8 %		47.7 %
Underwriting expense ratio	29.3 %	31.1 %		30.3 %
Combined ratio	56.6 %	92.9 %		78.0 %

Three months ended March 31, 2022	Property	Casualty and Specialty	Other	Total
Gross premiums written	$ 1,343,508	$ 1,599,456	$ —	$ 2,942,964
Net premiums written	$ 890,166	$ 1,275,051	$ —	$ 2,165,217
Net premiums earned	$ 618,591	$ 867,834	$ —	$ 1,486,425
Net claims and claim expenses incurred	259,761	581,972	—	841,733
Acquisition expenses	127,096	249,411	—	376,507
Operational expenses	46,932	20,975	—	67,907
Underwriting income (loss)	$ 184,802	$ 15,476	$ —	200,278
Net investment income			83,691	83,691
Net foreign exchange gains (losses)			(15,486)	(15,486)
Equity in earnings of other ventures			(6,390)	(6,390)
Other income (loss)			1,193	1,193
Net realized and unrealized gains (losses) on investments			(673,017)	(673,017)
Corporate expenses			(12,502)	(12,502)
Interest expense			(11,955)	(11,955)
Income (loss) before taxes and redeemable noncontrolling interests				(434,188)
Income tax benefit (expense)			36,707	36,707
Net (income) loss attributable to redeemable noncontrolling interests			11,912	11,912
Dividends on preference shares			(8,844)	(8,844)
Net income (loss) available (attributable) to RenaissanceRe common shareholders				$ (394,413)
Net claims and claim expenses incurred – current accident year	$ 276,519	$ 583,047	$ —	$ 859,566
Net claims and claim expenses incurred – prior accident years	(16,758)	(1,075)	—	(17,833)
Net claims and claim expenses incurred – total	$ 259,761	$ 581,972	$ —	$ 841,733
Net claims and claim expense ratio – current accident year	44.7 %	67.2 %		57.8 %
Net claims and claim expense ratio – prior accident years	(2.7)%	(0.1)%		(1.2)%
Net claims and claim expense ratio – calendar year	42.0 %	67.1 %		56.6 %
Underwriting expense ratio	28.1 %	31.1 %		29.9 %
Combined ratio	70.1 %	98.2 %		86.5 %

NOTE 13. DERIVATIVE INSTRUMENTS

From time to time, the Company may enter into derivative instruments such as futures, options, swaps, forward contracts and other derivative contracts primarily to manage its foreign currency exposure, obtain exposure to a particular financial market, for yield enhancement, or for trading and to assume risk. The Company's derivative instruments can be exchange traded or over-the-counter, with over-the-counter derivatives generally traded under International Swaps and Derivatives Association master agreements, which establish the terms of the transactions entered into with the Company's derivative counterparties. In the event a party becomes insolvent or otherwise defaults on its obligations, a master agreement generally permits the non-defaulting party to accelerate and terminate all outstanding transactions and net the transactions' marked-to-market values so that a single sum in a single currency will be owed by, or owed to, the non-defaulting party. Effectively, this contractual close-out netting reduces credit exposure from gross to net exposure. Where the Company has entered into master netting agreements with counterparties, or the Company has the legal and contractual right to offset positions, the derivative positions are generally netted by counterparty and are reported accordingly in other assets and other liabilities.

The Company is not aware of the existence of any credit-risk related contingent features that it believes would be triggered in its derivative instruments that are in a net liability position at March 31, 2023.

The tables below show the gross and net amounts of recognized derivative assets and liabilities at fair value, including the location on the consolidated balance sheets of the Company's principal derivative instruments:

At March 31, 2023	Derivative Assets					
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Balance Sheet	Net Amounts of Assets Presented in the Balance Sheet	Balance Sheet Location	Collateral Received	Net Amount
Derivative instruments not designated as hedges						
Interest rate futures	$ 3,961	$ —	$ 3,961	Other assets	$ —	$ 3,961
Foreign currency forward contracts (1)	18,952	—	18,952	Other assets	—	18,952
Foreign currency forward contracts (2)	9,889	—	9,889	Other assets	—	9,889
Credit default swaps	37	—	37	Other assets	—	37
Total derivative instruments not designated as hedges	32,839	—	32,839		—	32,839
Derivative instruments designated as hedges						
Foreign currency forward contracts (3)	596	—	596	Other assets	—	596
Total	$ 33,435	$ —	$ 33,435		$ —	$ 33,435

At March 31, 2023	Derivative Liabilities					
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Balance Sheet	Net Amounts of Liabilities Presented in the Balance Sheet	Balance Sheet Location	Collateral Pledged	Net Amount
Derivative instruments not designated as hedges						
Interest rate futures	$ 3,475	$ —	$ 3,475	Other liabilities	$ 3,387	$ 88
Foreign currency forward contracts (1)	4,100	—	4,100	Other liabilities	—	4,100
Foreign currency forward contracts (2)	1,852	—	1,852	Other liabilities	—	1,852
Credit default swaps	5,650	—	5,650	Other liabilities	4,872	778
Equity futures	1,510	—	1,510	Other liabilities	1,510	—
Total derivative instruments not designated as hedges	16,587	—	16,587		9,769	6,818
Total	$ 16,587	$ —	$ 16,587		$ 9,769	$ 6,818

(1) Contracts used to manage foreign currency risks in underwriting and non-investment operations.
(2) Contracts used to manage foreign currency risks in investment operations.
(3) Contracts designated as hedges of net investments in a foreign operation.

At December 31, 2022	Derivative Assets					
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Balance Sheet	Net Amounts of Assets Presented in the Balance Sheet	Balance Sheet Location	Collateral Received	Net Amount
Derivative instruments not designated as hedges						
Interest rate futures	$ 387	$ —	$ 387	Other assets	$ —	$ 387
Foreign currency forward contracts (1)	31,755	—	31,755	Other assets	—	31,755
Foreign currency forward contracts (2)	11,866	—	11,866	Other assets	—	11,866
Credit default swaps	413	—	413	Other assets	—	413
Total derivative instruments not designated as hedges	44,421	—	44,421		—	44,421
Total	$ 44,421	$ —	$ 44,421		$ —	$ 44,421

At December 31, 2022	Derivative Liabilities					
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Balance Sheet	Net Amounts of Liabilities Presented in the Balance Sheet	Balance Sheet Location	Collateral Pledged	Net Amount
Derivative instruments not designated as hedges						
Interest rate futures	$ 1,685	$ —	$ 1,685	Other liabilities	$ 209	$ 1,476
Foreign currency forward contracts (1)	1,160	—	1,160	Other liabilities	—	1,160
Foreign currency forward contracts (2)	2,165	—	2,165	Other liabilities	—	2,165
Credit default swaps	1,055	—	1,055	Other liabilities	100	955
Equity futures	323	—	323	Other liabilities	—	323
Total derivative instruments not designated as hedges	6,388	—	6,388		309	6,079
Derivative instruments designated as hedges						
Foreign currency forward contracts (3)	1,193	—	1,193	Other liabilities	—	1,193
Total	$ 7,581	$ —	$ 7,581		$ 309	$ 7,272

(1) Contracts used to manage foreign currency risks in underwriting and non-investment operations.

(2) Contracts used to manage foreign currency risks in investment operations.

(3) Contracts designated as hedges of net investments in a foreign operation.

The location and amount of the gain (loss) recognized in the Company's consolidated statements of operations related to its principal derivative instruments are shown in the following table:

Three months ended March 31,	Location of gain (loss) recognized on derivatives	Amount of gain (loss) recognized on derivatives 2023	2022
Derivative instruments not designated as hedges			
Interest rate futures (1)	Net realized and unrealized gains (losses) on investments	$ 25,483	$ (28,787)
Foreign currency forward contracts (2)	Net foreign exchange gains (losses)	4,745	(21,142)
Foreign currency forward contracts (3)	Net foreign exchange gains (losses)	(3,680)	(1,891)
Credit default swaps (1)	Net realized and unrealized gains (losses) on investments	(11,954)	(4,137)
Equity futures (4)	Net realized and unrealized gains (losses) on investments	(1,367)	(7,364)
Total derivative instruments not designated as hedges		13,227	(63,321)
Derivative instruments designated as hedges			
Foreign currency forward contracts (5)	Accumulated other comprehensive income (loss)	948	(3,027)
Total		$ 14,175	$ (66,348)

(1) Fixed income related derivatives included in net realized and unrealized gains (losses) on investment-related derivatives. See "Note 3. Investments" for additional information.

(2) Contracts used to manage foreign currency risks in underwriting and non-investment operations.

(3) Contracts used to manage foreign currency risks in investment operations.

(4) Equity related derivatives included in net realized and unrealized gains (losses) on investment-related derivatives. See "Note 3. Investments" for additional information.

(5) Contracts designated as hedges of net investments in a foreign operation.

Derivative Instruments Not Designated as Hedges

Interest Rate Derivatives

The Company uses interest rate futures and swaps within its portfolio of fixed maturity investments to manage its exposure to interest rate risk, which may result in increasing or decreasing its exposure to this risk.

Interest Rate Futures

The fair value of interest rate futures is determined using exchange traded prices. At March 31, 2023, the Company had $2.7 billion of notional long positions and $1.0 billion of notional short positions of primarily U.S. treasury futures contracts (December 31, 2022 - $2.4 billion and $0.5 billion, respectively).

Foreign Currency Derivatives

The Company's functional currency is the U.S. dollar. The Company writes a portion of its business in currencies other than U.S. dollars and may, from time to time, experience foreign exchange gains and losses in the Company's consolidated financial statements. The impact of changes in exchange rates on the Company's assets and liabilities denominated in currencies other than the U.S. dollar, excluding non-monetary assets and liabilities, are recognized in the Company's consolidated statements of operations.

Underwriting and Non-investments Operations Related Foreign Currency Contracts

The Company's foreign currency policy with regard to its underwriting operations is generally to enter into foreign currency forward and option contracts for notional values that approximate the foreign currency liabilities, including claims and claim expense reserves and reinsurance balances payable, net of any cash, investments and receivables held in the respective foreign currency. The Company's use of foreign currency forward and option contracts is intended to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities associated with its underwriting operations. The Company may determine not to match a portion of its projected underwriting related assets or liabilities with underlying foreign currency exposure with investments in the same currencies, which would increase its exposure to foreign currency fluctuations and potentially increase the impact and volatility of foreign exchange gains and losses on its results of operations. The fair value of the Company's underwriting operations related foreign currency contracts is determined using indicative pricing obtained from counterparties or broker quotes. At March 31, 2023, the Company had outstanding underwriting related foreign currency contracts of $821.0 million in notional long positions and $262.1 million in notional short positions, denominated in U.S. dollars (December 31, 2022 - $861.7 million and $172.4 million, respectively).

Investment Portfolio Related Foreign Currency Forward Contracts

The Company's investment operations are exposed to currency fluctuations through its investments in non-U.S. dollar fixed maturity investments, short term investments and other investments. From time to time, the Company may employ foreign currency forward contracts in its investment portfolio to either assume foreign currency risk or to economically hedge its exposure to currency fluctuations from these investments. The fair value of the Company's investment portfolio related foreign currency forward contracts is determined using an interpolated rate based on closing forward market rates. At March 31, 2023, the Company had outstanding investment portfolio related foreign currency contracts of $416.3 million in notional long positions and $161.3 million in notional short positions, denominated in U.S. dollars (December 31, 2022 - $225.6 million and $86.3 million, respectively).

Credit Derivatives

The Company's exposure to credit risk is primarily due to its fixed maturity investments, short term investments, premiums receivable and reinsurance recoverable. From time to time, the Company may purchase credit derivatives to manage its exposures in the insurance industry, and to assist in managing the credit risk associated with ceded reinsurance. The Company also employs credit derivatives in its investment portfolio to either assume credit risk or manage its credit exposure.

Credit Default Swaps

The fair value of the Company's credit default swaps is determined using industry valuation models, broker bid indications or internal pricing valuation techniques. The fair value of these credit default swaps can change based on a variety of factors including changes in credit spreads, default rates and recovery rates, the correlation of credit risk between the referenced credit and the counterparty, and market rate inputs such as interest rates. At March 31, 2023, the Company had outstanding credit default swaps of $1.3 billion in notional positions to hedge credit risk and $13.4 million in notional positions to assume credit risk, denominated in U.S. dollars (December 31, 2022 - $953.4 million and $13.1 million, respectively).

Equity Derivatives

Equity Futures

From time to time, the Company uses equity derivatives in its investment portfolio to either assume equity risk or hedge its equity exposure. The fair value of the Company's equity futures is determined using market-based prices from pricing vendors. At March 31, 2023, the Company had a $108.2 million notional short position of equity futures, denominated in U.S. dollars (December 31, 2022 - $116.0 million notional long position).

Derivative Instruments Designated as Hedges of Net Investments in Foreign Operations

Foreign Currency Derivatives

Hedges of Net Investments in Foreign Operations

One of the Company's subsidiaries currently uses a non-U.S. dollar functional currency. The Company, from time to time, enters into foreign exchange forwards to hedge non-U.S. dollar functional currencies, on an after-tax basis, from changes in the exchange rate between the U.S. dollar and these currencies. As of March 31, 2023 and 2022, this included the Australian dollar net investment in a foreign operation. These foreign exchange forward contracts were formally designated as hedges of its investment in subsidiaries with non-U.S. dollar functional currencies and there was no ineffectiveness in these transactions.

The table below provides a summary of derivative instruments designated as hedges of net investments in a foreign operation, including the weighted average U.S. dollar equivalent of foreign denominated net (liabilities) assets that were hedged and the resulting derivative gains (losses) that are recorded in foreign currency translation adjustments, net of tax, within accumulated other comprehensive income (loss) on the Company's consolidated statements of changes in shareholders' equity:

	Three months ended	
	March 31, 2023	March 31, 2022
Weighted average of U.S. dollar equivalent of foreign denominated net assets (liabilities)	$ 60,342	$ 90,271
Derivative gains (losses) [1]	$ 948	$ (3,027)

(1) Derivative gains (losses) from derivative instruments designated as hedges of the net investment in a foreign operation are recorded in foreign currency translation adjustments, net of tax, within accumulated other comprehensive income (loss) on the Company's consolidated statements of changes in shareholders' equity.

NOTE 14. COMMITMENTS, CONTINGENCIES AND OTHER ITEMS

There are no material changes from the commitments, contingencies and other items previously disclosed in the Company's Form 10-K for the year ended December 31, 2022.

Legal Proceedings

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

NOTE 15. SUBSEQUENT EVENTS

Effective April 1, 2023, RenaissanceRe purchased an aggregate of $27.3 million of shares in DaVinci from third-party investors. The Company’s noncontrolling economic ownership in DaVinci subsequent to this transaction was 26.3%, effective April 1, 2023.

Subsequent to March 31, 2023, Medici completed equity capital raises totaling $155.9 million, comprised of $145.9 million from third-party investors and $10.0 million from RenaissanceRe. The Company’s noncontrolling economic ownership in Medici subsequent to these transactions was 10.4%, effective May 1, 2023.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is a discussion and analysis of our results of operations for the three months ended March 31, 2023 and 2022, as well as our liquidity and capital resources at March 31, 2023. This discussion and analysis should be read in conjunction with the unaudited consolidated financial statements and notes thereto included in this filing and the audited consolidated financial statements and notes thereto contained in our Form 10-K for the fiscal year ended December 31, 2022. This filing contains forward-looking statements that involve risks and uncertainties. Actual results may differ materially from the results described or implied by these forward-looking statements. See "Note on Forward-Looking Statements."

In this Form 10-Q, references to "RenaissanceRe" refer to RenaissanceRe Holdings Ltd. (the parent company) and references to "we," "us," "our" and the "Company" refer to RenaissanceRe Holdings Ltd. together with its subsidiaries, unless the context requires otherwise. Defined terms used throughout this Form 10-Q are included in the "Glossary of Defined Terms" at the beginning of this Form 10-Q.

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

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

INDEX TO MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

OVERVIEW

RenaissanceRe is a global provider of reinsurance and insurance that specializes in matching well-structured risks with efficient sources of capital. We provide property, casualty and specialty reinsurance and certain insurance solutions to customers, principally through intermediaries. Established in 1993, we have offices in Bermuda, Australia, Ireland, Singapore, Switzerland, the U.K., and the U.S. We are one of the world's leading providers of property and, casualty and specialty reinsurance.

Our mission is to match desirable, well-structured risks with efficient sources of capital to achieve our vision of being the best underwriter. We believe that this will allow us to produce superior returns for our shareholders over the long term, and to further our purpose of protecting communities and enabling prosperity. We seek to accomplish these goals by (i) being a trusted, long-term partner to our customers for assessing and managing risk, (ii) delivering responsive and innovative solutions, (iii) leveraging our core capabilities of risk assessment and information management, (iv) investing in these core capabilities in order to serve our customers across market cycles, and (v) keeping our promises.

Our core products include property, casualty and specialty reinsurance, and certain insurance products, principally distributed through intermediaries with whom we have cultivated strong long-term relationships. Our business consists of the following reportable segments: (1) Property, which is comprised of catastrophe and other property (re)insurance, and (2) Casualty and Specialty, which is comprised of casualty and specialty (re)insurance. The underwriting results of our consolidated operating subsidiaries and underwriting platforms are included in our Property and Casualty and Specialty segment results as appropriate.

Our strategy focuses on operating as an integrated system of three competitive advantages: superior risk selection, superior customer relationships and superior capital management. We provide value to our customers and partners in the form of financial security, innovative products, and responsive service. We are known as a leader in paying valid claims promptly.

There are three principal drivers of profit that generate diversified earnings streams for our business - underwriting income, fee income, and investment income. Underwriting income is the income that we earn from our core underwriting business. By accepting the volatility that this business brings, we believe that we can generate superior long-term returns and achieve our vision. Fee income is the income that we earn primarily from managing third-party capital in our Capital Partners unit, and is composed of management fee income and performance fee income. Investment income is income derived from the investment portfolio that we maintain to support our business. We take a disciplined approach in building a relatively conservative, well-structured investment portfolio with a focus on fixed income investments. Compared to underwriting income, we view fee income, in particular management fee income, and investment income, as relatively stable, less volatile, and capital efficient sources of income.

We principally measure our financial success through long-term growth in tangible book value per common share plus the change in accumulated dividends. We believe this metric is the most appropriate measure of our financial performance, and in respect of which we believe we have delivered superior performance over time.

Our current business strategy focuses predominantly on writing reinsurance, although we also write excess and surplus lines insurance through delegated authority arrangements. Additionally, we pursue a number of other opportunities, such as creating and managing our joint ventures and managed funds, executing customized reinsurance transactions to assume or cede risk, and managing certain strategic investments directed at classes of risk other than catastrophe reinsurance. From time to time we consider diversification into new ventures, either through organic growth, the formation of new joint ventures or managed funds, or the acquisition of, or the investment in, other companies or books of business of other companies.

We continually explore appropriate and efficient ways to address the risk needs of our clients and the impact of various regulatory and legislative changes on our operations. We have created, and manage, multiple capital vehicles across several jurisdictions and may create additional risk bearing vehicles or enter into additional jurisdictions in the future. In addition, our differentiated strategy and capabilities position us to pursue bespoke or large solutions for clients.

Revenues and Expenses

Our revenues are principally derived from three sources: (1) net premiums earned from the reinsurance and insurance policies we sell; (2) net investment income and net realized and unrealized gains from the investment of our capital funds and the investment of the cash we receive on the policies which we sell; and (3) fees received from our joint ventures, managed funds and structured reinsurance products, which are primarily reflected in redeemable non-controlling interest or as an offset to acquisition or operating expenses.

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

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

We manage DaVinci, Fontana, Medici, and Vermeer, and own all, or a majority, of the voting interests, but own no, or a minority, economic interest of each. As a result of our controlling voting interests, we fully consolidate these entities in our financial statements, even though we do not retain the full value of economic outcomes generated by these entities. The portions of the economic outcomes that are not retained by us are ultimately allocated to the third-party investors who hold the non-controlling interests in these entities. The economic outcomes may include underwriting results, investments results, and foreign exchange impacts, among other items. For example, if one of these entities were to generate underwriting losses due to a natural catastrophe, the full amount would be reflected in net income (loss) on our consolidated statements of operations, but ultimately we would only retain a portion of that amount in our net income (loss) attributable to RenaissanceRe. In the Company’s consolidated balance sheets and consolidated statements of operations, we allocate the portion of these items attributable to third parties in the “Net (income) loss attributable to redeemable noncontrolling interests” line item. Refer to “Note 8. Noncontrolling Interests” in our “Notes to the Consolidated Financial Statements” for additional information regarding our redeemable noncontrolling interests and how this accounting treatment impacts the Company’s financial results.

Effects of Inflation

General economic inflation has increased and there is a risk of inflation remaining elevated for an extended period, which could cause claims and claim expenses to increase, impact the performance of our investment portfolio or have other adverse effects. This risk may have been exacerbated by the steps taken by governments and central banks throughout the world in responding to the COVID-19 pandemic, the impact from the war in Ukraine and global supply chain issues. More recently, many central banks have begun to raise interest rates, which could act as a countervailing force against some of these inflationary pressures. 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. The duration and severity of an inflationary period cannot be estimated with precision. We consider the anticipated effects of inflation on us in our catastrophe loss models and on our investment portfolio. Our estimates of the potential effects of inflation are also considered in pricing and in estimating reserves for unpaid claims and claim expenses.

The potential exists, after a catastrophe loss, for the development of inflationary pressures in a local economy.

SUMMARY OF CRITICAL ACCOUNTING ESTIMATES

Our critical accounting estimates include “Claims and Claim Expense Reserves,” “Premiums and Related Expenses,” “Reinsurance Recoverables,” “Fair Value Measurements and Impairments” and “Income Taxes,” and are discussed in Management’s Discussion and Analysis of Financial Condition and Results of Operations in our Form 10-K for the year ended December 31, 2022. There have been no material changes to our critical accounting estimates as disclosed in our Form 10-K for the year ended December 31, 2022.

SUMMARY OF RESULTS OF OPERATIONS

Below is a discussion of the results of operations for the first quarter of 2023, compared to the first quarter of 2022.

Three months ended March 31,	2023	2022	Change
(in thousands, except per share amounts and percentages)			
Statement of operations highlights			
Gross premiums written	$ 2,790,261	$ 2,942,964	$ (152,703)
Net premiums written	$ 2,263,703	$ 2,165,217	$ 98,486
Net premiums earned	$ 1,680,550	$ 1,486,425	$ 194,125
Net claims and claim expenses incurred	801,200	841,733	(40,533)
Acquisition expenses	432,257	376,507	55,750
Operational expenses	77,474	67,907	9,567
Underwriting income (loss)	$ 369,619	$ 200,278	$ 169,341
Net investment income	$ 254,378	$ 83,691	$ 170,687
Net realized and unrealized gains (losses) on investments	279,451	(673,017)	952,468
Total investment result	$ 533,829	$ (589,326)	$ 1,123,155
Net income (loss)	$ 840,290	$ (397,481)	$ 1,237,771
Net income (loss) available (attributable) to RenaissanceRe common shareholders	$ 564,062	$ (394,413)	$ 958,475
Net income (loss) available (attributable) to RenaissanceRe common shareholders per common share – diluted	$ 12.91	$ (9.10)	$ 22.01
Dividends per common share	$ 0.38	$ 0.37	$ 0.01
Key ratios			
Net claims and claim expense ratio – current accident year	53.9 %	57.8 %	(3.9)%
Net claims and claim expense ratio – prior accident years	(6.2)%	(1.2)%	(5.0)%
Net claims and claim expense ratio – calendar year	47.7 %	56.6 %	(8.9)%
Underwriting expense ratio	30.3 %	29.9 %	0.4 %
Combined ratio	78.0 %	86.5 %	(8.5)%
Return on average common equity - annualized	46.6 %	(28.1)%	74.7 %
Book value	March 31, 2023	December 31, 2022	Change
Book value per common share	$ 116.44	$ 104.65	$ 11.79
Accumulated dividends per common share	25.38	25.00	0.38
Book value per common share plus accumulated dividends	$ 141.82	$ 129.65	$ 12.17
Change in book value per common share plus change in accumulated dividends	11.6 %		

Net income available to RenaissanceRe common shareholders was $564.1 million in the first quarter of 2023, compared to net loss attributable to RenaissanceRe common shareholders of $394.4 million in the first quarter of 2022, an increase of $958.5 million. As a result of our net income available to RenaissanceRe common shareholders in the first quarter of 2023, we generated an annualized return on average common equity of 46.6% and our book value per common share increased from $104.65 at December 31, 2022 to $116.44 at March 31, 2023, an 11.6% increase, after considering the change in accumulated dividends paid to our common shareholders.

The most significant items affecting our financial performance during the first quarter of 2023, on a comparative basis to the first quarter of 2022, include:

- *Underwriting Results* - we generated underwriting income of $369.6 million and had a combined ratio of 78.0% in the first quarter of 2023, compared to underwriting income of $200.3 million and a combined ratio of 86.5% in the first quarter of 2022. Our underwriting income in the first quarter of 2023 was comprised of our Property segment, which generated underwriting income of $298.7 million and had a combined ratio of 56.6%, and our Casualty and Specialty segment, which generated underwriting income of $70.9 million and had a combined ratio of 92.9%. In comparison, our underwriting income in the first quarter of 2022 was comprised of our Property segment, which generated an underwriting income of $184.8 million, and our Casualty and Specialty segment, which generated underwriting income of $15.5 million;

  Our underwriting results in the first quarter of 2023 were impacted by the Q1 2023 Large Loss Events (as defined below), which resulted in a net negative impact on the underwriting result of $79.1 million and added 4.7 percentage points to the consolidated combined ratio, all in the Property segment. The first quarter of 2022 was impacted by the Q1 2022 Weather-Related Large Losses (as defined below), which resulted in a net negative impact on the underwriting result of $102.3 million and added 7.0 percentage points to the consolidated combined ratio, all in the Property segment. In addition, in the first quarter of 2022, losses from the Russia-Ukraine War had a net negative impact on the underwriting result of $27.1 million and added 1.8 percentage points to the consolidated combined ratio, all in the Casualty and Specialty segment;

- *Investment Results* - our total investment result, which includes the sum of net investment income and net realized and unrealized gains (losses) on investments, was income of $533.8 million in the first quarter of 2023, compared to a loss of $589.3 million in the first quarter of 2022. The primary driver of the higher total investment result was net realized and unrealized gains on investments of $279.5 million, principally within fixed maturity investments trading, due to the fall in U.S. treasury interest rates in the first quarter of 2023, as well as net investment income of $254.4 million, driven by higher yielding assets in the fixed maturity and short term portfolios as a result of our reinvestment of the portfolio during the rising interest rate environment throughout 2022. The investment result in the first quarter of 2022 was impacted by net realized and unrealized losses on investments of $673.0 million, principally within our fixed maturity and equity investments trading portfolios;

- *Net Income Attributable to Redeemable Noncontrolling Interests* - our net income attributable to redeemable noncontrolling interests was $267.4 million in the first quarter of 2023, compared to a net loss attributable to redeemable noncontrolling interest of $11.9 million in the first quarter of 2022. Net income attributable to redeemable noncontrolling interests in the first quarter of 2023 was primarily driven by underwriting income generated by DaVinci and Vermeer, net investment income resulting from higher interest rates and yields within the investment portfolios of the Company’s joint ventures and managed funds, and net realized and unrealized gains on investments;

- *Gross Premiums Written* - our gross premiums written decreased by $152.7 million, or 5.2%, to $2.8 billion, in the first quarter of 2023, compared to the first quarter of 2022. This was comprised of a decrease of $113.4 million in our Casualty and Specialty segment and a decrease of $39.3 million in our Property segment; and

- *Impact of Large Loss Events* - we had a net negative impact on net income available to RenaissanceRe common shareholders of $53.5 million resulting from the Q1 2023 Large Loss Events. This compares to a net negative impact on net loss attributable to RenaissanceRe common shareholders of $67.9 million resulting from the Q1 2022 Weather-Related Large Losses.

Net Negative Impact

Net negative impact on underwriting result includes the sum of (1) net claims and claim expenses incurred, (2) assumed and ceded reinstatement premiums earned and (3) earned and lost profit commissions. Net negative impact on net income (loss) available (attributable) to RenaissanceRe common shareholders is the sum of (1) net negative impact on underwriting result and (2) redeemable noncontrolling interest, both before consideration of any related income tax benefit (expense).

Our estimates of net negative impact are based on a review of our potential exposures, preliminary discussions with certain counterparties and actuarial modeling techniques. Our actual net negative impact, both individually and in the aggregate, may vary from these estimates, perhaps materially. Changes in these estimates will be recorded in the period in which they occur.

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

The financial data below provides additional information detailing the net negative impact on our consolidated financial statements in the first quarter of 2023 from the Q1 2023 Large Loss Events.

Three months ended March 31, 2023	**Q1 2023 Large Loss Events [(1)]**
(in thousands)	
Net claims and claims expenses incurred	$ (81,478)
Assumed reinstatement premiums earned	3,124
Ceded reinstatement premiums earned	—
Earned (lost) profit commissions	(701)
Net negative impact on underwriting result	(79,055)
Redeemable noncontrolling interest	25,517
Net negative impact on net income (loss) available (attributable) to RenaissanceRe common shareholders	$ (53,538)

The financial data below provides additional information detailing the net negative impact of the Q1 2023 Large Loss Events on our segment underwriting results and consolidated combined ratio in the first quarter of 2023.

Three months ended March 31, 2023	**Q1 2023 Large Loss Events [(1)]**
(in thousands, except percentages)	
Net negative impact on Property segment underwriting result	$ (79,055)
Net negative impact on Casualty and Specialty segment underwriting result	—
Net negative impact on underwriting result	$ (79,055)
Percentage point impact on consolidated combined ratio	4.7

(1) “Q1 2023 Large Loss Events” includes the earthquakes which impacted southern and central Turkey in February 2023, Cyclone Gabrielle which impacted northern New Zealand, the flooding that impacted northern New Zealand in January and February 2023, and various wind and thunderstorm events which impacted states in both the Southern and Midwest U.S. during March 2023.

The financial data below provides additional information detailing the net negative impact on our consolidated financial statements in the first quarter of 2022 from the Q1 2022 Weather-Related Large Losses.

Three months ended March 31, 2022		**Q1 2022 Weather-Related Large Losses (1)**
(in thousands)		
Net claims and claims expenses incurred	$	(112,933)
Assumed reinstatement premiums earned		10,967
Ceded reinstatement premiums earned		(299)
Earned (lost) profit commissions		—
Net negative impact on underwriting result		(102,265)
Redeemable noncontrolling interest		34,347
Net negative impact on net loss attributable to RenaissanceRe common shareholders	$	(67,918)

The financial data below provides additional information detailing the net negative impact of the Q1 2022 Weather-Related Large Losses on our segment underwriting results and consolidated combined ratio in the first quarter of 2022.

Three months ended March 31, 2022		**Q1 2022 Weather-Related Large Losses (1)**
(in thousands, except percentages)		
Net negative impact on Property segment underwriting result	$	(102,265)
Net negative impact on Casualty and Specialty segment underwriting result		—
Net negative impact on underwriting result	$	(102,265)
Percentage point impact on consolidated combined ratio		7.0

(1) "Q1 2022 Weather-Related Large Losses" includes the Australian Floods which impacted Eastern Australia in February and March 2022, and Storm Eunice which impacted several areas in Europe in February 2022.

Russia-Ukraine War Losses

In the first quarter of 2022, losses related to Russia's invasion of Ukraine resulted in a net negative impact on net income (loss) available (attributable) to RenaissanceRe common shareholders of $24.9 million. This reflects net claims and claims expenses incurred and a net negative impact on underwriting result of $27.1 million, which was solely in the Casualty and Specialty segment, partially offset by redeemable noncontrolling interest of $2.2 million. The net negative impact on underwriting result had a 1.8 percentage point impact on the consolidated combined ratio for the first quarter of 2022.

Underwriting Results by Segment

Property Segment

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

Three months ended March 31, (in thousands, except percentages)	2023	2022	Change
Gross premiums written	$ 1,304,199	$ 1,343,508	$ (39,309)
Net premiums written	$ 1,019,829	$ 890,166	$ 129,663
Net premiums earned	$ 687,420	$ 618,591	$ 68,829
Net claims and claim expenses incurred	187,609	259,761	(72,152)
Acquisition expenses	145,319	127,096	18,223
Operational expenses	55,813	46,932	8,881
Underwriting income (loss)	$ 298,679	$ 184,802	$ 113,877
Net claims and claim expenses incurred – current accident year	$ 269,302	$ 276,519	$ (7,217)
Net claims and claim expenses incurred – prior accident years	(81,693)	(16,758)	(64,935)
Net claims and claim expenses incurred – total	$ 187,609	$ 259,761	$ (72,152)
Net claims and claim expense ratio – current accident year	39.2 %	44.7 %	(5.5)%
Net claims and claim expense ratio – prior accident years	(11.9)%	(2.7)%	(9.2)%
Net claims and claim expense ratio – calendar year	27.3 %	42.0 %	(14.7)%
Underwriting expense ratio	29.3 %	28.1 %	1.2 %
Combined ratio	56.6 %	70.1 %	(13.5)%

Property Gross Premiums Written

In the first quarter of 2023, our Property segment gross premiums written decreased by $39.3 million, or 2.9%, to $1.3 billion, compared to the first quarter of 2022.

Gross premiums written in the catastrophe class of business were $928.6 million in the first quarter of 2023, an increase of $42.5 million, or 4.8%, compared to the first quarter of 2022. This increase was principally driven by rate improvements on deals written in the first quarter of 2023, partially offset by a reduction in gross reinstatement premiums and the non-renewal of deals written on our Upsilon RFO balance sheet, compared to the first quarter of 2022. In the first quarter of 2023 there was a reduction in gross reinstatement premiums of $26.4 million in the catastrophe class of business, compared to an increase of $23.1 million in the first quarter of 2022, resulting in a decrease in gross reinstatement premiums of $49.5 million compared to the first quarter of 2022.

Gross premiums written in the other property class of business were $375.6 million in the first quarter of 2023, a decrease of $81.8 million, or 17.9%, compared to the first quarter of 2022. The decrease in gross premiums written in the other property class of business was principally due to the non-renewal of certain catastrophe exposed quota share programs that did not meet our return hurdles, partially offset by growth and rate improvement across other areas of business.

Property Ceded Premiums Written

Three months ended March 31, (in thousands)	2023	2022	Change
Ceded premiums written	$ 284,370	$ 453,342	$ (168,972)

Ceded premiums written in our Property segment were $284.4 million in the first quarter of 2023, a decrease of $169.0 million, or 37.3%, compared to the first quarter of 2022. The decrease in ceded premiums written was primarily driven by a reduction of $122.7 million in premiums ceded to Upsilon RFO third-party investors following a reduction in the size of Upsilon Fund, with a corresponding decrease in gross premiums written, as discussed above, as well as an overall reduction in ceded premiums written due to lower levels of retrocessional purchases as a part of our gross-to-net strategy.

We purchase reinsurance to reduce our exposure to large losses and to help manage our risk portfolio. To the extent that appropriately priced coverage is available, we anticipate continued use of retrocessional reinsurance to reduce the impact of large losses on our financial results and to manage our portfolio of risk.

Property Net Premiums Written

Three months ended March 31, (in thousands)	2023	2022	Change
Net premiums written	$ 1,019,829	$ 890,166	$ 129,663

Net premiums written in our Property segment were $1.0 billion in the first quarter of 2023, an increase of $129.7 million, or 14.6%, compared to the first quarter of 2022. The increase in net premiums written is driven by rate improvements, combined with a reduction in the ceded premiums written, as discussed above. This increase was partially offset by the reduction in gross premiums written in the other property class of business. Included in net premiums written in the first quarter of 2023 was a reduction in net reinstatement premiums of $27.5 million as compared to an increase of $23.5 million in the first quarter of 2022, resulting in a decrease in net reinstatement premiums of $51.0 million compared to the first quarter of 2022, primarily within the catastrophe class of business.

Property Underwriting Results

Our Property segment generated underwriting income of $298.7 million in the first quarter of 2023, compared to underwriting income of $184.8 million in the first quarter of 2022. In the first quarter of 2023, our Property segment generated a net claims and claim expense ratio of 27.3%, an underwriting expense ratio of 29.3% and a combined ratio of 56.6%, compared to 42.0%, 28.1% and 70.1%, respectively, in the first quarter of 2022.

Impacting the underwriting result and combined ratio in the first quarter of 2023 were the Q1 2023 Large Loss Events, which resulted in a net negative impact on the Property segment underwriting result of $79.1 million and added 11.8 percentage points to the Property segment combined ratio, reflecting impacts in both the catastrophe and other property classes of business. In comparison, the first quarter of 2022 was principally impacted by the Q1 2022 Weather-Related Large Losses, which resulted in a net negative impact on the Property segment underwriting result of $102.3 million and added 17.3 percentage points to the Property segment combined ratio.

The net claims and claim expense ratio of 27.3% is comprised of a current accident year net claims and claim expense ratio of 39.2% and 11.9 percentage points of prior accident year net favorable development. In comparison, the first quarter of 2022 had a net claims and claim expense ratio of 42.0%, comprised of a current accident year net claims and claim expense ratio of 44.7% and 2.7 percentage points of prior accident year net favorable development. The decrease of 5.5 percentage points in the current accident year net claims and claim expense ratio is primarily a result of the lower impact from the Q1 2023 Large Loss Events as compared to the Q1 2022 Weather-Related Large Losses. The Q1 2023 Large Loss Events contributed 11.7 percentage points to the current accident year net claims and claim expense ratio, compared to the weather-related large losses in the first quarter of 2022, which contributed 17.8 percentage points to the current accident year net claims and claim expense ratio.

The underwriting expense ratio increased 1.2 percentage points, primarily driven by the reduction in reinstatement premiums discussed above.

See "Note 6. Reserve for Claims and Claim Expenses" in our "Notes to the Consolidated Financial Statements" for additional information related to the development of prior accident years net claims and claim expenses.

Casualty and Specialty Segment

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

Three months ended March 31, (in thousands, except percentages)	2023	2022	Change
Gross premiums written	$ 1,486,062	$ 1,599,456	$ (113,394)
Net premiums written	$ 1,243,874	$ 1,275,051	$ (31,177)
Net premiums earned	$ 993,130	$ 867,834	$ 125,296
Net claims and claim expenses incurred	613,591	581,972	31,619
Acquisition expenses	286,938	249,411	37,527
Operational expenses	21,661	20,975	686
Underwriting income (loss)	$ 70,940	$ 15,476	$ 55,464
Net claims and claim expenses incurred – current accident year	$ 636,650	$ 583,047	$ 53,603
Net claims and claim expenses incurred – prior accident years	(23,059)	(1,075)	(21,984)
Net claims and claim expenses incurred – total	$ 613,591	$ 581,972	$ 31,619
Net claims and claim expense ratio – current accident year	64.1 %	67.2 %	(3.1)%
Net claims and claim expense ratio – prior accident years	(2.3)%	(0.1)%	(2.2)%
Net claims and claim expense ratio – calendar year	61.8 %	67.1 %	(5.3)%
Underwriting expense ratio	31.1 %	31.1 %	— %
Combined ratio	92.9 %	98.2 %	(5.3)%

Casualty and Specialty Gross Premiums Written

In the first quarter of 2023, our Casualty and Specialty segment gross premiums written decreased by $113.4 million, or 7.1% reflecting decreases in casualty classes of business, principally in professional liability, and partially offset by growth in the other specialty class of business. The decrease in gross premiums written principally reflects the impact of changes in premium estimates for business underwritten in prior years.

During the first quarter of 2023, gross premiums written included positive changes in premium estimates of $48.3 million on business underwritten in 2022 and prior years, compared to the first quarter of 2022, which included $224.5 million on business underwritten in 2021 and prior years. These changes in premium estimates occurred across all lines of business, but principally in general casualty and professional liability classes, and largely reflect the positive rate environment experienced in recent prior periods.

The majority of our Casualty and Specialty segment premiums consists of proportional business. Our relative mix of business between proportional business and excess of loss business has fluctuated in the past and will likely continue to do so in the future. Proportional business typically has a higher expense ratio and tends to be exposed to more attritional and frequent losses, while being subject to less expected severity as compared to traditional excess of loss business.

Casualty and Specialty Ceded Premiums Written

Three months ended March 31, (in thousands)	2023	2022	Change
Ceded premiums written	$ 242,188	$ 324,405	$ (82,217)

Ceded premiums written in our Casualty and Specialty segment decreased by $82.2 million, to $242.2 million in the first quarter of 2023, compared to $324.4 million in the first quarter of 2022, primarily driven by the decrease in gross premiums written subject to our retrocessional quota share reinsurance programs, in addition to an overall reduction in our retrocessional purchases as part of our gross-to-net strategy.

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

Casualty and Specialty Net Premiums Written

Three months ended March 31, (in thousands)	2023	2022	Change
Net premiums written	$ 1,243,874	$ 1,275,051	$ (31,177)

Net premiums written in our Casualty and Specialty segment decreased by $31.2 million, or 2.4%, to $1.2 billion in the first quarter of 2023, compared to $1.3 billion in the first quarter of 2022, consistent with the changes in gross and ceded premiums written.

Casualty and Specialty Underwriting Results

Our Casualty and Specialty segment generated underwriting income of $70.9 million in the first quarter of 2023, compared to underwriting income of $15.5 million in the first quarter of 2022. In the first quarter of 2023, our Casualty and Specialty segment generated a net claims and claim expense ratio of 61.8%, an underwriting expense ratio of 31.1% and a combined ratio of 92.9%, compared to 67.1%, 31.1% and 98.2%, respectively, in the first quarter of 2022.

The decrease in the Casualty and Specialty segment combined ratio in the first quarter of 2023 was primarily driven by the decrease of 5.3 percentage points in the net claims and claims expense ratio, principally due to the impact of the Russia-Ukraine War in 2022, which contributed 3.1 percentage points in the first quarter of 2022. Additionally, our Casualty and Specialty segment experienced net favorable development on prior accident years net claims and claim expenses of $23.1 million, or 2.3 percentage points, during the first quarter of 2023.

See “Note 6. Reserve for Claims and Claim Expenses” in our “Notes to the Consolidated Financial Statements” for additional information related to the development of prior accident years net claims and claim expenses.

Fee Income

Three months ended March 31, (in thousands)	2023	2022	Change
Management Fee Income			
Joint ventures	$ 27,998	$ 13,395	$ 14,603
Structured reinsurance products	6,638	7,224	(586)
Managed funds	6,269	6,603	(334)
Total management fee income	40,905	27,222	13,683
Performance Fee Income			
Joint ventures	1,755	(103)	1,858
Structured reinsurance products	1,755	934	821
Managed funds	357	296	61
Total performance fee income	3,867	1,127	2,740
Total fee income	$ 44,772	$ 28,349	$ 16,423

The table above shows total fee income earned through third-party capital management activities, including various joint ventures, managed funds and certain structured retrocession agreements to which we are a party. Performance fees are based on the performance of the individual vehicles or products, and may be zero or negative in a particular period if, for example, large losses occur, which can potentially result in no performance fees or the reversal of previously accrued performance fees. Joint ventures include DaVinci, Top Layer, Vermeer, Fontana and certain entities investing in Langhorne Holdings LLC. Managed funds include Upsilon Fund and Medici. Structured reinsurance products and other includes certain reinsurance contracts and certain other vehicles through which we transfer risk to third-party capital.

In the first quarter of 2023, total fee income earned through third-party capital management activities increased $16.4 million, to $44.8 million, compared to $28.3 million in the first quarter of 2022, primarily due to higher management fee income in the first quarter of 2023 compared to the first quarter of 2022. This increase reflected increased capital managed at DaVinci, Vermeer, Medici, and Fontana, as well as the recording of previously deferred management fees in DaVinci as a result of the weather-related large losses experienced in prior years.

Performance fee income increased $2.7 million compared to the first quarter of 2022, driven by favorable development of prior year events.

The fees earned through third-party capital management activities are principally recorded through redeemable noncontrolling interest, or as an increase to underwriting income (reduction to underwriting loss), through a decrease in operating expenses or acquisition expenses. Below is a summary of the impact of fee income on the applicable financial statement line items.

Three months ended March 31, (in thousands)	2023	2022	Change
Underwriting income (loss) - fee income on third-party capital management activities (1)	$ 13,141	$ 12,161	$ 980
Equity in earnings of other ventures	(141)	23	(164)
Net income (loss) attributable to redeemable noncontrolling interest	31,772	16,165	15,607
Total fee income	$ 44,772	$ 28,349	$ 16,423

(1) Reflects total fee income earned through third-party capital management activities recorded through underwriting income (loss) as a decrease (increase) to operating expenses or acquisition expenses. The $13.1 million includes $11.6 million of management fee income, recorded as a reduction to operating expenses and $1.6 million of performance fee income recorded as an increase to acquisition expenses (2022 - $12.2 million, $12.6 million and a reduction of $0.4 million, respectively).

In addition to the $44.8 million of fee income earned through our third-party capital management activities described above, we earned additional fees of $22.2 million on other underwriting-related activities, primarily related to expense overrides paid to us by our reinsurers. These additional fees on other underwriting-related activities are recorded as a reduction to operating expenses or acquisition expenses, as applicable. The total fees recorded through underwriting income (loss) are detailed in the table below.

Three months ended March 31, (in thousands)	2023	2022	Change
Underwriting income (loss) - fee income on third-party capital management activities	$ 13,141	$ 12,161	$ 980
Underwriting income (loss) - additional fee income on other underwriting-related activities	22,176	20,945	1,231
Total fees recorded through underwriting income (loss) [(1)]	$ 35,317	$ 33,106	$ 2,211
Impact of total fees recorded through underwriting income (loss) on the combined ratio	2.1 %	2.2 %	(0.1)%

(1) The $35.3 million includes $33.7 million of management fee income, recorded as a reduction to operating expenses and $1.6 million of performance fee income recorded as a reduction to acquisition expenses (2022 - $33.1 million, $30.8 million and $2.3 million, respectively).

Net Investment Income

Three months ended March 31, (in thousands)	2023	2022	Change
Fixed maturity investments trading	$ 155,500	$ 62,417	$ 93,083
Short term investments	32,950	1,136	31,814
Equity investments	3,399	2,754	645
Other investments			
Catastrophe bonds	38,831	17,360	21,471
Other	24,571	5,552	19,019
Cash and cash equivalents	4,264	(41)	4,305
	259,515	89,178	170,337
Investment expenses	(5,137)	(5,487)	350
Net investment income	$ 254,378	$ 83,691	$ 170,687

Net investment income was $254.4 million in the first quarter of 2023, compared to $83.7 million in the first quarter of 2022, an increase of $170.7 million. This increase was primarily driven by higher yielding assets in the fixed maturity and short term portfolios as a result of our reinvestment of the portfolio during the rising interest rate environment throughout 2022.

Net Realized and Unrealized Gains (Losses) on Investments

Three months ended March 31, (in thousands)	2023	2022	Change
Gross realized gains on fixed maturity investments trading	$ 17,709	$ 9,560	$ 8,149
Gross realized losses on fixed maturity investments trading	(122,474)	(130,712)	8,238
Net realized gains (losses) on fixed maturity investments trading	(104,765)	(121,152)	16,387
Net unrealized gains (losses) on fixed maturity investments trading	312,026	(464,177)	776,203
Net realized and unrealized gains (losses) on investments-related derivatives [(1)]	12,162	(40,288)	52,450
Net realized gains (losses) on equity investments	(8,738)	(20)	(8,718)
Net unrealized gains (losses) on equity investments	39,151	(48,669)	87,820
Net realized and unrealized gains (losses) on equity investments	30,413	(48,689)	79,102
Net realized and unrealized gains (losses) on other investments - catastrophe bonds	24,126	(8,261)	32,387
Net realized and unrealized gains (losses) on other investments - other	5,489	9,550	(4,061)
Net realized and unrealized gains (losses) on investments	$ 279,451	$ (673,017)	$ 952,468

(1) Net realized and unrealized gains (losses) on investment-related derivatives includes fixed maturity investments related derivatives (interest rate futures, interest rate swaps, credit default swaps and total return swaps), and equity investments related derivatives (equity futures). See “Note 13. Derivative Instruments” in our “Notes to Consolidated Financial Statements” for additional information.

We structure our investment portfolio to emphasize the preservation of capital and the availability of liquidity to meet our claims obligations, to be well diversified across market sectors, and to generate relatively attractive returns on a risk-adjusted basis over time. A large majority of our investments are invested in the fixed income markets and, therefore, our realized and unrealized holding gains and losses on investments are highly correlated to fluctuations in interest rates. As interest rates decline, we tend to have realized and unrealized gains from our investment portfolio, and as interest rates rise, we tend to have realized and unrealized losses from our investment portfolio.

Net realized and unrealized gains on investments were $279.5 million in the first quarter of 2023, compared to net realized and unrealized losses of $673.0 million in the first quarter of 2022. Impacting our net realized and unrealized gains on investments in the first quarter of 2023 were:

- net realized and unrealized gains on fixed maturity investments trading of $207.3 million, driven by unrealized mark-to-market gains resulting from decreasing interest rates on U.S. treasuries in the first quarter of 2023, compared to net realized and unrealized losses of $585.3 million in the first quarter of 2022 resulting from increases in interest rates;
- net realized and unrealized gains on equity investments of $30.4 million compared to losses of $48.7 million in the first quarter of 2022, an increase of $79.1 million. The equity investment results for both the current and prior period were in line with wider equity market movements.

Net Foreign Exchange Gains (Losses)

Three months ended March 31, (in thousands)	2023	2022	Change
Net foreign exchange gains (losses)	$ (14,503)	$ (15,486)	$ 983

Our functional currency is the U.S. dollar. We routinely write a portion of our business in currencies other than U.S. dollars and invest a portion of our cash and investment portfolio in those currencies. We are primarily impacted by foreign currency exposures associated with our underwriting operations and our investment portfolio, and may, from time to time, enter into foreign currency forward and option contracts to minimize the effect of fluctuating foreign currencies on the value of non-U.S. dollar denominated assets and liabilities.

Refer to “Part II, Item 7A. Quantitative and Qualitative Disclosures About Market Risk” in our Form 10-K for the year ended December 31, 2022 for additional information related to our exposure to foreign currency risk and “Note 13. Derivative Instruments” in our “Notes to the Consolidated Financial Statements” for additional information related to foreign currency forward and option contracts we have entered into.

Equity in Earnings (Losses) of Other Ventures

Three months ended March 31,	2023	2022	Change
(in thousands)			
Tower Hill Companies	$ 6,267	$ (8,703)	$ 14,970
Top Layer	3,364	1,085	2,279
Other	(101)	1,228	(1,329)
Total equity in earnings (losses) of other ventures	$ 9,530	$ (6,390)	$ 15,920

Equity in earnings of other ventures represents our pro-rata share of the net income from our investments in the Tower Hill Companies, Top Layer, and our equity investments in a select group of insurance and insurance-related companies, which are included in Other. Except for Top Layer, which is recorded on a current quarter basis, equity in earnings of other ventures is recorded one quarter in arrears. The carrying value of these investments on our consolidated balance sheets, individually or in the aggregate, may differ from the realized value we may ultimately attain, perhaps significantly so.

Earnings from our investments in other ventures were $9.5 million in the first quarter of 2023, compared to losses of $6.4 million in the first quarter of 2022, an increase of $15.9 million. The increase was principally driven by increased profitability of our equity investments during the first quarter of 2023, primarily driven by the Tower Hill Companies, which reported underwriting income in the first quarter of 2023, compared to an underwriting loss in the first quarter of 2022.

Corporate Expenses

Three months ended March 31,	2023	2022	Change
(in thousands)			
Corporate expenses	$ 12,843	$ 12,502	$ 341

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

Income Tax Benefit (Expense)

Three months ended March 31,	2023	2022	Change
(in thousands)			
Income tax benefit (expense)	$ (28,902)	$ 36,707	$ (65,609)

We recognized an income tax expense of $28.9 million in the first quarter of 2023, compared to an income tax benefit of $36.7 million in the first quarter of 2022. The income tax expense was primarily driven by investment gains and higher operating income in our U.S.-based operations in the first quarter of 2023, as compared to the income tax benefit in the first quarter of 2022, which was driven by investment losses and lower operating income.

Net Income (Loss) Attributable to Redeemable Noncontrolling Interests

Three months ended March 31, (in thousands)	2023	2022	Change
Redeemable noncontrolling interest - DaVinci	$ 166,082	$ (25,323)	$ 191,405
Redeemable noncontrolling interest - Medici	45,069	(5,287)	50,356
Redeemable noncontrolling interest - Vermeer	47,405	18,698	28,707
Redeemable noncontrolling interest - Fontana	8,828	—	8,828
Net income (loss) attributable to redeemable noncontrolling interests	$ 267,384	$ (11,912)	$ 279,296

Our net income attributable to redeemable noncontrolling interests was $267.4 million in the first quarter of 2023, compared to a net loss of $11.9 million in the first quarter of 2022, a change of $279.3 million. This change was primarily due to the following:

- DaVinci, which had net income in the first quarter of 2023, primarily resulting from realized and unrealized gains on investments, driven by the decrease in interest rates discussed previously, as well as a reduced impact from the Q1 2023 Large Loss Events as compared to the impact from the Q1 2022 Weather-Related Large Losses, and an increase in net earned premiums in the first quarter of 2023.
- Medici, which had net income in the first quarter of 2023 due to realized and unrealized gains on its catastrophe bond portfolio, in addition to increased net investment income;
- Vermeer, which had a higher net income in the first quarter of 2023 as compared to the first quarter of 2022, primarily resulting from higher net investment income and an increase in net earned premiums; and
- Fontana, which was launched in the second quarter of 2022 and had a net income in the first quarter of 2023 primarily due to realized and unrealized gains on investments.

FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

Financial Condition

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

The payment of dividends by our subsidiaries is, under certain circumstances, limited by the applicable laws and regulations in the various jurisdictions in which our subsidiaries operate. In addition, insurance laws require our insurance subsidiaries to maintain certain measures of solvency and liquidity. We believe that each of our insurance subsidiaries and branches exceeded the minimum solvency, capital and surplus requirements in their applicable jurisdictions at March 31, 2023. Certain of our subsidiaries and branches are required to file FCRs with their regulators, which provide details on solvency and financial performance. Where required, these FCRs will be posted on our website. The regulations governing our and our principal operating subsidiaries' ability to pay dividends and to maintain certain measures of solvency and liquidity, and requirements to file FCRs are discussed in detail in "Part I, Item 1. Business, Regulation" and "Note 17. Statutory Requirements" in our "Notes to the Consolidated Financial Statements" in our Form 10-K for the year ended December 31, 2022.

Liquidity and Cash Flows

Holding Company Liquidity

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

We attempt to structure our organization in a way that facilitates efficient capital movements between RenaissanceRe and our operating subsidiaries and to ensure that adequate liquidity is available when required, giving consideration to applicable laws and regulations, and the domiciliary location of sources of liquidity and related obligations. For example, our internal investment structures and cash pooling arrangements among the Company and certain of our subsidiaries help to efficiently facilitate capital and liquidity movements.

In the aggregate, our principal operating subsidiaries have historically produced sufficient cash flows to meet their expected claims payments and operational expenses and to provide dividend payments to us. In addition, our subsidiaries maintain a concentration of investments in high quality liquid securities, which management believes will provide additional liquidity for extraordinary claims payments should the need arise. However, in some circumstances, RenaissanceRe may determine it is necessary or advisable to contribute capital to our subsidiaries, or may be contractually required to contribute capital to our joint ventures or managed funds. For example, in 2022, RenaissanceRe contributed capital to RenaissanceRe Specialty U.S. to support growth in premiums. In addition, from time to time we invest in new managed joint ventures or managed funds, increase our investments in certain of our managed joint ventures or managed funds and contribute cash to investment subsidiaries. For instance, effective April 1, 2022, RenaissanceRe launched Fontana, an innovative joint venture dedicated to writing Casualty and Specialty risks. In certain instances, we may be required to make capital contributions to our subsidiaries or joint ventures or managed funds, for example, Renaissance Reinsurance is obligated to make a mandatory capital contribution of up to $50.0 million in the event that a loss reduces Top Layer's capital below a specified level.

Sources of Liquidity

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

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

We expect that our liquidity needs for the next 12 months will be met by our cash receipts from operations. However, as a result of a combination of market conditions, turnover of our investment portfolios and changes in investment yields, and the nature of our business where a large portion of the coverages we provide can produce losses of high severity and low frequency, future cash flows from operating activities cannot be accurately predicted and may fluctuate significantly between individual quarters and years. In addition, due to the magnitude and complexity of certain large loss events, meaningful uncertainty remains regarding losses from these events and our actual ultimate net losses from these events may vary materially from preliminary estimates, which would impact our cash flows from operations.

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

Credit Facilities, Trusts and Other Collateral Arrangements

We also maintain various other arrangements that allow us to access liquidity and satisfy collateral requirements, including revolving credit facilities, letter of credit facilities, and regulatory trusts, as well as other types of trust and collateral arrangements. Regulatory and other requirements to post collateral to support our reinsurance obligations could impact our liquidity. For example, many jurisdictions in the U.S. do not permit insurance companies to take credit for reinsurance obtained from unlicensed or non-admitted insurers on their statutory financial statements unless security is posted, so our contracts generally require us to post a letter of credit or provide other security (such as through a multi-beneficiary reinsurance trust). However, certain of our subsidiaries qualify as certified reinsurers or reciprocal reinsurers in one or more U.S. states, which has, and may continue to, reduce the amount of collateral that we are required to post. In addition, if we were to fail to comply with certain covenants in our debt agreements, we may have to pledge additional collateral.

Letter of Credit and Revolving Credit Facilities

We and certain of our subsidiaries, joint ventures, and managed funds maintain secured and unsecured revolving credit facilities and letter of credit facilities that provide liquidity and allow us to satisfy certain collateral requirements. The outstanding amounts drawn under each of our significant credit facilities are set forth below:

At March 31, 2023 (in thousands)	Issued or Drawn
Revolving Credit Facility (1)	$ —
Medici Revolving Credit Facility (2)	—
Bilateral Letter of Credit Facilities	
Secured	396,994
Unsecured	483,809
Funds at Lloyd’s Letter of Credit Facility	275,000
	$ 1,155,803

(1) At March 31, 2023, no amounts were issued or drawn under this facility.

(2) RenaissanceRe owns a noncontrolling economic interest in Medici. Because RenaissanceRe controls all of Medici’s outstanding issued voting shares, the financial statements of Medici are included in RenaissanceRe’s consolidated financial statements. However, RenaissanceRe does not guarantee or provide credit support for Medici, and RenaissanceRe’s financial exposure to Medici is limited to its investment in Medici’s shares and counterparty credit risk arising from reinsurance transactions. At March 31, 2023, no amounts were issued or drawn under this facility.

Uncommitted, Secured Standby Letter of Credit Facility with Wells Fargo

On February 22, 2023, RenaissanceRe and certain of its subsidiaries and affiliates, including Renaissance Reinsurance, DaVinci Reinsurance, Renaissance Reinsurance U.S., RenaissanceRe Specialty U.S. and RREAG entered into an amendment to its letter of credit facility with Wells Fargo Bank, National Association. The Amendment provides for, among other things, the option to request the issuance of up to $150.0 million of secured letters of credit in the aggregate, the removal of an unused option to request unsecured letters of credit, and certain other modifications to the provisions that require collateral to be pledged in favor of Wells Fargo to secure the Applicants’ reimbursement obligations, including changes to the methodology for calculation of collateral values.

Refer to “Note 7. Debt and Credit Facilities” in our “Notes to the Consolidated Financial Statements” for additional information related to our significant debt and credit facilities.

Funds at Lloyd’s

As a member of Lloyd’s, the underwriting capacity, or stamp capacity, of Syndicate 1458 must be supported by providing a deposit, the FAL, in the form of cash, securities or letters of credit. At March 31, 2023, the FAL required to support the underwriting activities at Lloyd’s through Syndicate 1458 was £907.5 million (December 31, 2022 - £986.8 million). Actual FAL posted for Syndicate 1458 at March 31, 2023 by

RenaissanceRe Corporate Capital (UK) Limited was $1.0 billion (December 31, 2022 - $1.0 billion), supported by a $275.0 million letter of credit and a $757.3 million deposit of cash and fixed maturity securities (December 31, 2022 - $275.0 million and $737.6 million, respectively). Refer to “Note 7. Debt and Credit Facilities” in our “Notes to the Consolidated Financial Statements” for additional information related to this letter of credit facility.

Multi-Beneficiary Reinsurance Trusts, Multi-Beneficiary Reduced Collateral Reinsurance Trusts

Renaissance Reinsurance, DaVinci Reinsurance and RREAG, use multi-beneficiary reinsurance trusts and/or multi-beneficiary reduced collateral reinsurance trusts to collateralize reinsurance liabilities. As described below, as of March 31, 2023, all of these trusts were funded in accordance with the relevant regulatory thresholds. However, assets held in these trusts may exceed the amount required under U.S. state regulations. Refer to “Note 17. Statutory Requirements” in our “Notes to the Consolidated Financial Statements” in our Form 10-K for the year ended December 31, 2022 for additional information on our multi-beneficiary reinsurance trusts and multi-beneficiary reduced collateral reinsurance trusts.

Assets held under trust at March 31, 2023 with respect to our multi-beneficiary reinsurance trusts totaled $632.0 million and $255.9 million for Renaissance Reinsurance and DaVinci, respectively (December 31, 2022 - $633.7 million and $255.6 million, respectively), compared to the minimum amount required under U.S. state regulations of $452.3 million and $145.8 million, respectively, at March 31, 2023 (December 31, 2022 - $511.4 million and $200.1 million, respectively).

Assets held under trust at March 31, 2023 with respect to our multi-beneficiary reduced collateral reinsurance trusts totaled $178.7 million, $213.6 million, and $105.5 million for Renaissance Reinsurance, DaVinci and RREAG respectively (December 31, 2022 - $172.7 million, $211.0 million and $106.5 million respectively), compared to the minimum amount required under U.S. state regulations of $142.2 million, $175.2 million and $92.4 million respectively (December 31, 2022 - $146.1 million, $174.7 million and $98.3 million respectively).

Contractual Obligations

In assessing our liquidity requirements and cash needs, we also consider contractual obligations to which we are a party. These contractual obligations are summarized in our Form 10-K for the year ended December 31, 2022. As of March 31, 2023, there were no material changes in our contractual obligations as disclosed in the table of contractual obligations and related footnotes included in our Form 10-K for the year ended December 31, 2022.

Cash Flows

Three months ended March 31, (in thousands)	2023	2022
Net cash provided by (used in) operating activities	$ 435,708	$ 168,229
Net cash provided by (used in) investing activities	(684,697)	(403,900)
Net cash provided by (used in) financing activities	116,291	(66,493)
Effect of exchange rate changes on foreign currency cash	2,066	6,201
Net increase (decrease) in cash and cash equivalents	(130,632)	(295,963)
Cash and cash equivalents, beginning of period	1,194,339	1,859,019
Cash and cash equivalents, end of period	$ 1,063,707	$ 1,563,056

2023

During the three months ended March 31, 2023, our cash and cash equivalents decreased by $130.6 million, to $1.1 billion at March 31, 2023, compared to $1.2 billion at December 31, 2022.

Cash flows provided by operating activities. Cash flows provided by operating activities during the three months ended March 31, 2023 were $435.7 million, compared to $168.2 million during the three months ended March 31, 2022. Cash flows provided by operating activities during the three months ended March

31, 2023 were primarily the result of certain adjustments to reconcile our net income of $840.3 million to net cash provided by operating activities, including:

- an increase in unearned premiums of $691.5 million due to the growth in gross premiums written across both our Property and Casualty and Specialty segments;
- an increase in reserve for claims and claim expenses of $104.3 million primarily resulting from an increase in reserves within our Casualty and Specialty segment largely driven by additional attritional reserves as a result of the application of our reserving loss ratios to the earned premium in the three months ended March 31, 2023, partially offset by a decrease in reserves in our Property segment due to prior year favorable development and paid losses during the three months ended March 31, 2023;
- an increase in reinsurance balances payable of $61.4 million principally driven by the issuance of non-voting preference shares to investors in Upsilon RFO, which are accounted for as prospective reinsurance and included in reinsurance balances payable on our consolidated balance sheet. See “Note 9. Variable Interest Entities” in our “Notes to the Consolidated Financial Statements” for additional information related to Upsilon RFO’s non-voting preference shares; partially offset by
- an increase in premiums receivable of $794.2 million due to the timing of receipts and increase in our gross premiums written;
- net realized and unrealized gains on investments of $267.3 million primarily driven by unrealized mark-to-market gains resulting from the decrease in interest rates; and
- an increase of $109.4 million in our prepaid reinsurance premiums due to the January 1, 2023 renewal of our ceded book, which drove growth in both our ceded premiums written and unearned ceded premiums.

Cash flows used in investing activities. During the three months ended March 31, 2023, our cash flows used in investing activities were $684.7 million, principally reflecting net purchases of fixed maturity investments trading of $139.5 million, short term investments of $480.4 million, and other investments of $159.5 million, partially offset by cash flows from net sales of equity investments trading of $104.1 million. The net purchases of fixed maturity investments trading was primarily funded by cash flows provided by operating activities, as described above, whereas the net purchase of other investments during the three months ended March 31, 2023, was primarily driven by an increased allocation to catastrophe bonds and fund investments.

Cash flows provided by financing activities. Our cash flows provided by financing activities in the three months ended March 31, 2023 were $116.3 million, and were principally the result of:

- net inflows of $190.6 million primarily related to net third-party redeemable noncontrolling interest share transactions in Medici and DaVinci; partially offset by
- repayment of debt of $30.0 million related to the Medici Revolving Credit Facility; and
- dividends paid on our common and preference shares of $16.6 million and $9.0 million, respectively.

2022

During the three months ended March 31, 2022, our cash and cash equivalents decreased by $296.0 million, to $1.6 billion at March 31, 2022, compared to $1.9 billion at December 31, 2021.

Cash flows provided by operating activities. Cash flows provided by operating activities during the three months ended March 31, 2022 were $168.2 million, compared to $206.5 million during the three months ended March 31, 2021. Cash flows provided by operating activities during the three months ended March 31, 2022 were primarily the result of certain adjustments to reconcile our net loss of $397.5 million to net cash provided by operating activities, including:

- an increase in unearned premiums of $1.0 billion due to the growth in gross premiums written across both our Property and Casualty and Specialty segments;

- net realized and unrealized losses on investments of $632.7 million primarily driven by unrealized mark-to-market losses resulting from the significant increase in interest rates;
- an increase in reinsurance balances payable of $458.7 million principally driven by the issuance of non-voting preference shares to investors in Upsilon RFO, which are accounted for as prospective reinsurance and included in reinsurance balances payable on our consolidated balance sheet. See “Note 9. Variable Interest Entities” in our “Notes to the Consolidated Financial Statements” for additional information related to Upsilon RFO’s non-voting preference shares; partially offset by
- an increase in premiums receivable of $1.1 billion due to the timing of receipts and increase in our gross premiums written;
- an increase of $331.3 million in our prepaid reinsurance premiums due to the growth in both our ceded premiums written and unearned ceded premiums; and
- a decrease in other operating cash flows of $160.6 million primarily reflecting subscriptions received in advance of the issuance of Medici’s non-voting preference shares effective April 1, 2022, which were recorded in other liabilities at March 31, 2021, and an increase in the Company’s deferred tax asset. See “Note 8. Noncontrolling Interests” in our “Notes to the Consolidated Financial Statements” for additional information related to Medici’s non-voting preference shares.

Cash flows used in investing activities. During the three months ended March 31, 2022, our cash flows used in investing activities were $403.9 million, principally reflecting net purchases of fixed maturity investments trading of $446.8 million, equity investments trading of $374.3 million, and other investments of $210.8 million, partially offset by cash flows from net sales of short term investments of $626.6 million. The net purchases of fixed maturity investments trading was primarily funded by cash flows provided by operating activities, as described above, whereas the net purchase of other investments during the three months ended March 31, 2022, was primarily driven by an increased allocation to catastrophe bonds and fund investments.

Cash flows used in financing activities. Our cash flows used in financing activities in the three months ended March 31, 2022 were $66.5 million, and were principally the result of:

- the repurchase of 576.7 thousand of our common shares in open market transactions at an aggregate cost of $93.4 million and an average price of $162.03 per common share;
- dividends paid on our common and preference shares of $16.2 million and $8.9 million, respectively; and partially offset by
- net inflows of $66.7 million primarily related to net third-party redeemable noncontrolling interest share transactions in Medici and DaVinci.

Capital Resources

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

Our total shareholders' equity attributable to RenaissanceRe and total debt was as follows:

(in thousands)	At March 31, 2023	At December 31, 2022	Change
Common shareholders' equity	$ 5,115,535	$ 4,575,274	$ 540,261
Preference shares	750,000	750,000	—
Total shareholders' equity attributable to RenaissanceRe	5,865,535	5,325,274	540,261
3.600% Senior Notes due 2029	394,448	394,221	227
3.450% Senior Notes due 2027	297,898	297,775	123
3.700% Senior Notes due 2025	299,259	299,168	91
4.750% Senior Notes due 2025 (DaVinci) (1)	149,355	149,278	77
Total senior notes	$ 1,140,960	$ 1,140,442	$ 518
Medici Revolving Credit Facility (2)	$ —	$ 30,000	$ (30,000)
Total debt	$ 1,140,960	$ 1,170,442	$ (29,482)

(1) RenaissanceRe owns a noncontrolling economic interest in its joint venture DaVinci. Because RenaissanceRe controls a majority of DaVinci's issued voting shares, the consolidated financial statements of DaVinci are included in the consolidated financial statements of RenaissanceRe. However, RenaissanceRe does not guarantee or provide credit support for DaVinci and RenaissanceRe's financial exposure to DaVinci is limited to its investment in DaVinci's shares and counterparty credit risk arising from reinsurance transactions.

(2) RenaissanceRe owns a noncontrolling economic interest in Medici. Because RenaissanceRe controls all of Medici's outstanding issued voting shares, the financial statements of Medici are included in RenaissanceRe's consolidated financial statements. However, RenaissanceRe does not guarantee or provide credit support for Medici, and RenaissanceRe's financial exposure to Medici is limited to its investment in Medici's shares and counterparty credit risk arising from reinsurance transactions. At March 31, 2023, no amounts were issued or drawn under this facility.

Our shareholders' equity attributable to RenaissanceRe increased $540.3 million during the three months ended March 31, 2023 principally as a result of:

- our comprehensive income attributable to RenaissanceRe of $573.5 million; partially offset by
- $16.6 million and $8.8 million of dividends on our common and preference shares, respectively.

For additional information related to the terms of our debt and significant credit facilities, see "Note 7. Debt and Credit Facilities" in our "Notes to the Consolidated Financial Statements" in this Form 10-Q and "Note 8. Debt and Credit Facilities" in our "Notes to the Consolidated Financial Statements" in our Form 10-K for the year ended December 31, 2022. See "Note 10. Shareholders' Equity" in our "Notes to the Consolidated Financial Statements" in this Form 10-Q and "Note 11. Shareholders' Equity" in our "Notes to the Consolidated Financial Statements" in our Form 10-K for the year ended December 31, 2022 for additional information related to our common and preference shares.

Reserve for Claims and Claim Expenses

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

Refer to “Note 7. Reserve for Claims and Claim Expenses” in our “Notes to the Consolidated Financial Statements” in our Form 10-K for the year ended December 31, 2022 and “Note 6. Reserve for Claims and Claim Expenses” included herein for more information on the risks we insure and reinsure, the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, prior year development of the reserve for claims and claim expenses, analysis of our incurred and paid claims development and claims duration information for each of our Property and Casualty and Specialty segments. In addition, refer to “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Summary of Critical Accounting Estimates, Claims and Claim Expense Reserves” in our Form 10-K for the year ended December 31, 2022 for more information on the reserving techniques, assumptions and processes we follow to estimate our claims and claim expense reserves, our current estimates versus our initial estimates of our claims reserves, and sensitivity analysis for each of our Property and Casualty and Specialty segments.

Investments

The table below shows our invested assets:

(in thousands, except percentages)	March 31, 2023		December 31, 2022		Change
U.S. treasuries	$ 7,331,398	31.6 %	$ 7,180,129	32.3 %	$ 151,269
Corporate [(1)]	4,474,372	19.3 %	4,390,568	19.8 %	83,804
Agencies	481,850	2.1 %	395,149	1.8 %	86,701
Non-U.S. government	364,048	1.6 %	383,838	1.7 %	(19,790)
Non-agency mortgage-backed	786,680	3.4 %	710,429	3.2 %	76,251
Commercial mortgage-backed	215,655	0.9 %	213,987	1.0 %	1,668
Asset-backed	1,041,582	4.5 %	1,077,302	4.8 %	(35,720)
Total fixed maturity investments, at fair value	14,695,585	63.4 %	14,351,402	64.6 %	344,183
Short term investments, at fair value	5,177,095	22.3 %	4,669,272	21.0 %	507,823
Equity investments, at fair value	551,394	2.4 %	625,058	2.8 %	(73,664)
Catastrophe bonds	1,388,579	6.0 %	1,241,468	5.6 %	147,111
Fund investments	1,144,544	4.9 %	1,086,706	4.9 %	57,838
Term loans	100,000	0.4 %	100,000	0.5 %	—
Direct private equity investments	67,532	0.3 %	66,780	0.3 %	752
Total other investments, at fair value	2,700,655	11.6 %	2,494,954	11.2 %	205,701
Investments in other ventures, under equity method	84,731	0.3 %	79,750	0.4 %	4,981
Total investments	$ 23,209,460	100.0 %	$ 22,220,436	100.0 %	$ 989,024

(1) Corporate fixed maturity investments include non-U.S. government-backed corporate fixed maturity investments.

We structure our investment portfolio to emphasize the preservation of capital and the availability of liquidity to meet our claims obligations, to be well diversified across market sectors, and to generate relatively attractive returns on a risk-adjusted basis over time. Notwithstanding the foregoing, our investments are subject to market-wide risks and fluctuations, as well as to risks inherent in particular securities. For additional information regarding our investments and the fair value measurement of our investments refer to “Note 3. Investments” and “Note 4. Fair Value Measurements” in our “Notes to the Consolidated Financial Statements.”

As the reinsurance coverages we sell include substantial protection for damages resulting from natural and man-made catastrophes, as well as for potentially large casualty and specialty exposures, we expect, from time to time, to become liable for substantial claim payments on short notice. Accordingly, our investment portfolio as a whole is structured to seek to preserve capital and provide a high level of liquidity, which means that the large majority of our investments are highly rated fixed income securities, including U.S. treasuries, agencies, highly rated sovereign and supranational securities, high-grade corporate securities and mortgage-backed and asset-backed securities. We also have an allocation to publicly traded equities reflected on our consolidated balance sheet as equity investments and an allocation to other investments (including catastrophe bonds, fund investments, term loans and direct private equity investments).

Other Investments

The table below shows our portfolio of other investments:

(in thousands)	March 31, 2023	December 31, 2022	Change
Catastrophe bonds	$ 1,388,579	$ 1,241,468	$ 147,111
Fund investments	1,144,544	1,086,706	57,838
Term loans	100,000	100,000	—
Direct private equity investments	67,532	66,780	752
Total other investments	$ 2,700,655	$ 2,494,954	$ 205,701

We account for our other investments at fair value in accordance with FASB ASC Topic *Financial Instruments*. The fair value of our fund investments, which include private equity funds, private credit funds and hedge funds, is recorded on our consolidated balance sheet in other investments, and is generally established on the basis of the net asset value per share (or its equivalent), determined by the managers of these investments in accordance with the applicable governing documents. Many of our fund investments are subject to restrictions on redemptions and sales which limit our ability to liquidate these investments in the short term.

Our fund managers and their fund administrators are generally unable to provide final fund valuations as of our current reporting date. We typically experience a reporting lag to receive a final net asset value report of one month for our hedge funds and three months for both private equity funds and private credit funds, although we have occasionally experienced delays of up to six months, particularly at year end. In circumstances where there is a reporting lag, we estimate the fair value of these funds by starting with the prior month or quarter-end fund valuation, adjusting these valuations for actual capital calls, redemptions or distributions, as well as the impact of changes in foreign currency exchange rates, and then estimating the return for the current period. This principally includes using preliminary estimates reported to us by our fund managers where available, and estimating returns based on the performance of broad market indices, or other valuation methods. Actual final fund valuations may differ, perhaps materially, from our estimates and these differences are recorded in our consolidated statement of operations in the period in which they are reported to us as a change in estimate. A net loss of $1.9 million is recorded between net investment income and net realized and unrealized gains (losses) on investments for the three months ended March 31, 2023 (2022 - net income of $19.2 million for the three months ended March 31, 2022), representing the change in estimate during the period related to the difference between our estimate recorded on December 31, 2022 (2022 - December 31, 2021), due to the lag in reporting discussed above, and the actual amount reported in the final net asset values provided by our fund managers in the current year.

Our estimate of the fair value of catastrophe bonds is based on quoted market prices, or when such prices are not available, by reference to broker or underwriter bid indications. Refer to “Note 4. Fair Value Measurements” in our “Notes to the Consolidated Financial Statements” for additional information regarding the fair value measurement of our investments.

We have committed capital to fund investments, term loans, direct private equity investments and investments in other ventures of $2.9 billion, of which $1.7 billion has been contributed at March 31, 2023 (December 31, 2022 - $2.9 billion and $1.7 billion, respectively). Our remaining commitments to these investments at March 31, 2023 totaled $1.2 billion (December 31, 2022 - $1.2 billion). In the future, we may enter into additional commitments in respect of these investments or individual portfolio company investment opportunities.

Ratings

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

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

The ratings of our principal operating subsidiaries and joint ventures and the ERM score of RenaissanceRe as of May 1, 2023 are presented below.

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

(1) The A.M. Best ratings for our principal operating subsidiaries and joint ventures represent the insurer's financial strength rating. The Lloyd's Overall Market Rating represents RenaissanceRe Syndicate 1458's financial strength rating. RenaissanceRe has been assigned a "Very Strong" ERM score by A.M. Best.

(2) The S&P ratings for our principal operating subsidiaries and joint ventures represent the insurer's financial strength rating and the issuer's long-term issuer credit rating. The Lloyd's Overall Market Rating represents RenaissanceRe Syndicate 1458's financial strength rating. RenaissanceRe has been assigned a "Very Strong" ERM score by S&P.

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

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

As of May 1, 2023, there were no material changes to our ratings as disclosed in our Form 10-K for the year ended December 31, 2022.

SUPPLEMENTAL GUARANTOR FINANCIAL INFORMATION

RenaissanceRe Finance, a 100% owned subsidiary of RenaissanceRe, is the issuer of certain 3.700% Senior Notes due 2025 and 3.450% Senior Notes due 2027, each of which are fully and unconditionally guaranteed by RenaissanceRe. The guarantees are senior unsecured obligations of RenaissanceRe and rank equally in right of payment with all other existing and future unsecured and unsubordinated indebtedness of RenaissanceRe which may be outstanding from time to time. Each series of notes contain various covenants, including limitations on mergers and consolidations, and restrictions as to the disposition of, and the placing of liens on, stock of designated subsidiaries. For additional information related to the terms of our outstanding debt securities, see “Note 8. Debt and Credit Facilities” in the “Notes to the Consolidated Financial Statements” in our Form 10-K for the year ended December 31, 2022 and “Note 7. Debt and Credit Facilities” included herein.

The following tables present supplemental summarized financial information for RenaissanceRe and RenaissanceRe Finance, collectively the “Obligor Group.” Intercompany transactions among the members of the Obligor Group have been eliminated. The financial information of non-obligor subsidiaries has been excluded from the summarized financial information. Significant intercompany transactions and receivable/payable balances between the Obligor Group and non-obligor subsidiaries are presented separately in the summarized financial information:

Summarized Balance Sheets

(in thousands)	March 31, 2023		December 31, 2022	
Assets				
Receivables due from non-obligor subsidiaries	$	262,962	$	370,219
Other current assets		77,766		216,909
Total current assets	$	340,728	$	587,128
Goodwill and other intangibles	$	103,916	$	104,718
Loan receivable from non-obligor subsidiaries		895,594		874,721
Other noncurrent assets		148,782		186,279
Total noncurrent assets	$	1,148,292	$	1,165,718
Liabilities				
Payables due to non-obligor subsidiaries	$	17,284	$	16,049
Other current liabilities		18,811		95,792
Total current liabilities	$	36,095	$	111,841
Loan payable to non-obligor subsidiaries	$	203,318	$	201,380
Other noncurrent liabilities		1,093,170		1,092,728
Total noncurrent liabilities	$	1,296,488	$	1,294,108

Summarized Statement of Operations

(in thousands)	Three months ended March 31, 2023	
Revenues		
Intercompany revenue with non-obligor subsidiaries	$	21,334
Other revenue		11,727
Total revenues		33,061
Expenses		
Intercompany expense with non-obligor subsidiaries		9,721
Other expense		16,250
Total expenses		25,971
Income tax benefit (expense)		(11,236)
Net income (loss)		(4,146)
Dividends on RenaissanceRe preference shares		(8,844)
Net income (loss) attributable to Obligor Group	$	(12,990)

CURRENT OUTLOOK

Reinsurance Market Trends and Developments

Over the last 10 years, we have made key strategic decisions to build the capabilities and scale that we believe will allow us to generate superior returns in an evolving marketplace. We have diversified our sources of capital through various owned and managed balance sheets as well as equity, debt and insurance-linked securities markets. We believe that our prior planning initiatives have put us in a liquidity position that allows the flexibility to manage large loss events and efficiently distribute capital across balance sheets. We are unique among our peers in that we have both owned and managed, and rated and fronted, vehicles across the risks that we write. This has afforded us significant flexibility to react when the world changes.

Recently, we have seen a shift in the reinsurance market environment that we believe has inured to our benefit. There are several factors that we believe have created significant opportunities to source attractive risk in the lines of business that we write, and that such opportunities will result in superior returns for our shareholders. We believe that reinsurance supply has been constrained, as many participants are unwilling to accept heightened levels of volatility. At the same time, we think that demand for reinsurance has increased as insurance companies seek strategies to stabilize their returns. Additionally, we have experienced a tightening of reinsurance terms and conditions, which provides us with another tool to help manage market cycles. Overall, this has resulted in an increase in rates across certain lines of business at the January 1 and April 1 renewals.

We expect continued attractive opportunities in the remainder of 2023, and believe that we are in a strong position to take advantage of them due to: (i) our capital position; (ii) our ability to deploy excess capital; (iii) our status as one of the largest writers of property catastrophe risk; and (iv) increased demand for property catastrophe risk at the upper ends of programs where we have capacity.

We believe that our understanding of volatility places us in a preferred position to accept risk, and we continue to see strong opportunities for growth across our portfolio. We have a strategic commitment to reinsurance that we think enhances our value proposition to customers because our reinsurance participation is consistent and broad, and our focus on reinsurance minimizes potential channel conflict with our customers.

We think that we are uniquely positioned to write a variety of risks, leveraging the enhancements we have made over the last several years to our risk and capital management technology and underwriting expertise to cover additional lines of business. In particular, we have invested heavily to understand the influence of climate change on the weather and its impact on the risks that we take. We believe that the RenaissanceRe Risk Sciences team gives us an advantage in properly reflecting the evolving phenomenon of climate change in our models as compared to commercially available models. Our scientists and underwriters have consistently adjusted our global risk views to consider our present and future expectations of hazard and loss drivers from all sources including but not limited to climate change, inflation and other factors. We plan to continue to seek to take advantage of additional available opportunities and think that strategic decisions we have made in prior periods have laid the foundation for these initiatives. We believe that our clients value our ability to be a long-term partner who brings access to multiple forms of capital and innovative, large-scale solutions.

General Economic Conditions

We believe the stresses in the global economy will continue and that this may result in increased market volatility. Global events, including the COVID-19 pandemic, the war in Ukraine and global supply chain issues have contributed to widespread economic inflation. There has also been heightened instability in the global banking sector. We consider the anticipated effects of inflation, including social, economic, and event-driven, in our loss models, on our investment portfolio, and generally in the running of our business, and have enhanced our inflation framework to proactively monitor this trend.

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. However, we have seen momentum for an increase in net investment income from our investment portfolio as interest rates have risen, and a reversal of mark-to-market losses from accretion to par for certain securities that we hold to maturity.

The effects of interest rate trends on our reinsurance and insurance business could be magnified for longer-tail business lines that are more inflation-sensitive, particularly in our Casualty and Specialty segment, and in our other property class of business within our Property segment. Notwithstanding the many uncertainties and challenges that lie ahead, we believe that our track record of responding to industry events, differentiated risk management and client service capabilities, and access to diverse sources of both capital and risk position us favorably in the current environment.

The risk of a global recession is a growing concern. However, we believe that our business model is well positioned to be less sensitive to an inflationary or recessionary environment. This type of environment may increase demand for reinsurance by reducing the supply and increasing the cost of capital, and adjusting customers' risk tolerances. Consequently, reinsurance rates may rise while becoming more competitive as compared to other forms of risk capital.

Property. With the global impact of climate change, we expect the frequency and severity of perils such as drought, flood, rain, hail and wildfire to continue at the elevated levels we have seen in recent years. We think that expected losses, cost of capital and inherent volatility in this business are all increasing, which should create favorable pricing trends. These factors contributed to attractive opportunities at the January 1 and April 1 renewals where we experienced increasing rate trends, and we have already seen, and expect to continue to see, robust demand and positive outcomes at the June 1 renewals. At the January 1 renewals, we took the opportunity to further optimize our portfolio, choosing to grow our property catastrophe business, while reducing our other property business, to take advantage of the best opportunities.

While we have moved away from some programs in Florida, Southeast U.S. wind risk remains a primary risk in our portfolio as we have moved towards more regional and nationwide programs and accessed this risk through the other property line of business, relatively less of which is shared with our Capital Partners unit.

Casualty and Specialty. We continue to see opportunities across multiple lines of business and geographies within our Casualty and Specialty segment, and we have expanded participation on multiple casualty and specialty lines. However, different lines of business are at different points in their respective cycles, and we have been managing these cycles through strong underwriting discipline. At the January 1 renewals, we grew robustly in the specialty class of business in an attractive market.

We believe that our book of business is beginning to reflect the rate improvements that we have seen over the past several years. We think that our prior work building strong relationships with key customers allowed us to gain superior access to desirable business.

See the "Risk Factors" section in our Form 10-K, filed with the SEC on February 8, 2023, for additional information on factors that could cause our actual results to differ materially from those in the forward-looking statements contained in this Form 10-Q and other documents we file with the SEC.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are principally exposed to four types of market risk: interest rate risk; foreign currency risk; credit risk; and equity price risk. Our investment guidelines permit, subject to approval, investments in derivative instruments such as futures, options, foreign currency forward contracts and swap agreements, which may be used to assume risks or for hedging purposes.

There were no material changes to these market risks, as disclosed in “Part II, Item 7A. Quantitative and Qualitative Disclosures about Market Risk” in our Form 10-K for the year ended December 31, 2022, during the three months ended March 31, 2023. See “Part II, Item 7A. Quantitative and Qualitative Disclosures about Market Risk,” in our Form 10-K for the year ended December 31, 2022 for a discussion of our exposure to these risks.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(b) and 15d-15(b) of the Exchange Act, as of the end of the period covered by this report. Based upon that evaluation, our management, including our Chief Executive Officer and Chief Financial Officer, concluded that, at March 31, 2023, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in Company reports filed or submitted under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended March 31, 2023, which were identified in connection with our evaluation required pursuant to Rules 13a-15 or 15d-15 under the Exchange Act, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

There have been no material changes to the legal proceedings previously disclosed in our Form 10-K for the year ended December 31, 2022.

ITEM 1A. RISK FACTORS

There have been no material changes to the risk factors previously disclosed in our Form 10-K for the year ended December 31, 2022.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Our share repurchase program may be effected from time to time, depending on market conditions and other factors, through open market purchases and privately negotiated transactions. On August 2, 2022, our Board of Directors approved a renewal of our authorized share repurchase program to an aggregate amount of up to $500.0 million. Unless terminated earlier by our Board of Directors, the program will expire when we have repurchased the full value of the shares authorized. The table below details the repurchases that were made under the program during the first quarter of 2023, and also includes other shares purchased, which represents common shares surrendered by employees in respect of withholding tax obligations on the vesting of restricted stock.

	Total shares purchased		Other shares purchased		Shares purchased under publicly announced repurchase program		Maximum dollar amount still available under repurchase program
	Shares purchased	Average price per share	Shares purchased	Average price per share	Shares purchased	Average price per share	(in thousands)
Beginning dollar amount available to be repurchased							$ 500,000
January 1 - 31, 2023	—	$ —	—	$ —	—	$ —	500,000
February 1 - 28, 2023	65,025	$ 215.00	65,025	$ 215.00	—	$ —	500,000
March 1 - 31, 2023	23,203	$ 204.68	23,203	$ 204.68	—	$ —	500,000
Total	88,228	$ 212.29	88,228	$ 212.29	—	$ —	$ 500,000

During the three months ended March 31, 2023, we did not repurchase common shares pursuant to our publicly announced share repurchase program. At March 31, 2023, $500.0 million remained available for repurchase under the share repurchase program. In the future, we may authorize additional purchase activities under the currently authorized share repurchase program, increase the amount authorized under the share repurchase program, or adopt additional trading plans. Our decision to repurchase common shares will depend on, among other matters, the market price of the common shares and our capital requirements.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

10.1	Third Amendment to Amended and Restated Standby Letter of Credit Agreement, dated February 22, 2023, by and among Renaissance Reinsurance Ltd., DaVinci Reinsurance Ltd., Renaissance Reinsurance U.S. Inc., RenaissanceRe Europe AG, RenaissanceRe Specialty US Ltd., RenaissanceRe Holdings Ltd. and Wells Fargo Bank, National Association, incorporated by referenced to RenaissanceRe Holdings Ltd.'s Current Report on Form 8-K, filed with the SEC on February 22, 2023.
10.2	Waiver, dated as of February 6, 2023, by and between RenaissanceRe Holdings Ltd. and T. Rowe Price Associates, Inc., incorporated by reference to RenaissanceRe Holdings Ltd.'s Annual Report on Form 10-K filed with the SEC on February 8, 2023.
31.1	Certification of Kevin J. O'Donnell, Chief Executive Officer of RenaissanceRe Holdings Ltd., pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Robert Qutub, Chief Financial Officer of RenaissanceRe Holdings Ltd., pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Kevin J. O'Donnell, Chief Executive Officer of RenaissanceRe Holdings Ltd., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Robert Qutub, Chief Financial Officer of RenaissanceRe Holdings Ltd., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and included in Exhibit 101).

* Represents management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

RENAISSANCERE HOLDINGS LTD.

Date: May 3, 2023 /s/ Robert Qutub

Robert Qutub
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Duly Authorized Officer)

Date: May 3, 2023 /s/ James C. Fraser

James C. Fraser
Senior Vice President and Chief Accounting Officer
(Principal Accounting Officer)

Exhibit 31.1

CERTIFICATION

I, Kevin J. O'Donnell, certify that:

1. I have reviewed this Form 10-Q of RenaissanceRe Holdings Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 3, 2023

/s/ Kevin J. O'Donnell

Kevin J. O'Donnell
Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Robert Qutub, certify that:

1. I have reviewed this Form 10-Q of RenaissanceRe Holdings Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 3, 2023

/s/ Robert Qutub

Robert Qutub

Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Form 10-Q of RenaissanceRe Holdings Ltd. (the “Company”) for the quarter ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Kevin J. O'Donnell, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Kevin J. O'Donnell
Kevin J. O'Donnell
Chief Executive Officer
May 3, 2023

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Form 10-Q of RenaissanceRe Holdings Ltd. (the “Company”) for the quarter ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Robert Qutub, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Robert Qutub

Robert Qutub
Chief Financial Officer
May 3, 2023