Macroprudential Risk: Annual Statutory Filings[1]

FY-2022

HIGHLIGHTS

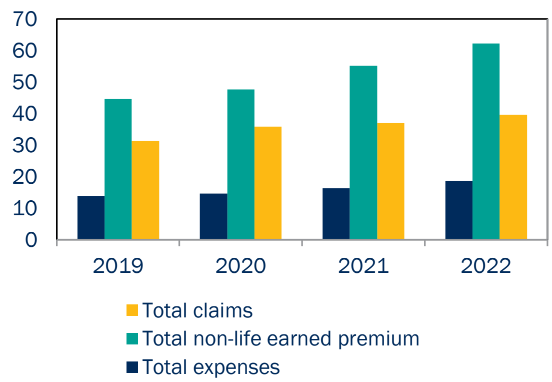
- Net Written Premiums (NWP) increased by 11.9% year-on-year (y/y) to $66.1 billion. The combined ratio dropped by 3.1% to 93.6%, while total claims increased by 6.8%
- Liquidity conditions deteriorated during the year as the share of BBB-AAA-rated securities relative to claims decreased by 23.5%

(In US$ billions unless indicated otherwise)	2022	2021	2020	2019	2018	Y/Y change (%)
Net written premiums	**66.1**	59.1	49.2	45.9	37.8	11.9
Net earned premiums	**62.2**	55.2	47.6	44.6	39.2	12.8
Net income	**3.8**	13.9	7.1	11.3	3.1	-72.6
Total claims	**39.5**	37.0	35.9	31.2	27.2	6.8
Total assets	**283.4**	283.5	281.3	244.3	216.1	0.0
Combined ratio	**93.6**	96.6	106.2	101.0	102.0	-3.1
Current assets/ current liabilities (in percent)	**1,013.9**	1,105.3	1,615.6	1,270.3	1,479.6	-8.3
"BBB-AAA" assets/claims (in percent)	**291.4**	331.4	334.9	348.8	389.6	-12.1

Source: BMA staff calculations. Note: The y/y change denotes the change between the current and the last Fiscal Year (FY) (e.g., FY-2021 and FY-2020).

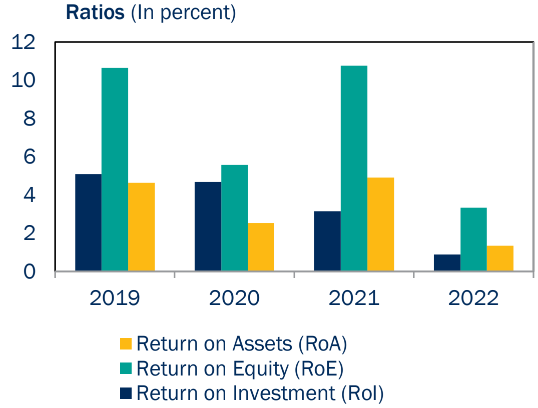
Major Large Commercial (Re)insurers – Total Claims, Total Net Earned Premiums and Expenses

(In US$ billions)



Source: BMA staff calculations

Major Large Commercial (Re)insurers- Financial Ratios (In percent)



Source: BMA staff calculations

[1] Information presented in this report relates to the capital and solvency return filings of Bermuda legal entities registered as either Class 4 or Class 3B commercial (re) insurers under the supervision of the Bermuda Monetary Authority (Authority or BMA). The presented information is based on aggregated individual firm data. Class 3B companies are large commercial (re)insurers underwriting 50% or more unrelated business and unrelated net premiums over $50 million. Class 4 (re)insurers are large commercial (re)insurers underwriting direct excess liability and/or property catastrophe reinsurance.
Disclaimer: This document is produced by the BMA's Financial Stability and Research Department. It reflects an interpretation and analysis of market views and developments by BMA staff. Market views presented may or may not reflect the consensus of all market participants.

Minor changes to numbers are expected from previous versions as some data has been restated. Prior years may not be directly comparable due to the entry and exit of firms from the sample. Numbers may not add up due to rounding.

GENERAL DEVELOPMENTS

During 2022, Bermuda's international (re)insurance sector, like other global hubs, faced the risk of pricing challenges derived from the high inflation (real and social) environment, as well as uncertainty of the valuation of assets and liabilities. The unprecedented tightening of monetary policy has driven a sharp increase in the cost of capital. Furthermore, the increase in severity and frequency of Cat events, among others related to climate change developments, continues to affect (re)insurers' strategies and outcomes.

Bermuda (re)insurers' aggregate combined ratio dropped by 3.1% to 93.6% y/y and total assets dropped slightly to $283.4 billion. . The FY-2022 premium volume increased compared to FY-2021. The NWP increased from $59.1 billion in FY-2021 to $66.1 billion in FY-2022. However, net income dropped to $3.8 billion FY-2022, compared to $13.9 FY-2021.

Investment income dropped in FY-2022 on aggregate compared to FY-2021, with Bermuda (re)insurers achieving a lower RoI at 0.9% for FY-2022. RoE and RoA also decreased over the prior year, at 3.3% and 1.3%, respectively.

The Catastrophe Bond (Cat Bond) and Insurance-Linked Securities (ILS) markets experienced a slight decline in FY-2022. Alternative risk capital, including non-securitised risk transfer mechanisms, stood at $93 billion compared to $96 billion FY-2021, with total global reinsurance capital at $575 billion FY-2022, a drop of 15% (100 billion) y/y. According to Aon, the decline was largely due to unrealised investment losses[2].

Notes: *Due to new registrations and de-registrations of Class 3B and Class 4 (re)insurers, results may not be directly comparable y/y.*

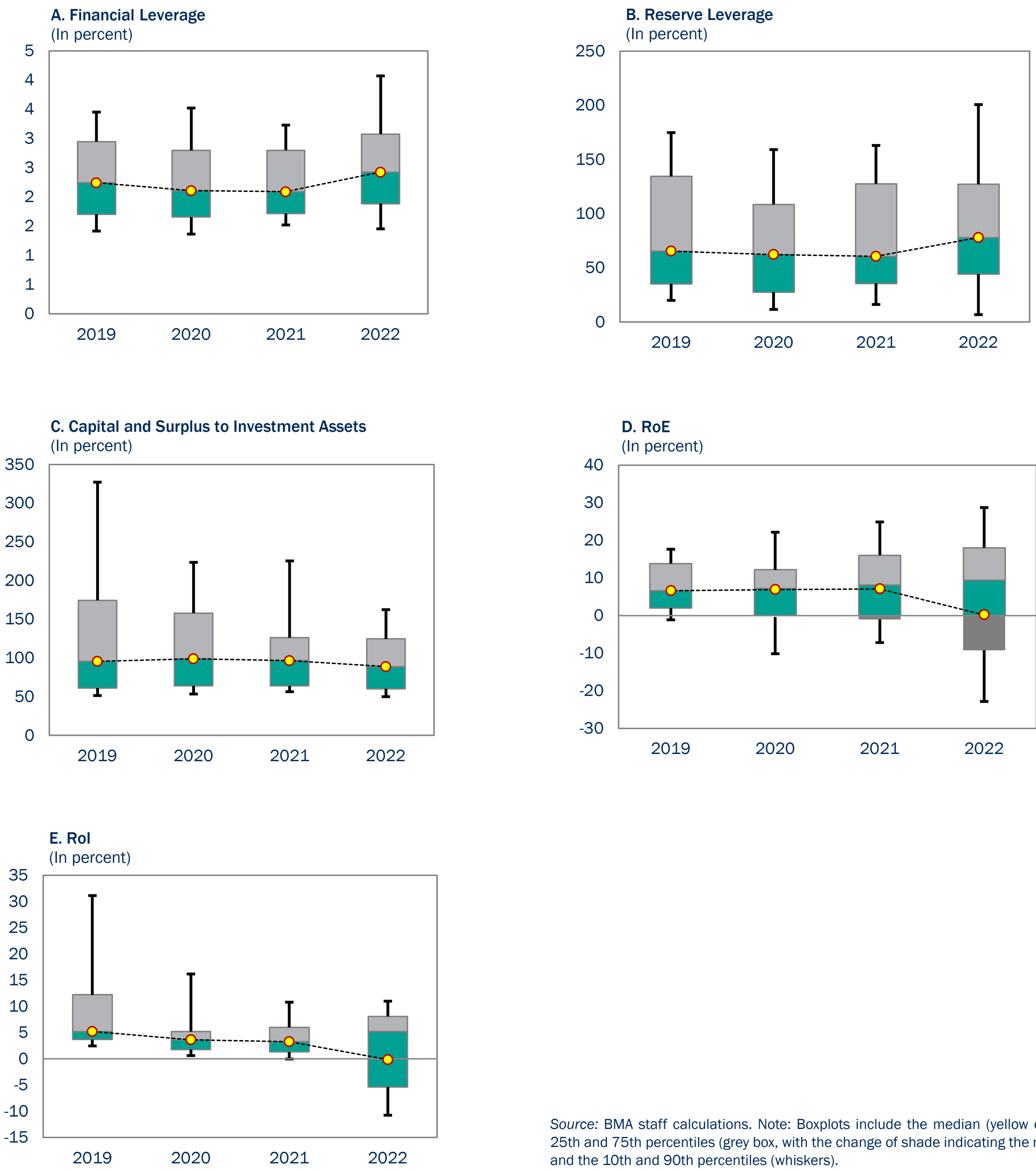
Table VII has been modified in this edition to include clearer asset definitions. Figure 3 has also been modified, including Sub-Figure D, which includes only equity investments in the form of common and preferred stocks.

[2] https://www.aon.com/getmedia/008f688f-73d3-4387-b24f-7c2d23fd8bf2/reinsurance-market-dynamics-january-2023.pdf

Figure 1: Large Commercial (Re)insurers (Class 4 and Class 3B) in Bermuda—Performance Indicators

Source: BMA staff calculations. Note: Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers). Underwriting profit/loss does not include general and administrative expenses.

Figure 2: Large Commercial (Re)insurers (Class 4 and Class 3B) in Bermuda—Performance Indicators[3]



Source: BMA staff calculations. Note: Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers).

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[3] For the purpose of this report, capital and surplus to investment assets is calculated as (total assets-total liabilities)/investment assets. Investment assets is total of quoted, unquoted and non-rated investments, this excludes other assets such as 'investments in and advances to affiliates', 'policy loans' and 'funds held by ceding reinsurers'.

Figure 3: Large Commercial (Re)insurers (Class 4 and Class 3B) in Bermuda—Asset Quality

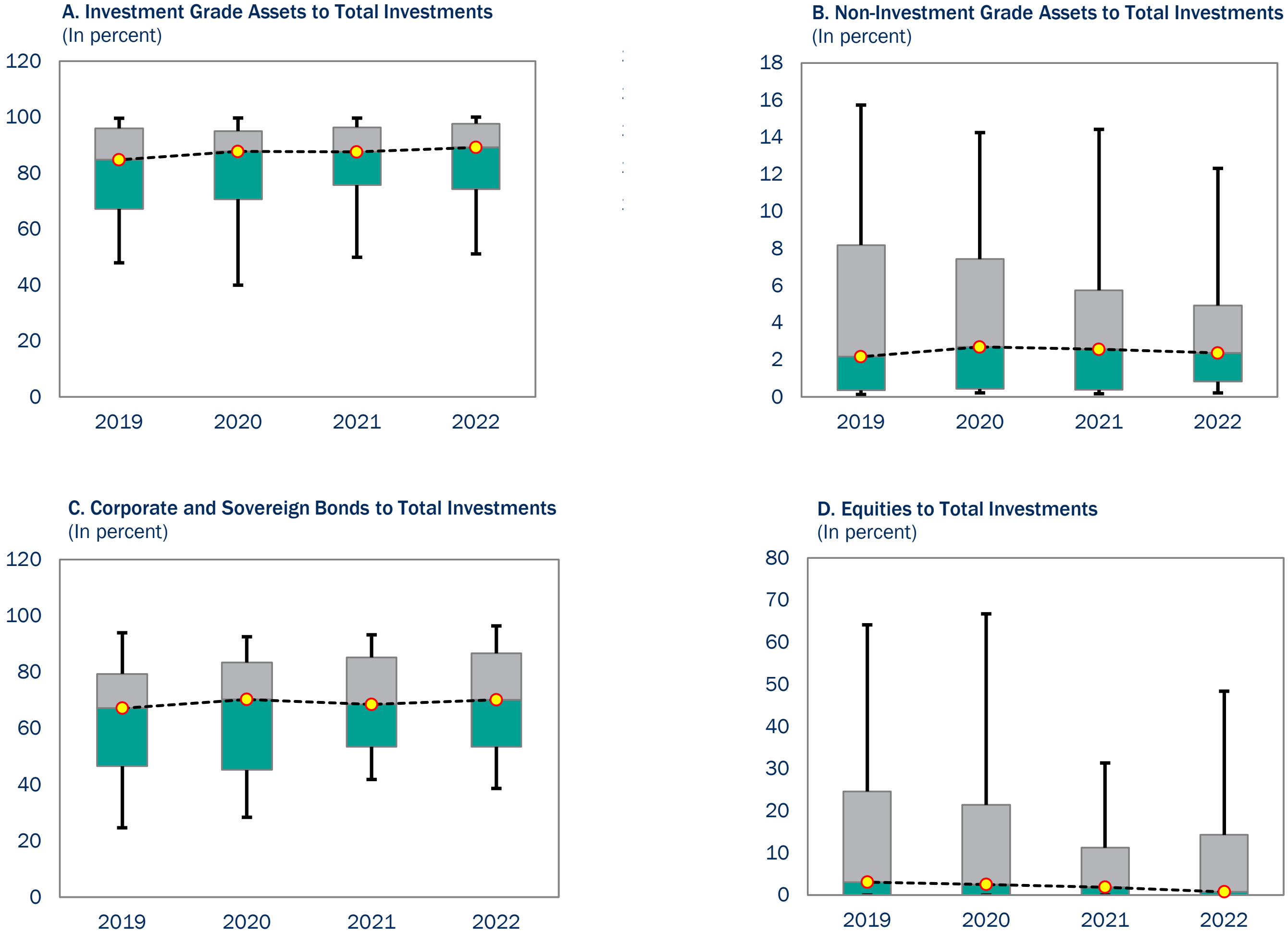
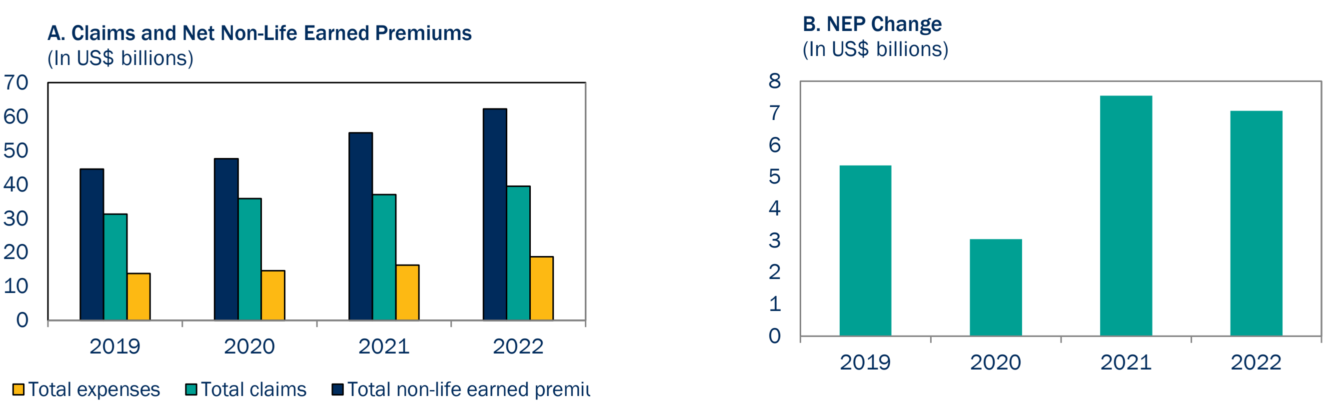


Figure 4: Large Commercial (Re)insurers (Class 4 and Class 3B) in Bermuda—Claims Experience



Source: BMA staff calculations. Note: Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers).

CAPITAL CONDITIONS

The capital position of Bermuda (re)insurers changed in FY-2022 (Table I and Table III). Capital and surplus relative to total assets (equity ratio) decreased by 11.4% y/y, standing at 40.4%.[4] Reserves increased by 9.1% y/y and amounted to 39.2% of assets held by firms—almost 97.9% of capital and surplus.

Table I: Key Balance Sheet Indicators

(In US$ billions unless indicated otherwise)	**2022**	2021	2020	2019	2018	Y/Y change (%)
Capital and surplus	**114.4**	129.2	127.3	106.3	92.9	-11.4
Total assets	**283.4**	283.5	281.3	244.3	216.1	0.0
Total liabilities	**169.0**	154.3	154.1	138.0	123.3	9.5
NWP/equity (in percent)	**57.8**	45.7	38.7	43.2	40.7	26.4
Reserve leverage (in percent)	**97.9**	79.4	81.8	85.1	89.3	23.2

Table II: Key Income Statement Indicators

(In US$ billions)	**2022**	2021	2020	2019	2018	Y/Y change (%)
Net written premiums	**66.1**	59.1	49.2	45.9	37.8	11.9
Net earned premiums	**62.2**	55.2	47.6	44.6	39.2	12.8
Total expenses	**18.7**	16.3	14.7	13.8	12.8	15.0
Total claims	**39.5**	37.0	35.9	31.2	27.2	6.8
Investment income	**1.2**	4.6	7.1	6.4	3.8	-73.3
Underwriting income	**7.9**	5.0	-0.3	0.6	1.6	58.7
Net income	**3.8**	13.9	7.1	11.3	3.1	-72.6

With regard to operational performance, claims and total expenses increased by 6.8% and 15.0% y/y respectively, which resulted in a combined ratio of 93.6% (Tables II and VI). The expense ratio increased by 1.9% y/y.

Table III: Aggregate Capital Structure

(In US$ billions unless indicated otherwise)	**2022**	**2021**	2020	2019	2018	Y/Y change (%)
Capital and surplus	**114.4**	129.2	127.3	106.3	92.9	-11.4
Insurance reserves	**112.0**	102.6	104.1	90.5	82.9	9.1
Financial leverage (In percent)	**247.7**	219.4	221.1	229.8	232.8	12.9
Equity ratio (In percent)	**40.4**	45.6	45.2	43.5	43.0	-11.4
Reserve ratio (In percent)	**39.5**	36.2	37.0	37.0	38.4	9.2

Between FY-2021 and FY-2022, financial leverage (i.e., assets relative to capital and surplus) increased by 12.9% to 247.7% due to the drop in capital and surplus. The reserve ratio increased by 9.1% y/y.

PROFITABILITY AND FINANCIAL INDICATORS

Table IV: Summary Profitability Indicators

(In US$ billions unless indicated otherwise)	**2022**	**2021**	2020	2019	2018	Y/Y change (%)
Loss ratio	**63.5**	67.1	75.4	70.1	69.3	-5.3
Investment income/net income	**32.3**	33.1	99.7	56.7	123.2	-2.4
Investments income/reserves	**1.1**	4.5	6.8	7.1	4.6	-75.5
Investment income/assets	**0.4**	1.6	2.5	2.6	1.8	-73.3
Total investments (In US$ billions)	**139.0**	146.8	151.0	126.1	113.0	-5.3
Investment income (In US$ billions)	**1.2**	4.6	7.1	6.4	3.8	-73.3

Profitability, measured by net income, decreased. Underwriting income stood at $7.9 billion for the year (Table II). Investment income represents 32.3% of total net income, a drop of 2.4% from FY-2021.

[4] Equity Ratio=1/Financial Leverage. See Table III.

Table V: Summary Financial Indicators

(In percent)	2022	2021	2020	2019	2018	Y/Y change (%)
Return on Assets (RoA)	1.3	4.9	2.5	4.6	1.4	-72.6
Return on Equity (RoE)	3.3	10.8	5.6	10.6	3.3	-69.1
Return on Investment (RoI)	0.9	3.1	4.7	5.1	3.4	-71.8

Financial indicators declined in FY-2022. Aggregate RoA decreased to 1.3%. RoE decreased to 3.3% and RoI dropped to 0.9%.

ACTUARIAL INDICATORS

Table VI: Actuarial Indicators

(In percent unless indicated otherwise)	2022	2021	2020	2019	2018	Y/Y change (%)
Loss ratio	63.5	67.1	75.4	70.1	69.3	-5.3
Expense ratio	30.0	29.5	30.8	31.0	32.7	1.9
Combined ratio	93.6	96.6	106.2	101.0	102.0	-3.1
Claims/reserves	35.3	36.1	34.5	34.5	32.8	-2.1
Reins. assets (In US$ billions)	34.3	31.2	24.9	27.3	25.9	9.9

The combined ratio dropped by 3.1% y/y to 93.6%. The loss ratio dropped by 5.3% during the year, while the expense ratio increased by 1.9%. Reinsurance assets increased by 9.9%, reaching $34.3 billion.

ASSET QUALITY AND LIQUIDITY INDICATORS

Table VII: Asset Quality Indicators – Asset Classes

(In percent)	2022	2021	2020	2019	2018	Y/Y change (%)
Sovereigns/total investments	16.5	15.1	14.2	14.9	13.8	9.2
Corporate bonds/total investments	46.2	48.6	50.9	51.1	53.0	-4.9
RMBS/total investments	6.9	7.7	8.5	9.9	11.8	-10.6
CMBS/total investments	11.3	9.4	8.4	8.9	8.9	20.3
Bond mutual funds/ total investments	1.2	1.2	1.2	1.3	1.2	-3.1
Equities/total investments	5.8	7.2	7.5	5.8	4.8	-19.5
Equity-type investments/total investments	9.8	8.8	7.1	5.8	6.4	11.7
Investments in mortgage loans/total investments	2.3	2.1	2.2	2.3	0.1	14.1

Note: Equity-type investments refer to hedge funds, mutual funds and, in general, packaged-style investments. The majority of residential MBS are issued in the United States.

Table VIII: Asset Quality Indicators – Rating Classes

(In percent)	**2022**	**2021**	2020	2019	2018	Y/Y change (%)
Investment grade investments/total investments	**75.7**	74.9	75.8	78.0	80.6	1.0
Non-investment grade investments/total investments	**4.9**	5.9	5.8	6.2	6.5	-17.0
Unrated investments/total investments	**3.9**	3.3	3.9	4.2	2.1	17.8
Non-fixed income investments/total investments	**15.6**	15.9	14.6	11.6	10.8	-2.3

The composition of investment assets remained somewhat stable. Most fixed-income securities were investment grade-rated, with 75.7% of total investments in this asset class. This was followed by 4.9% of total investments in the sub-investment grade, 3.9% of total investments being unrated and 15.6% of total investments in the non-fixed-income class.

Table IX: Liquidity Indicators

(In percent)	2022	2021	2020	2019	2018	Y/Y change (%)
Cash investments/ total assets	**17.9**	17.1	16.2	10.8	14.3	4.3
Cash investments/ total liabilities	**30.0**	31.4	29.6	19.2	25.0	-4.8
Cash investments/ reserves	**45.2**	47.3	43.8	29.3	37.2	-4.4
Cash investments/ claims	**128.0**	131.0	126.9	84.8	113.5	-2.3
BBB-AAA assets/total assets	**40.7**	43.3	42.7	44.6	49.0	-6.1
BBB-AAA assets/total liabilities	**68.2**	79.5	78.0	79.0	85.9	-14.3
BBB-AAA assets/ insurance reserves	**102.9**	119.6	115.5	120.4	127.8	-14.0
BBB-AAA assets/ claims	**291.4**	331.4	334.9	348.8	389.6	-12.1
Current assets/ current liabilities	**1,013.9**	1,105.3	1,615.6	1,270.3	1,479.6	-8.3

Note: AAA refers to the rating category of investment assets held by firms. Cash investments are: i) sovereign debt issued by a country in its own currency that is rated AA- or better, and ii) debt issued by government-owned and related entities that were explicitly guaranteed by that government, except for MBSs.

Firms hold sufficient liquidity buffers. A balanced cash-to-claims position eliminates any liquidity risk from declining investment returns. Cash investments comprise 17.9% of total assets, 30.0% of total liabilities and 128.0% of claims. The sum of BBB, A, AA and AAA securities account for 40.7% of total assets and covers 68.2% of total liabilities and 291.4% of claims.

GLOSSARY

AAA-BBB are the generic classifications of the highest to lowest rating assigned by a rating agency for an asset, security or entity that remains investment-grade.

Actuarial indicator is an indicator based on outcomes from the evolution of a portfolio of insured risks. Each actuarial indicator excludes any investment or financing activity.

Capital gain is the realised profit from the sale of a financial asset due to its appreciation.

Capital structure is the composition of liabilities that fund the operations and the assets of a (re)insurance company.

Combined ratio is the sum of the expense ratio and claims ratio.

Earned premium is the premium that is recorded as income in the income statement of a (re)insurer. It is usually calculated on a pro-rata basis.

Expense ratio is the ratio of expenses paid within a period over the NWP written within that period.

Financial leverage is based on the average total assets divided by the average total common equity, with the average taken between the beginning and ending balance.

Gross premium is the premium with loadings such as expenses, commissions and fees.

Insurance-Linked Securities (ILS) are financial instruments with payoffs that are contingent on the realisation of an insurable risk.

Insurance reserves are provisions held by the (re)insurer to meet future obligations that stem from underwriting activities.

Loss ratio is the ratio of claims incurred within a period over the NWP earned within that period.

Net premium is the premium left after the reinsurance premium has been paid.

Reinsurance recoverables are estimates of the expected payments made to the cedant by the reinsurer.

Reserve leverage is the ratio between premium reserve and shareholder equity (defined as share capital plus additional paid-in capital plus retained earnings).

Return on Assets (RoA) is calculated by dividing the net income by the value of total assets over the same period.

Return on Equity (RoE) is calculated by dividing net income by the value of shareholder equity over the same period.

Return on Investment (RoI) is calculated by dividing investment income by the value of investment assets over the same period.

Seniority (capital structure) is the specified way in which holders of financing instruments of a corporation incur its losses and distribute its assets and profits.

Shareholder equity is the difference between assets and liabilities, including subordinated debt.

Subordinated debt is debt with seniority that is junior to policyholder claims on a (re)insurer.

Underwriting profit (loss) is the profit (loss) attributed to the operations of a (re)insurer by excluding all other activities other than underwriting and claims processing.

Written premium is the premium that the (re)insurer collects from the policyholder but is not recorded as income in the profit and loss statement.

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