Swiss Re

Half-Year Report

2023

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Swiss Re Ltd
Swiss Re Ltd is the holding company of the Swiss Re Group. Its shares are listed in accordance with the International Reporting Standard on the SIX Swiss Exchange and trade under the symbol SREN.

Financial highlights

For the six months ended 30 June

USD millions, unless otherwise stated	2022	2023	Change in %
Group			
Net income attributable to shareholders	157	**1 447**	–
Premiums earned and fee income	21 204	**22 137**	4
Earnings per share in CHF	0.56	**4.56**	–
Shareholders' equity (31.12.2022/30.06.2023)	12 699	**12 680**	0
Return on equity in %[1]	1.6	**22.8**	
Return on investments in %	1.2	**2.8**	
Net operating margin in %[2]	2.3	**9.0**	
Number of employees[3] (31.12.2022/30.06.2023)	14 408	**15 042**	4
Property & Casualty Reinsurance			
Net income attributable to shareholders	316	**904**	186
Premiums earned	10 550	**11 369**	8
Combined ratio in %[4]	98.5	**94.7**	
Net operating margin in %[2]	5.3	**11.6**	
Life & Health Reinsurance			
Net income attributable to shareholders	2	**393**	–
Premiums earned and fee income	7 529	**7 761**	3
Net operating margin in %[2]	1.6	**7.0**	
Corporate Solutions			
Net income attributable to shareholders	220	**323**	47
Premiums earned	2 883	**2 566**	–11
Combined ratio in %[4]	93.2	**91.0**	
Net operating margin in %[2]	10.1	**15.3**	

[1] Return on equity is calculated by dividing annualised net income attributable to shareholders by average shareholders' equity.
[2] Net operating margin is calculated as "Income before interest and income tax expense" divided by "Total revenues" excluding "Net investment result – unit-linked business".
[3] Regular staff.
[4] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.

Share performance & ratings

Share vs benchmarks
As of 30 June 2023

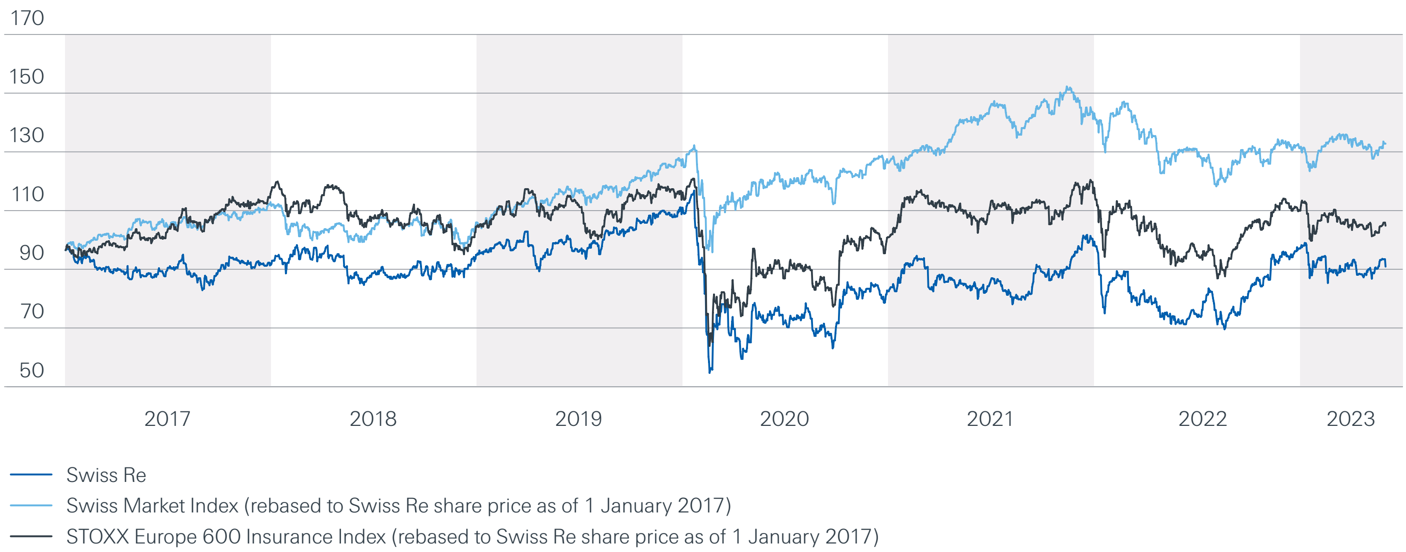
Share performance in %, CHF	1 January 2017 to 30 June 2023 (p.a.)	2023 YTD
Swiss Re	–1.1	4.1
Swiss Market Index	5.0	5.1
STOXX Europe 600 Insurance Index	1.4	0.3

Share price in CHF	90.04
Market capitalisation in CHF millions	26 148

Ratings
As of 30 June 2023

	Standard & Poor's	Moody's	A.M.Best
Rating	AA–	Aa3	A+
Outlook	Negative	Stable	Stable
Last update	21 February 2023	27 June 2023	18 August 2022

Creating shareholder value



Letter to shareholders

Dear Shareholders,
In an environment where increased risk awareness prevails, the role of reinsurance as a pillar of resilience is again becoming more relevant, creating positive momentum for our industry. In this market environment, Swiss Re posted solid results for the first half of 2023, with a Group net income of USD 1.4 billion, up from USD 157 million a year ago. Second-quarter net income rose to USD 804 million, up from USD 405 million for the same period in 2022.

Given the positive contribution of all our main businesses, and the strong outcome of Property & Casualty Reinsurance (P&C Re) renewals year-to-date, we remain focused on achieving our full-year financial targets, including a Group net income of more than USD 3 billion.

Our results also benefitted from the higher interest rate environment. The abrupt end to more than a decade of ultra-loose monetary policy has helped lift returns on our investments to 2.8%. Our recurring income yield rose to 3.3% for the first half of 2023, from 2.6% for the full year 2022, while our fixed income reinvestment yield climbed to a healthy 4.6% for the second quarter of 2023.

Our capital position remains very strong, with the Group Swiss Solvency Test (SST) ratio well above the target range of 200–250%. This sturdy foundation enabled Swiss Re to capitalise on attractive growth opportunities fanned by market tailwinds. Through the first six months, net premiums earned and fee income for the Group increased 4.4% to USD 22.1 billion. At constant foreign exchange rates, net premiums earned and fee income grew by 6.6%.

P&C Re reported a first-half net income of USD 904 million, up from USD 316 million a year ago. Lower losses from large natural catastrophes in the second quarter contributed to this robust result. Natural catastrophe claims amounted to USD 634 million[1], down nearly a third from the same period in 2022, mostly due to first-quarter events including the tragic earthquake in Turkey and Syria, as well as Cyclone Gabrielle and flooding in New Zealand.

Net premiums earned in P&C Re stood at USD 11.4 billion, up from USD 10.6 billion, supported by rising prices during renewal rounds in January and April. The first-half combined ratio improved to 94.7%[2], a marked enhancement from 97.2% in the first quarter. We expect the focus of upcoming client discussions to remain on managing their exposure to the increasing frequency and severity of natural catastrophes.

Life & Health Reinsurance (L&H Re) posted a first-half net income of USD 393 million, well above the USD 2 million net income reported for the same period in 2022. While we saw a reduction in COVID-19 mortality, the first-half result was affected by elevated mortality in the US, mostly from the winter months.

Net first-half premiums earned and fee income for L&H Re increased to USD 7.8 billion, up from USD 7.5 billion a year ago. At constant foreign exchange rates, net premiums earned and fee income increased by 6.4%.

Corporate Solutions reported a strong net income of USD 323 million, up from USD 220 million in the same period last year, confirming the Business Unit's resilience and disciplined underwriting as it navigated increased second-quarter claims activity. Large man-made losses fell to USD 113 million, less than in the prior-year period, which was impacted by the war in Ukraine. First-half natural catastrophe losses were also lower, and amounted to USD 20 million. Net premiums fell to USD 2.6 billion from USD 2.9 billion, largely as a result of the elipsLife sale in mid-2022. Corporate Solutions' first-half combined ratio improved to 91.0%[2].

Our digital white-label platform iptiQ resumed growth in the second quarter, reaching gross premiums written of USD 476 million for the first half of 2023, up from USD 455 million in the prior-year period. iptiQ, with approximately 2.2 million policies now in force, has improved operational performance across its activities.

Swiss Re remains fully committed to its sustainability strategy, including our commitment to achieving net-zero greenhouse gas (GHG) emissions from our own operations by 2030 and from our investment and underwriting portfolios by 2050.

Across Swiss Re, our management teams have also made substantial progress in advancing structural changes which came into effect in April, making our organisation simpler and nimbler. This transformation is expected to boost efficiency and accelerate decision-making by flattening hierarchies and bringing our company closer to clients to serve them better.

[1] Net of reinstatement premiums of USD 35 million.
[2] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.

Jacques de Vaucleroy
Vice Chairman of the Board of Directors

Christian Mumenthaler
Group CEO

Amid the uncertain environment that has become a hallmark of our times, the path we have embarked on lays a solid foundation for future performance.

Macroeconomic volatility, Russia's ongoing war with Ukraine, and overall heightened geopolitical risk in the first half of 2023, are all emblematic of the volatile risk landscape that has persisted since the COVID-19 pandemic began, and which is likely to remain with us. Climate change continues to take its toll in the form of extreme weather, causing wildfires, convective storms, heatwaves, droughts and flooding across multiple geographies.

We are closely monitoring upside inflation risk and the threat of a hard landing in major economies, and tracking developments in Ukraine. This tragedy continues to inject tension into the geopolitical situation and poses a threat to global supply chains.

Our second-half performance will be influenced by how these events unfold, demanding that our cautious optimism be accompanied by vigilance.

With persistent perils once again highlighting the value of reinsurers, Swiss Re remains focused on underwriting excellence and cost discipline as we partner with clients on our shared mission: making the world more resilient. To our employees, we extend our appreciation for their dedication and hard work towards reaching this goal.

And we thank you, our shareholders, for your continued loyalty and support.

Zurich, 4 August 2023

Jacques de Vaucleroy
Vice Chairman of the Board of Directors

Christian Mumenthaler
Group CEO

Group results

Swiss Re reported a Group net income of USD 1.4 billion for the first half of 2023, with a second quarter profit of USD 804 million.

Swiss Re reported a net income of USD 1.4 billion for the first six months of 2023, compared with USD 157 million in the same period of the prior year. Main drivers for this result were contained natural catastrophe losses in the first half of the year, Life & Health Reinsurance's (L&H Re) performance returning to pre-pandemic levels and a strong result for Corporate Solutions.

The Group absorbed large natural catastrophe claims of USD 0.7 billion in the first six months of 2023.

Property & Casualty Reinsurance (P&C Re) reported a net income of USD 904 million in the first half of 2023, compared with USD 316 million in the same period in 2022. This increase was driven by a solid investment result and low level of natural catastrophe claims in the second quarter. P&C Re absorbed large natural catastrophe losses of USD 634 million[1], mainly relating to the earthquake in Turkey and Syria, Cyclone Gabrielle and flooding in New Zealand, all of which took place in the first quarter of 2023.

L&H Re reported a net income of USD 393 million compared with a net income of USD 2 million in the prior-year period. Compared with 2022, L&H Re benefitted from much lower COVID-19 claims as well as from higher investment income. However, there was elevated mortality in the US from the winter months.

Corporate Solutions reported a net income of USD 323 million for the first half of 2023, compared with USD 220 million in the prior-year period. This strong result was achieved despite increased man-made claims activity in the second quarter of 2023, confirming the improved resilience of the business and disciplined underwriting. In addition, Corporate Solutions benefitted from higher investment income.

Shareholders' equity remained stable at USD 12.7 billion as of 30 June 2023, compared with end of December 2022. The payment to shareholders of USD 1.9 billion for the 2022 regular dividend was partially offset by the net income for the first half of 2023 and unrealised gains on fixed income securities.

Return on equity (ROE) was 22.8% for the first half of 2023, compared with 1.6% for the prior-year period.

Earnings per share for the first half of 2023 were USD 5.00 or CHF 4.56, compared with USD 0.54 or CHF 0.56 for the first half of 2022.

Book value per share decreased to USD 43.67 or CHF 39.07 at the end of June 2023, compared with USD 43.94 or CHF 40.65 at the end of 2022. Book value per share is based on shareholders' equity and excludes non-controlling interests.

Business performance

Net premiums earned and fee income for the Group increased 4.4% with USD 22.1 billion, compared with USD 21.2 billion for the same period last year. At constant foreign exchange rates, premiums earned and fee income grew by 6.6%.

Net premiums earned by P&C Re stood at USD 11.4 billion, up from USD 10.6 billion in the prior-year period, reflecting the strong performance during renewals in January and April. Net premiums earned grew by 9.6% at constant foreign exchange rates.

P&C Re's combined ratio was 94.7%[2] in the first six months of 2023, compared with 98.5% in the same period last year.

L&H Re's net premiums earned and fee income increased slightly to USD 7.8 billion in the first half from USD 7.5 billion in the prior-year period. Net premiums earned and fee income increased by 6.4% at constant foreign exchange rates.

Corporate Solutions' net premiums earned decreased to USD 2.6 billion in the first half of 2023 from USD 2.9 billion in the prior-year period, reflecting the partial sale of the elipsLife business in mid-2022. At constant foreign exchange rates and excluding the impact of the elipsLife sale, the comparative increase was 3.9%, driven by new business growth in selected focus portfolios, partially offset by conscious reductions in professional liability lines.

The Corporate Solutions combined ratio improved to 91.0%[2] for the first half of 2023 from 93.2% for the same period of 2022.

iptiQ continues to focus on improving operational performance. iptiQ increased gross premiums written in the first half of 2023 by 4.6% versus the same period in 2022 to USD 476 million, with positive contributions from EMEA and the Americas. At constant exchange rates, gross premiums written grew 6.3%, while adjusted gross income increased 21.1% compared with the first half of 2022.

Alternative Capital Partners' activities generated USD 74 million in fee and commission revenues in the first half of 2023, compared with USD 43 million in the same period in 2022. These revenues are reported under acquisition costs and under other revenues.

[1] Net of reinstatement premiums of USD 35 million.

[2] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.

Investment result and expenses

The Group's non-participating investment portfolio increased to USD 107.0 billion as of 30 June 2023 from USD 105.7 billion at the end of 2022, reflecting the impact of a weaker US dollar, partially offset by rising interest rates.

The return on investment was 2.8% for the first six months of 2023, compared with 1.2% for the same period in 2022. The result is driven by higher recurring income and an improved result across equites and private equity.

The Group's non-participating net investment income was USD 1.9 billion for the first six months of 2023, compared with USD 1.3 billion for the first six months of 2022, driven by reinvestment into higher yields.

The Group's recurring income yield for the first six months of 2023 was 3.3%, up from 2.3% in the prior-year period. The fixed income reinvestment yield stood at 4.6% in the second quarter of 2023.

The Group reported non-participating net realised gains of USD 0.1 billion for the first six months of 2023, compared with losses of USD 0.2 billion in the first six months of 2022.

Acquisition costs for the Group increased to USD 4.3 billion, compared with USD 3.9 billion in the same period of the previous year.

Operating expenses slightly increased to USD 1.8 billion from USD 1.7 billion in the prior-year period.

USD millions	2022	2023	Change in %
Revenues			
Gross premiums written	26 603	27 774	4
Net premiums written	24 582	25 336	3
Change in unearned premiums	–3 521	–3 314	–6
Premiums earned	21 061	22 022	5
Fee income from policyholders	143	115	–20
Net investment income – non-participating business	1 311	1 863	42
Net realised investment gains/losses – non-participating business	–240	124	–
Net investment result – unit-linked business	–72	–15	–79
Other revenues	35	37	6
Total revenues	22 238	**24 146**	9
Expenses			
Claims and claim adjustment expenses[1]	–8 935	–8 977	0
Life and health benefits[1]	–7 087	–6 749	–5
Return credited to policyholders	–90	–156	73
Acquisition costs	–3 946	–4 325	10
Operating expenses	–1 659	–1 765	6
Total expenses before interest expenses	–21 717	**–21 972**	1
Income before interest and income tax expense	521	**2 174**	–
Interest expenses	–300	–319	6
Income before income tax expense	221	**1 855**	–
Income tax expense	–61	–405	–
Net income before attribution of non-controlling interests	160	**1 450**	–
Income/loss attributable to non-controlling interests	–3	–3	0
Net income attributable to shareholders	157	**1 447**	–

[1] The Group has revised the presentation of the medical business of Elips Versicherungen AG and starting from 2023 reports it under claims and claim adjustment expenses. Comparative information was adjusted accordingly.

Interest expenses remained stable at USD 0.3 billion.

The Group reported a tax charge of USD 405 million on a pre-tax income of USD 1.9 billion for the first six months of 2023, compared with a tax charge of USD 61 million on a pre-tax income of USD 221 million for the same period in 2022. This translates into an effective tax rate in the current and prior-year reporting periods of 21.8% and 27.6%, respectively. The tax rate in the first half of 2023 was driven by profits earned in higher tax jurisdictions, tax charges from non-deductible expenses and tax charges from foreign currency translation differences between statutory and US GAAP accounts, partially offset by tax benefits from non-taxable income and prior-year adjustments.

Property & Casualty Reinsurance

Property & Casualty Reinsurance (P&C Re) benefitted from a low natural catastrophe burden in the second quarter of 2023.

P&C Re reported a net income of USD 904 million in the first half of 2023, compared with a net income of USD 316 million in the same period of 2022. The result benefitted from a solid investment result and the low level of natural catastrophe claims in the second quarter.

Large natural catastrophe losses of USD 634 million[1] in the first half of 2023 relate to the earthquake in Turkey and Syria, as well as Cyclone Gabrielle and flooding in New Zealand, all of which occurred in the first quarter of 2023. Large man-made losses amounted to USD 76 million in the first half of 2023.

The net operating margin was 11.6%, compared with 5.3% in the same period of 2022.

Premiums
Gross premiums written increased by 6.7% to USD 15.3 billion in the first half of the year. The increase reflects the strong performance during renewals in January and April, while foreign exchange movements were unfavourable.

Net premiums earned increased by 7.8% to USD 11.4 billion in the first half of the year, largely due to higher volumes and price increases. At stable foreign exchange rates, net premiums earned would have increased by 9.6%.

Combined ratio
The combined ratio for the first half of 2023 was 94.7%[2], compared with 98.5% in the same period of last year. The combined ratio benefitted from an improved portfolio quality and benign natural catastrophe experience in the second quarter, partially offset by strain on casualty.

Administrative expense ratio
The administrative expense ratio increased to 5.8% in the first six months of 2023 from 5.3% in 2022, driven by higher expenses due to inflation.

Lines of business
The property combined ratio improved to 74.9% from 98.8% in the same period of 2022. The combined ratio reflects strong underlying profitability and favourable large natural catastrophe experience.

The casualty combined ratio increased to 118.8%, compared with 100.8% in the same period last year. The result includes reserve additions in liability and motor.

The specialty combined ratio improved to 76.0% for the first six months of 2023 from 90.8% in 2022, supported by favourable current and prior-year developments.

Investment result
Return on investment was 2.0% for the first six months of 2023, compared with 0.8% in the same period of 2022, reflecting an increase in the investment result of USD 378 million.

Net investment income increased by USD 270 million to USD 779 million in the first six months of 2023 compared with the prior-year period, driven mainly by the impact of higher income on fixed income securities.

Net realised losses were USD 149 million in the first six months of 2023, compared with net realised losses of USD 257 million for the prior-year period. The improvement was mainly driven by equity and private equity investments.

Insurance-related investment results and foreign exchange gains/losses are not included in the figures above.

Outlook
Swiss Re had successful mid-year renewals and was able to improve margins significantly. Portfolio quality was further improved by targeted management actions.

Property natural catastrophe markets have stabilised at attractive levels with the primary focus on profitability. Competition has increased across markets, particularly on higher layers. Terms and conditions and higher attachment points have been adjusted in renewals to date and are therefore expected to be less of a focus going forward.

Casualty continued to see rate increases in US liability and US motor, offset by loss trends. Inflationary assumptions on longer-tail lines are expected to further impact profitability levels, triggering selective management actions and generally limiting opportunities for growth. Inflow of new capital and increased competition in financial lines continues to influence the market dynamics.

Specialty has continued growth opportunities in engineering with structural tailwinds, offset by increasing competition. Aviation and marine markets have stabilised, with opportunities in selected sub-portfolios.

P&C Re continues to see traction in transactions, with capital management as a key theme.

P&C Re remains focused on achieving the reported combined ratio target of less than 95% for the full year.

[1] Net of reinstatement premiums of USD 35 million.
[2] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.

Life & Health Reinsurance

Life & Health Reinsurance (L&H Re) income returned to pre-pandemic levels in the first half of 2023.

L&H Re reported a net income of USD 393 million for the first half of 2023, compared with a net income of USD 2 million for the same period in 2022. Compared to last year, L&H Re benefitted from much lower COVID-19 claims as well as from higher investment income. However, there was elevated mortality in the US from the winter months.

Premiums
Net premiums earned and fee income increased by 3.1% to USD 7.8 billion for the first six months of 2023, compared with USD 7.5 billion in the first half of 2022. At constant foreign exchange rates, the growth was 6.4%, reflecting higher volumes across EMEA and Asia supported by transactions.

Gross premiums written in the first half of 2023 increased by 6.8% to USD 8.7 billion, compared with the first six months of 2022.

Net operating margin
The net operating margin was 7.0% for the first six months of 2023. This compares with a margin of 1.6% reported in the same period of 2022.

Management expense ratio
The management expense ratio for the first half of the year was 5.0%, a slight decrease from 5.1% in the prior-year period. This reflected higher operating revenues, while expenses remained relatively stable over the year.

Lines of business
Earnings before interest and income tax expenses (EBIT) for the life business increased to USD 248 million in the first six months of 2023, from USD –157 million in the prior-year period. Compared with 2022, the result benefitted from a strong decline in COVID-19 claims, however, it remained affected by elevated mortality in the US from the recent winter months.

EBIT for the health business was USD 300 million in the first six months of 2023, compared with USD 250 million in the prior-year period. The result benefitted from higher allocated investment income due to increased reinvestment yields, while the operating result was slightly lower than last year.

Investment result
The return on investment was 4.3% in the first six months of 2023, compared with 2.7% in the same period of 2022, with an increase in the investment result of USD 254 million.

Net investment income increased by USD 158 million to USD 655 million for the first six months of 2023. The recurring income yield was 3.9% in the reporting period, compared with 3.0% in the prior-year period, reflecting the impact of reinvestment into higher yields.

Net realised gains were USD 99 million for the first six months of 2023, compared with USD 3 million for the same period in 2022. The increase reflects an improved result from equity securities.

Insurance-related investment results as well as foreign exchange gains/losses are not included in the figures above.

Outlook
The pandemic led to disruption in sales and claims activity for insurers, however, this is now slowing down. The increase in life and health treaty reinsurance new business continues to emerge, driven by increased customer awareness, with greater growth expected in emerging markets.

Cession rates on normal core business are expected to remain broadly stable in major markets, while mortality premiums are expected to increase as a response to COVID-19-related losses.

Recent increases in interest rates are expected to benefit the business in the long term. L&H Re sees a continued strong focus from clients on capital, risk and balance sheet optimisation in mature markets, leading to ongoing opportunities for large transactions.

L&H Re also sees opportunities to respond to the expanding need for health protection, driven by ageing societies, and is applying its risk knowledge to help reduce the protection gap in all regions.

L&H Re continues to target a net income of approximately USD 900 million for 2023.

Corporate Solutions

Corporate Solutions continues to deliver strong results.

Corporate Solutions reported a net income of USD 323 million for the first half of 2023, compared with USD 220 million in the prior-year period.

Corporate Solutions' continued strong profit contribution to the Group reflects a robust underlying business performance, despite some market headwind, and strong investment income within the first six months of the year. The improved resilience of the business and disciplined underwriting enabled the Business Unit to absorb increased man-made claims activity in the second quarter of the year.

Total current-year large losses of USD 133 million for the first half of 2023 were lower compared with the prior-year period. The current period benefitted from overall low participation in large natural catastrophe events. This compensated for a higher frequency of large man-made losses in the second quarter. Man-made losses amounted to USD 113 million for the half-year period.

The net operating margin was 15.3%, compared with 10.1% for the prior-year period.

Premiums

Gross premiums written decreased to USD 3.6 billion in the first half of 2023 from USD 4.2 billion in the prior-year period, mainly driven by the partial sale of the elipsLife business in mid-2022. The business reflects increasing economic uncertainty, leading to a conscious reduction in professional liability lines, offset by stable price momentum and new business growth in selected focus portfolios.

Net premiums earned decreased to USD 2.6 billion in the first half of 2023 from USD 2.9 billion in the prior-year period, reflecting the partial sale of the elipsLife business in mid-2022. At constant foreign exchange rates and excluding the impact of the elipsLife sale, the comparative increase was 3.9%, driven by new business growth in selected focus portfolios, partially offset by conscious reductions in professional liability lines.

Combined ratio

Corporate Solutions' combined ratio improved to 91.0%[1] for the first six months of 2023, compared with 93.2% in the same period of 2022. The better performance illustrates improved resilience of the business and disciplined underwriting, resulting in lower-than-expected exposure to large loss events mainly in property and credit. This enabled the Business Unit to absorb additional assumption updates.

Lines of business

The property combined ratio for the first six months of 2023 improved to 65.2% from 67.0% in the prior-year period. The line of business benefitted mainly from lower-than-expected claims activity and new business growth in selected focus portfolios, along with rate increases earning through.

The casualty combined ratio[2] increased to 110.6% in the first six months of 2023, compared with 103.3% in the same period of 2022. This was mainly a result of elevated prior-year man-made losses on professional liability business written before the execution of the transformation agenda in 2019, as well as additional assumption updates for improved resilience to future claims inflation.

The specialty combined ratio for the first six months of 2023 improved by 8.1 percentage points to 94.6%, largely driven by lower reserve additions related to the war in Ukraine and improved profitability from the credit line of business.

[1] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.
[2] Medical business of Elips Versichungen AG in Ireland reported within Casualty for Q2/H1 2022 (restated) and Q2/H1 2023.

Investment result
The return on investment was 2.6% in the first six months of 2023, compared with 0.6% in the same period of 2022, with a significant increase in the investment result of USD 126 million.

Net investment income increased by USD 97 million to USD 173 million for the first six months, compared with the same period in 2022, reflecting higher recurring income alongside higher yields.

Net realised losses were USD 10 million in the first six months of 2023, compared with net losses of USD 39 million in the first six months of 2022, reflecting the absence of market value losses on equity securities, partially offset by credit hedge losses.

Insurance-related derivative results and foreign exchange gains/losses are not included in the investment figures.

Corporate Solutions offers insurance protection against weather perils and other risks, which is accounted for as derivatives. Insurance in derivative form delivered net realised gains of USD 23 million in the first six months of 2023, compared with gains of USD 77 million in the same period of 2022. The prior-year period benefitted both from favourable weather outcomes and deals written earlier in the season at very high margins for cold winter protection due to the European energy crisis.

Outlook
Corporate Solutions is well on track to reach its full-year combined ratio target of less than 94%.

The significant risk-adjusted price gains experienced in the commercial insurance market in 2020 and 2021 continued at lower levels during 2022 and the first half of 2023. Corporate Solutions expects similar developments during the second half of the year.

High inflation and large losses from both Hurricane Ian and the war in Ukraine will continue to place upward pressure on rates to compensate for increased cost of capital. However, challenging macroeconomic conditions are putting certain segments under pressure and, as a result of shrinking market capacity, rising retention levels may run the risk of reducing real premium growth.

Income statement

For the six months ended 30 June

USD millions	Note	2022	2023
Revenues			
Gross premiums written	4	26 603	**27 774**
Net premiums written	4	24 582	**25 336**
Change in unearned premiums		–3 521	**–3 314**
Premiums earned	3	21 061	**22 022**
Fee income from policyholders	3	143	**115**
Net investment income – non-participating business[1]	7	1 311	**1 863**
Net realised investment gains/losses – non-participating business[2]	7	–240	**124**
Net investment result – unit-linked business	7	–72	**–15**
Other revenues		35	**37**
Total revenues		22 238	**24 146**
Expenses			
Claims and claim adjustment expenses[3]	3	–8 935	**–8 977**
Life and health benefits[3]	3	–7 087	**–6 749**
Return credited to policyholders		–90	**–156**
Acquisition costs	3	–3 946	**–4 325**
Operating expenses		–1 659	**–1 765**
Total expenses before interest expenses		–21 717	**–21 972**
Income before interest and income tax expense		521	**2 174**
Interest expenses		–300	**–319**
Income before income tax expense		221	**1 855**
Income tax expense		–61	**–405**
Net income before attribution of non-controlling interests		160	**1 450**
Income/loss attributable to non-controlling interests		–3	**–3**
Net income attributable to common shareholders		157	**1 447**
Earnings per share in USD			
Basic	12	0.54	**5.00**
Diluted	12	0.54	**4.77**
Earnings per share in CHF[4]			
Basic	12	0.56	**4.56**
Diluted	12	0.56	**4.35**

[1] Total impairments for the six months ended 30 June of USD 3 million in 2022 and nil in 2023, respectively, were fully recognised in earnings.
[2] Total impairments for the six months ended 30 June of USD 52 million in 2022 and nil in 2023, respectively, were fully recognised in earnings.
[3] The Group has revised the presentation of the medical business of Elips Versicherungen AG and starting 2023 reports it under claims and claim adjustment expenses. Comparative information was adjusted accordingly.
[4] The translation from USD to CHF is shown for informational purposes only and has been calculated using the Group's average exchange rates.

The accompanying notes are an integral part of the Group financial statements.

Statement of comprehensive income

For the six months ended 30 June

USD millions	2022	2023
Net income before attribution of non-controlling interests	160	**1 450**
Other comprehensive income, net of tax:		
Change in net unrealised investment gains/losses	–7 534	**395**
Change in other-than-temporary impairment	–7	
Change in foreign currency translation	117	**–91**
Change in adjustment for pension benefits	314	**–14**
Change in credit risk of financial liabilities at fair value option	–1	**–1**
Other comprehensive income/loss attributable to non-controlling interests		**18**
Total comprehensive income/loss before attribution of non-controlling interests	–6 951	**1 757**
Comprehensive income/loss attributable to non-controlling interests	–3	**–21**
Total comprehensive income/loss attributable to common shareholders	–6 954	**1 736**

Reclassification out of accumulated other comprehensive income
For the six months ended 30 June

2022 USD millions	Net unrealised investment gains/losses[1]	Other-than-temporary impairment	Foreign currency translation[1, 2]	Adjustment for pension benefits[3]	Credit risk of financial liabilities at fair value option	Accumulated other comprehensive income
Balance as of 1 January	2 809	–6	–6 216	–549	4	–3 958
Change during the period	–10 624	–8	295	389	–1	–9 949
Amounts reclassified out of accumulated other comprehensive income	1 195			5		1 200
Tax	1 895	1	–178	–80		1 638
Balance as of period end	–4 725	–13	–6 099	–235	3	–11 069

2023 USD millions	Net unrealised investment gains/losses[1]	Other-than-temporary impairment	Foreign currency translation[1, 2]	Adjustment for pension benefits[3]	Credit risk of financial liabilities at fair value option	Accumulated other comprehensive income
Balance as of 1 January	–6 927	–8	–6 148	–425	3	**–13 505**
Impact of ASC 326[4]	25	8				**33**
Change during the period	583		–138	–14	–1	**430**
Amounts reclassified out of accumulated other comprehensive income	–104		–7	–5		**–116**
Tax	–84		54	5		**–25**
Balance as of period end	**–6 507**	**0**	**–6 239**	**–439**	**2**	**–13 183**

[1] Reclassification adjustment included in net income is presented in "Net realised investment gains/losses – non-participating business".
[2] Reclassification adjustment is limited to translation gains and losses realised upon sale or upon complete or substantially complete liquidation of an investment in a foreign entity.
[3] Reclassification adjustment included in net income is presented in "Operating expenses".
[4] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

The accompanying notes are an integral part of the Group financial statements.

Balance sheet

Assets

USD millions	Note	31.12.2022	30.6.2023
Investments	7, 8, 9		
Fixed income securities:			
Available-for-sale (including 12 355 in 2022 and 11 942 in 2023 subject to securities lending and repurchase agreements) (allowance for credit losses of 38 in 2023, amortised cost: 2022: 82 638; 2023: 84 174)		74 089	**76 118**
Trading (including 143 in 2022 and 953 in 2023 subject to securities lending and repurchase agreements)		484	**1 924**
Equity securities at fair value through earnings (including 12 in 2022 and 0 in 2023 subject to securities lending and repurchase agreements)		2 114	**688**
Policy loans, mortgages and other loans, net of allowance for credit losses of 26 in 2023		4 343	**4 757**
Investment real estate		2 931	**2 967**
Short-term investments (including 1 465 in 2022 and 1 086 in 2023 subject to securities lending and repurchase agreements)		8 907	**7 101**
Other invested assets, net of allowance for credit losses of 1 in 2023		8 794	**9 104**
Investments for unit-linked business (equity securities at fair value through earnings)		330	**310**
Total investments		101 992	**102 969**
Cash and cash equivalents (including 421 in 2022 and 165 in 2023 subject to securities lending, and 5 in 2022 and 3 in 2023 backing unit-linked contracts)		4 077	**4 316**
Accrued investment income		684	**698**
Premiums and other receivables, net of allowance for credit losses of 71 in 2022 and 84 in 2023		18 145	**22 050**
Reinsurance recoverable on unpaid claims and policy benefits, net of allowance for credit losses of 31 in 2022 and 66 in 2023		6 507	**6 441**
Funds held by ceding companies, net of allowance for credit losses of 11 in 2023		13 929	**15 419**
Deferred acquisition costs	6	8 121	**8 372**
Acquired present value of future profits	6	794	**755**
Goodwill		3 863	**3 916**
Income taxes recoverable		356	**475**
Deferred tax assets		8 284	**8 335**
Other assets		3 924	**5 284**
Total assets		170 676	**179 030**

The accompanying notes are an integral part of the Group financial statements.

Liabilities and Equity

USD millions	Note	31.12.2022	30.6.2023
Liabilities			
Unpaid claims and claim adjustment expenses	5	85 418	**85 826**
Liabilities for life and health policy benefits		20 925	**21 050**
Policyholder account balances		4 850	**4 757**
Unearned premiums		14 747	**18 721**
Funds held under reinsurance treaties		6 921	**8 259**
Reinsurance balances payable		1 837	**2 329**
Income taxes payable		254	**341**
Deferred and other non-current tax liabilities		6 011	**6 202**
Short-term debt	11	786	**501**
Accrued expenses and other liabilities		5 866	**7 540**
Long-term debt	11	10 252	**10 650**
Total liabilities		157 867	**166 176**
Equity			
Common shares, CHF 0.10 par value			
2022: 317 497 306; 2023: 317 497 306 shares authorised and issued		30	**30**
Additional paid-in capital		293	**336**
Treasury shares, net of tax		–1 398	**–1 284**
Accumulated other comprehensive income:			
Net unrealised investment gains/losses, net of tax		–6 927	**–6 507**
Other-than-temporary impairment, net of tax		–8	
Foreign currency translation, net of tax		–6 148	**–6 239**
Adjustment for pension and other post-retirement benefits, net of tax		–425	**–439**
Credit risk of financial liabilities at fair value option, net of tax		3	**2**
Total accumulated other comprehensive income		–13 505	**–13 183**
Retained earnings		27 279	**26 781**
Shareholders' equity		12 699	**12 680**
Non-controlling interests		110	**174**
Total equity		12 809	**12 854**
Total liabilities and equity		170 676	**179 030**

The accompanying notes are an integral part of the Group financial statements.

Statement of shareholders' equity

For the twelve months ended 31 December and the six months ended 30 June

USD millions	2022	2023
Common shares		
Balance as of 1 January	30	**30**
Balance as of period end	30	**30**
Additional paid-in capital		
Balance as of 1 January	266	**293**
Share-based compensation	13	**8**
Realised gains/losses on treasury shares	14	**35**
Balance as of period end	293	**336**
Treasury shares, net of tax		
Balance as of 1 January	–1 402	**–1 398**
Purchase of treasury shares	–44	**–8**
Issuance of treasury shares, including share-based compensation to employees	48	**122**
Balance as of period end	–1 398	**–1 284**
Net unrealised investment gains/losses, net of tax		
Balance as of 1 January	2 809	**–6 927**
Impact of ASC 326[1]		**25**
Changes during the period	–9 736	**395**
Balance as of period end	–6 927	**–6 507**
Other-than-temporary impairment, net of tax		
Balance as of 1 January	–6	**–8**
Impact of ASC 326[1]		**8**
Changes during the period	–2	
Balance as of period end	–8	**0**
Foreign currency translation, net of tax		
Balance as of 1 January	–6 216	**–6 148**
Changes during the period	68	**–91**
Balance as of period end	–6 148	**–6 239**
Adjustment for pension and other post-retirement benefits, net of tax		
Balance as of 1 January	–549	**–425**
Changes during the period	124	**–14**
Balance as of period end	–425	**–439**
Credit risk of financial liabilities at fair value option, net of tax		
Balance as of 1 January	4	**3**
Changes during the period	–1	**–1**
Balance as of period end	3	**2**

The accompanying notes are an integral part of the Group financial statements.

USD millions	2022	2023
Retained earnings		
Balance as of 1 January	28 632	**27 279**
Net income after attribution of non-controlling interests	472	**1 447**
Dividends on common shares	–1 825	**–1 850**
Impact of ASC 326[1]		**–95**
Balance as of period end	27 279	**26 781**
Shareholders' equity	12 699	**12 680**
Non-controlling interests		
Balance as of 1 January	110	**110**
Transactions with non-controlling interests		**44**
Income/loss attributable to non-controlling interests	8	**3**
Other comprehensive income attributable to non-controlling interests:		
Change in net unrealised investment gains/losses	–4	**4**
Change in foreign currency translation	–3	**14**
Dividends to non-controlling interests	–1	**–1**
Balance as of period end	110	**174**
Total equity	12 809	**12 854**

[1] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

The accompanying notes are an integral part of the Group financial statements.

Statement of cash flows

For the six months ended 30 June

USD millions	2022	**2023**
Cash flows from operating activities		
Net income attributable to common shareholders	157	**1 447**
Add income/loss attributable to non-controlling interests	3	**3**
Adjustments to reconcile net income to net cash provided/used by operating activities:		
Depreciation, amortisation and other non-cash items	292	**21**
Net realised investment gains/losses	313	**–101**
Income from equity-accounted investees, net of dividends received	145	**–13**
Change in:		
Technical provisions and other reinsurance assets and liabilities, net	1 286	**–267**
Funds held by ceding companies and under reinsurance treaties	–506	**–147**
Reinsurance recoverable on unpaid claims and policy benefits	177	**177**
Other assets and liabilities, net	–245	**–46**
Income taxes payable/recoverable	–103	**80**
Derivative financial instruments and collateral, net	1	**–119**
Net cash provided/used by operating activities	1 520	**1 035**
Cash flows from investing activities		
Fixed income securities:		
Sales	14 881	**11 905**
Maturities	2 558	**3 801**
Purchases	–19 476	**–18 052**
Net purchases/sales/maturities of short-term investments	330	**2 013**
Equity securities:		
Sales	1 719	**1 740**
Purchases	–838	**–292**
Securities purchased/sold under agreement to resell/repurchase, net	–780	**–83**
Cash paid/received for acquisitions/disposals and reinsurance transactions, net	–4	
Net purchases/sales/maturities of other investments	642	**–15**
Net purchases/sales/maturities of investments held for unit-linked business	–2	**14**
Net cash provided/used by investing activities	–970	**1 031**
Cash flows from financing activities		
Policyholder account balances, unit-linked business:		
Deposits	18	**5**
Withdrawals	–18	**–31**
Issuance/repayment of long-term debt	1 779	**717**
Issuance/repayment of short-term debt	–49	**–816**
Purchase/sale of treasury shares	–2	**126**
Dividends paid to shareholders	–1 825	**–1 850**
Dividends paid to non-controlling interests	–1	
Transactions with non-controlling interests		**44**
Net cash provided/used by financing activities	–98	**–1 805**

The accompanying notes are an integral part of the Group financial statements.

USD millions	2022	2023
Total net cash provided/used	452	**261**
Effect of foreign currency translation	–226	**–22**
Change in cash and cash equivalents	226	**239**
Cash and cash equivalents as of 1 January	5 051	**4 077**
Cash and cash equivalents as of 30 June	5 277	**4 316**

Interest paid was USD 205 million and USD 200 million (thereof USD 4 million and USD 4 million for letter of credit fees) for the six months ended 30 June 2022 and 2023, respectively. Tax paid was USD 164 million and USD 325 million for the six months ended 30 June 2022 and 2023, respectively.

Cash and cash equivalents include restricted cash and cash equivalents, for instance pledged cash and cash equivalents (please refer to Note 7 "Investments").

The accompanying notes are an integral part of the Group financial statements.

Notes to the Group financial statements

1 Organisation and summary of significant accounting policies

Nature of operations
The Swiss Re Group, which is headquartered in Zurich, Switzerland, comprises Swiss Re Ltd (the parent company) and its subsidiaries (collectively, the "Swiss Re Group" or the "Group"). The Swiss Re Group is a wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer as well as other insurance related services. Working through brokers and a network of offices around the globe, the Group serves a client base consisting of insurance companies, mid-to-large-sized corporations and public-sector clients.

Swiss Re Group consists of three business segments: Property & Casualty Reinsurance, Life & Health Reinsurance and Corporate Solutions.

Basis of presentation
The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (US GAAP). All significant intra-group transactions and balances have been eliminated on consolidation. The year-end balance sheet data presented was derived from audited financial statements. These interim financial statements do not include all disclosures that US GAAP requires on an annual basis and should be therefore read in conjunction with the Swiss Re Group's audited financial statements for the year ended 31 December 2022.

The Board of Directors of Swiss Re Ltd has decided that as of 1 January 2024 the Group's consolidated financial statements will be prepared in accordance with International Financial Reporting Standards (IFRS). The impact of the adoption on the Group's financial statements is being assessed. Financial statements for periods ending on or prior to 31 December 2023 will continue to be prepared in accordance with US GAAP.

Use of estimates in the preparation of financial statements
The preparation of financial statements requires management to make significant estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses as well as the related disclosure, including contingent assets and liabilities. The Swiss Re Group's liabilities for unpaid claims and claim adjustment expenses and policy benefits for life and health include estimates for premium, claim and benefit data not received from ceding companies at the date of the financial statements. In addition, the Group uses certain financial instruments and invests in securities of certain entities for which exchange trading does not exist. The Group determines these estimates based on historical information, actuarial analyses, financial modelling and other analytical techniques. Actual results could differ significantly from the estimates described above.

Subsequent events
Subsequent events for the current reporting period have been evaluated up to 3 August 2023. This is the date on which the condensed unaudited financial statements are available to be issued.

Adoption of new accounting standards
In June 2016, the FASB issued Topic 326, "Financial Instruments – Credit Losses", which replaces the incurred loss impairment methodology with a methodology that reflects current expected credit losses (CECL). The standard is applicable to all assets such as financial instruments that are measured at amortised cost, fixed income securities available-for-sale, premium receivables, funds withheld assets and reinsurance recoverable. The objective of the expected credit loss model is that a reporting entity recognises its estimate of expected credit losses incorporating forward-looking information in a valuation allowance for assets in scope. The Group adopted the standard on 1 January 2023 using a modified retrospective method. As of 1 January 2023, the impact of the adoption of the standard was a reduction in opening retained earnings of USD 95 million (net of tax). The Group also adopted the required disclosures within Note 3 "Insurance information" and Note 7 "Investments". Results for reporting periods prior to 1 January 2023 are presented in accordance with the previous guidance.

In January 2017, the FASB issued ASU 2017-04, "Simplifying the Test for Goodwill Impairment", an update to Topic 350, "Intangibles – Goodwill and Other". This ASU simplifies the subsequent measurement of goodwill and eliminates Step 2 from the goodwill impairment test. In computing the implied fair value of goodwill under Step 2, an entity has to perform procedures to determine the fair value of its assets and liabilities (including unrecognised assets and liabilities) at the impairment testing date following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Instead, under the amendments in this update, an entity should perform its regular goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognise an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognised should not exceed the total amount of goodwill allocated to that reporting unit. As amended by ASU 2019-10 "Effective Dates", ASU 2017-04 is effective for goodwill impairment tests in annual and interim periods beginning after 15 December 2022. The Group adopted the standard on 1 January 2023. The adoption did not have an impact on the Group's financial statements.

In October 2018, the FASB issued ASU 2021-08, "Accounting for Contract Assets and Contract Liabilities from Contracts with Customers", an update to Topic 805, "Business Combinations". Prior to the update, Topic 805 required all assets acquired and all liabilities assumed in a business combination to be recognized on the basis of the fair value as of the acquisition date. The amendments in ASU 2021-08 outline that contract assets and contract liabilities with a respective deferred revenue and deferred expense component acquired in a business combination should be recognized in accordance with ASC 606 "Revenue from Contracts with Customers" assuming the contractual terms as if the acquirer entered into the original contract on the same date with the same conditions when determining the recognition value. ASU 2021-08 is effective prospectively in annual and interim periods beginning after 15 December 2022. The Group adopted ASU 2021-08 as of 1 January 2023.

In March 2022, the FASB issued ASU 2022-01, "Fair Value Hedging — Portfolio Layer Method", an update to Topic 815, "Derivatives and Hedging". This ASU amends ASU 2017-12 issued in August 2017 to further simplify fair value hedge accounting. ASU 2017-12 established the "last-of-layer" method to enable the application of fair value hedging to a stated amount of closed portfolios of prepayable financial assets or one or more beneficial interests secured by a portfolio of prepayable financial instruments. The amendments in this update expand the scope of fair value hedge accounting permitting the application of the "portfolio-layer" method to portfolios of all financial assets, including both prepayable and non-prepayable financial assets. ASU 2022-01 is effective prospectively in annual and interim periods beginning after 15 December 2022. The Group adopted ASU 2022-01 as of 1 January 2023.

In September 2022, the FASB issued ASU 2022-04, "Disclosure of Supplier Finance Program Obligations", an update to Topic 405 "Liabilities- Supplier Finance Programs". This ASU applies to all entities that use supplier finance programs in connection with the purchase of goods and services and require that a buyer in a supplier finance program discloses sufficient information about the program to allow a user of financial statements to understand the program's nature, activity during the period, changes from period to period, and potential magnitude. ASU 2022-04 is effective retrospectively in annual and interim periods beginning after 15 December 2022, except for the amendment on rollforward information, which is effective in annual and interim periods beginning after 15 December 2023. The Group adopted ASU 2022-04 as of 1 January 2023 for the requirements that have become effective as of this date. The adoption did not have an impact on the Group's financial statements.

In March 2020, the FASB issued ASU 2020-04, "Facilitation of the Effects of Reference Rate Reform on Financial Reporting", an update to Topic 848, "Reference Rate Reform". In response to concerns about structural risks of interbank offered rates (IBORs) and, particularly, the risk of cessation of the London Interbank Offered Rate (LIBOR), regulators in several jurisdictions around the world have undertaken reference rate reform initiatives to identify alternative reference rates. The amendments in this update provide optional expedients and exceptions for applying US GAAP accounting principles to contracts, hedging relationships and other transactions that reference LIBOR or another reference rate expected to be discontinued because of these reference rate reform initiatives. The Group adopted ASU 2020-04 on 12 March 2020, which is the issuance date of the standard. There is a choice to apply the guidance by Topic or industry Subtopic at any time prospectively during the effective period from 12 March 2020 through 31 December 2024, with the effective period amended by ASU 2022-06 "Deferral of the Sunset Date of Topic 848", an update to Topic 848, "Reference Rate Reform". As of 30 June 2023, the Group applied the guidance to Topic 815 related to derivative contracts that were amended for LIBOR references due to the Adjustable Interest Rate (LIBOR) Act (the "LIBOR Act") which applies to US contracts that lack sufficient contractual provisions addressing the permanent cessation of LIBOR as well as to Topic 944 related to changes resulting from the replacement of discontinued reference rates included in contracts within the scope of Topic 944, "Financial Services – Insurance". The Group also applied the guidance to modifications of loan contracts within the scope of Topic 310 "Receivables" due to replacements of reference rates that are expected to be discontinued. These modifications are being accounted for by prospectively adjusting the effective interest rate.

In January 2021, the FASB issued ASU 2021-01, "Scope", an update to Topic 848, "Reference Rate Reform". Because of the broad population of derivatives affected by the market-wide transition to new reference rates (commonly referred to as the "discounting transition"), stakeholders analysed the accounting implications of the discounting transition against the available exceptions and expedients within Topic 848, "Reference Rate Reform", which led them to raise questions about the scope of that Topic. The amendments clarify the scope of Topic 848 and allow entities to apply certain optional provisions in Topic 848 to derivative instruments that undergo a modification of the interest rate used for margining, discounting, or contract price alignment because of the discounting transition that do not also reference LIBOR or another reference rate that is expected to be discontinued as a result of reference rate reform. The Group applied ASU 2021-01 as of 30 June 2023.

Although the Group has exposure to discontinued IBORs, the transition to the new risk-free reference rates did not have a material impact, mostly due to the transition relief measures in Topic 848, "Reference Rate Reform".

Future adoption of new accounting standards

In August 2018, the FASB issued ASU 2018-12, "Targeted Improvements to the Accounting for Long-Duration Contracts", an update to Topic 944, "Financial Services – Insurance". This ASU requires that the cash flows and net premium ratio will be updated for changes in insurance assumptions (eg mortality, morbidity, terminations) when measuring the liability for future policy benefits for nonparticipating traditional and limited-payment insurance and reinsurance contracts. There will no longer be a provision for adverse deviation. In addition, the discount rate used to reflect the time value of money in the calculation of the liability for future policy benefits will be standardised. Further, the ASU requires deferred acquisition costs (DAC) relating to most long-duration contracts to be amortised on a constant basis over the expected term of the contract. As amended by ASU 2020-11 "Effective Date and Early Application", ASU 2018-12 is effective for annual periods beginning after 15 December 2024, and interim periods beginning after 15 December 2025. Due to the decision of the Board of Directors of SRZ to prepare the Group's consolidated financial statements in accordance with IFRS beginning 1 January 2024, the Group does not plan to adopt ASU 2018-12.

2 Information on business segments

The Group provides reinsurance and insurance throughout the world through its business segments. The business segments are determined by the organisational structure and by the way in which management reviews the operating performance of the Group.

The Group presents three core operating business segments: Property & Casualty Reinsurance, Life & Health Reinsurance and Corporate Solutions. Interest expense is based on the segment's capital funding position. The tax impact of a segment is derived from the legal entity tax obligations and the segmentation of the pre-tax result. While most of the tax items can be directly attributed to individual segments, the tax within an entity which impacts two or more segments is allocated to the segments based on the applicable statutory tax rate on pre-tax income or loss with permanent tax differences specifically allocated to the applicable segments.
Property & Casualty Reinsurance and Life & Health Reinsurance share the same year-to-date effective tax rate.

Accounting policies applied by the business segments are in line with those described in the summary of significant accounting policies (please refer to Note 1). Cross-segmental dividends and gains and losses on certain one-off transfers and transactions between segments are accounted for through segmental shareholders' equity.

The Group operating segments are outlined below.

The reinsurance business is managed through two operating segments, Property & Casualty Reinsurance and Life & Health Reinsurance, operating globally, both through brokers and directly with clients, and providing a large range of solutions for risk and capital management. Clients include stock and mutual insurance companies as well as public sector and governmental entities. In addition to traditional reinsurance solutions, both Property & Casualty Reinsurance and Life & Health Reinsurance offer insurance-linked securities and other insurance-related capital market products.

The Business Unit Global Clients and Solutions, that comprises Public Sector Solutions, Reinsurance Solutions, and iptiQ, is reported across different operating segments.

Property & Casualty Reinsurance
Property & Casualty includes the business lines property, casualty (including motor) and specialty.

Life & Health Reinsurance
Life & Health includes the life and health lines of business.

Corporate Solutions
Corporate Solutions offers innovative insurance capacity to mid- to large-sized corporations across the globe. Offerings range from standard risk transfer covers and multi-line programmes to highly customised solutions tailored to the needs of clients. Corporate Solutions serves customers from offices worldwide.

Group items
iptiQ results are reported within the Group items segment. Group items also includes items not allocated to the business segments, which encompass parts of Principal Investments, Swiss Re Ltd, the Group's ultimate parent company, certain Treasury units and reinsurance and insurance business in run-off. iptiQ partners with distributors providing Swiss Re Group access to risk pools offering white labelled protection cover in both the life and health as well as property and casualty businesses. Swiss Re Ltd charges trademark licence fees to the business segments which are reported as other revenues. Certain administrative expenses of the corporate centre functions that are not recharged to the operating segments are reported under Group items.

Consolidation
Segment information is presented net of external and internal retrocession and other intra-group arrangements. The Group total is obtained after elimination of intra-group transactions in the "Consolidation" column. This includes significant intra-group reinsurance arrangements, recharge of trademark licence fees and intersegmental funding.

a) Business segments – income statement
For the six months ended 30 June

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions[1]	Group items	Consolidation	Total
Revenues						
Gross premiums written	14 348	8 149	4 230	464	–588	26 603
Net premiums written	13 651	7 426	3 267	238		24 582
Change in unearned premiums	–3 101	–40	–384	4		–3 521
Premiums earned	10 550	7 386	2 883	242		21 061
Fee income from policyholders		143				143
Net investment income – non-participating business	635	698	72	27	–121	1 311
Net realised investment gains/losses – non-participating business	–238	70	33	–105		–240
Net investment result – unit-linked business		–72				–72
Other revenues	20	1	2	213	–201	35
Total revenues	10 967	8 226	2 990	377	–322	22 238
Expenses						
Claims and claim adjustment expenses[1]	–7 364		–1 553	–18		–8 935
Life and health benefits[1]		–6 582	–339	–166		–7 087
Return credited to policyholders		–90				–90
Acquisition costs	–2 467	–1 008	–391	–80		–3 946
Operating expenses	–558	–416	–405	–481	201	–1 659
Total expenses before interest expenses	–10 389	–8 096	–2 688	–745	201	–21 717
Income/loss before interest and income tax expense/benefit	578	130	302	–368	–121	521
Interest expenses	–172	–128	–13	–108	121	–300
Income/loss before income tax expense/benefit	406	2	289	–476	0	221
Income tax expense/benefit	–90		–66	95		–61
Net income/loss before attribution of non-controlling interests	316	2	223	–381	0	160
Income/loss attributable to non-controlling interests			–3			–3
Net income/loss attributable to common shareholders	316	2	220	–381	0	157
Combined ratio in %	98.5		93.2			97.3
Management expense ratio[2] in %		5.1				
Net operating margin[3] in %	5.3	1.6	10.1			2.3

[1] The Group has revised the presentation of the medical business of Elips Versicherungen AG and starting 2023 reports it under claims and claim adjustment expenses. Comparative information was adjusted accordingly.
[2] Management expense ratio is calculated as "Operating expenses" divided by "Total revenues" excluding "Net realised investment gains/losses – non-participating business" and "Net investment result – unit-linked business".
[3] Net operating margin is calculated as "Income/loss before income tax expense/benefit" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Business segments – income statement
For the six months ended 30 June

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Revenues						
Gross premiums written	15 316	8 702	3 572	782	–598	27 774
Net premiums written	14 319	7 980	2 372	665		25 336
Change in unearned premiums	–2 950	–334	194	–224		–3 314
Premiums earned	11 369	7 646	2 566	441		22 022
Fee income from policyholders		115				115
Net investment income – non-participating business	896	873	172	133	–211	1 863
Net realised investment gains/losses – non-participating business	–41	78	19	68		124
Net investment result – unit-linked business		–15				–15
Other revenues	14		2	275	–254	37
Total revenues	**12 238**	**8 697**	**2 759**	**917**	**–465**	**24 146**
Expenses						
Claims and claim adjustment expenses	–7 404		–1 537	–36		–8 977
Life and health benefits		–6 447		–302		–6 749
Return credited to policyholders		–156				–156
Acquisition costs	–2 760	–1 049	–374	–142		–4 325
Operating expenses	–659	–435	–425	–500	254	–1 765
Total expenses before interest expenses	**–10 823**	**–8 087**	**–2 336**	**–980**	**254**	**–21 972**
Income/loss before interest and income tax expense/benefit	**1 415**	**610**	**423**	**–63**	**–211**	**2 174**
Interest expenses	–280	–116	–13	–121	211	–319
Income/loss before income tax expense/benefit	**1 135**	**494**	**410**	**–184**	**0**	**1 855**
Income tax expense/benefit	–231	–101	–84	11		–405
Net income/loss before attribution of non-controlling interests	**904**	**393**	**326**	**–173**	**0**	**1 450**
Income/loss attributable to non-controlling interests			–3			–3
Net income/loss attributable to common shareholders	**904**	**393**	**323**	**–173**	**0**	**1 447**
Combined ratio[1] in %	94.7		91.0			94.0
Management expense ratio[2] in %		5.0				
Net operating margin[3] in %	11.6	7.0	15.3			9.0

[1] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.
[2] Management expense ratio is calculated as "Operating expenses" divided by "Total revenues" excluding "Net realised investment gains/losses – non-participating business" and "Net investment result – unit-linked business".
[3] Net operating margin is calculated as "Income/loss before income tax expense/benefit" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Business segments – balance sheet
As of 31 December

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Assets						
Fixed income securities	38 918	27 220	7 922	513		74 573
Equity securities	1 110	268	116	620		2 114
Other investments	18 265	3 549	371	4 107	–10 224	16 068
Short-term investments	4 367	2 795	1 451	294		8 907
Investments for unit-linked business		330				330
Cash and cash equivalents	1 605	1 715	718	39		4 077
Deferred acquisition costs	2 675	4 520	489	437		8 121
Acquired present value of future profits		794				794
Reinsurance recoverable	1 865	2 211	6 413	273	–4 255	6 507
Other reinsurance assets	17 024	12 335	3 135	216	–636	32 074
Goodwill	1 859	1 791	184	29		3 863
Other	12 406	9 221	3 115	4 058	–15 552	13 248
Total assets	100 094	66 749	23 914	10 586	–30 667	170 676
Liabilities						
Unpaid claims and claim adjustment expenses	58 317	16 784	13 914	662	–4 259	85 418
Liabilities for life and health policy benefits		19 426	625	874		20 925
Policyholder account balances		4 850				4 850
Other reinsurance liabilities	16 842	2 000	5 341	361	–1 039	23 505
Short-term debt	720			909	–843	786
Long-term debt	4 962	9 670	499	2 971	–7 850	10 252
Other	13 389	11 424	1 335	2 659	–16 676	12 131
Total liabilities	94 230	64 154	21 714	8 436	–30 667	157 867
Shareholders' equity	5 856	2 595	2 098	2 150	0	12 699
Non-controlling interests	8		102			110
Total equity	5 864	2 595	2 200	2 150	0	12 809
Total liabilities and equity	100 094	66 749	23 914	10 586	–30 667	170 676

Business segments – balance sheet
As of 30 June

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Assets						
Fixed income securities	42 745	26 828	7 910	559		78 042
Equity securities	58	55	15	560		688
Other investments	17 359	4 582	357	2 899	–8 369	16 828
Short-term investments	3 176	2 194	1 491	240		7 101
Investments for unit-linked business		310				310
Cash and cash equivalents	1 513	1 295	945	563		4 316
Deferred acquisition costs	2 936	4 496	469	471		8 372
Acquired present value of future profits		755				755
Reinsurance recoverable	1 686	2 302	6 352	275	–4 174	6 441
Other reinsurance assets	21 246	13 389	3 057	548	–771	37 469
Goodwill	1 876	1 818	193	29		3 916
Other	17 174	10 848	3 903	5 502	–22 635	14 792
Total assets	**109 769**	**68 872**	**24 692**	**11 646**	**–35 949**	**179 030**
Liabilities						
Unpaid claims and claim adjustment expenses	58 334	16 950	13 998	719	–4 175	85 826
Liabilities for life and health policy benefits		19 515	625	910		21 050
Policyholder account balances		4 757				4 757
Other reinsurance liabilities	21 706	2 785	5 452	642	–1 276	29 309
Short-term debt	315			499	–313	501
Long-term debt	5 654	8 722	499	2 636	–6 861	10 650
Other	17 732	13 044	1 737	4 894	–23 324	14 083
Total liabilities	**103 741**	**65 773**	**22 311**	**10 300**	**–35 949**	**166 176**
Shareholders' equity	**5 984**	**3 099**	**2 251**	**1 346**	**0**	**12 680**
Non-controlling interests	44		130			174
Total equity	**6 028**	**3 099**	**2 381**	**1 346**	**0**	**12 854**
Total liabilities and equity	**109 769**	**68 872**	**24 692**	**11 646**	**–35 949**	**179 030**

b) Property & Casualty Reinsurance business segment – by line of business
For the six months ended 30 June

2022 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	6 627	5 546	2 175		14 348
Net premiums written	5 993	5 512	2 146		13 651
Change in unearned premiums	–1 945	–670	–486		–3 101
Premiums earned	4 048	4 842	1 660		10 550
Net investment income				635	635
Net realised investment gains/losses				–238	–238
Other revenues				20	20
Total revenues	4 048	4 842	1 660	417	10 967
Expenses					
Claims and claim adjustment expenses	–2 943	–3 352	–1 069		–7 364
Acquisition costs	–814	–1 317	–336		–2 467
Operating expenses	–243	–213	–102		–558
Total expenses before interest expenses	–4 000	–4 882	–1 507	0	–10 389
Income/loss before interest and income tax expense	48	–40	153	417	578
Interest expenses				–172	–172
Income/loss before income tax expense	48	–40	153	245	406
Combined ratio in %	98.8	100.8	90.8		98.5

Property & Casualty Reinsurance business segment – by line of business
For the six months ended 30 June

2023 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	6 991	5 723	2 602		15 316
Net premiums written	6 071	5 694	2 554		14 319
Change in unearned premiums	–1 831	–626	–493		–2 950
Premiums earned	4 240	5 068	2 061		11 369
Net investment income				896	896
Net realised investment gains/losses				–41	–41
Other revenues				14	14
Total revenues	**4 240**	**5 068**	**2 061**	**869**	**12 238**
Expenses					
Claims and claim adjustment expenses	–2 087	–4 398	–919		–7 404
Acquisition costs	–810	–1 435	–515		–2 760
Operating expenses	–277	–245	–137		–659
Total expenses before interest expenses	**–3 174**	**–6 078**	**–1 571**	**0**	**–10 823**
Income/loss before interest and income tax expense	**1 066**	**–1 010**	**490**	**869**	**1 415**
Interest expenses				–280	–280
Income/loss before income tax expense	**1 066**	**–1 010**	**490**	**589**	**1 135**
Combined ratio[1] in %	74.9	118.8	76.0		94.7

[1] The Group has prospectively, as from Q1 2023, revised the methodology used to calculate the combined ratio to include interest on funds withheld.

c) Life & Health Reinsurance business segment – by line of business
For the six months ended 30 June

2022 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	5 760	2 389		8 149
Net premiums written	5 170	2 256		7 426
Change in unearned premiums	–14	–26		–40
Premiums earned	5 156	2 230		7 386
Fee income from policyholders	143			143
Net investment income – non-participating business	580	118		698
Net realised investment gains/losses – non-participating business	33		37	70
Net investment result – unit-linked business	–72			–72
Other revenues	1			1
Total revenues	5 841	2 348	37	8 226
Expenses				
Life and health benefits	–4 918	–1 664		–6 582
Return credited to policyholders	–90			–90
Acquisition costs	–712	–296		–1 008
Operating expenses	–278	–138		–416
Total expenses before interest expenses	–5 998	–2 098	0	–8 096
Income/loss before interest and income tax expense	–157	250	37	130
Interest expenses			–128	–128
Income/loss before income tax expense	–157	250	–91	2
Management expense ratio[1] in %	4.7	5.9		5.1
Net operating margin[2] in %	–2.7	10.6		1.6

[1] Management expense ratio is calculated as "Operating expenses" divided by "Total revenues" excluding "Net realised investment gains/losses – non-participating business" and "Net investment result – unit-linked business".
[2] Net operating margin is calculated as "Income/loss before interest and income tax expense" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Life & Health Reinsurance business segment – by line of business
For the six months ended 30 June

2023 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	6 020	2 682		8 702
Net premiums written	5 419	2 561		7 980
Change in unearned premiums	–181	–153		–334
Premiums earned	5 238	2 408		7 646
Fee income from policyholders	115			115
Net investment income – non-participating business	653	220		873
Net realised investment gains/losses – non-participating business	14	2	62	78
Net investment result – unit-linked business	–15			–15
Other revenues				0
Total revenues	**6 005**	**2 630**	**62**	**8 697**
Expenses				
Life and health benefits	–4 661	–1 786		–6 447
Return credited to policyholders	–156			–156
Acquisition costs	–646	–403		–1 049
Operating expenses	–294	–141		–435
Total expenses before interest expenses	**–5 757**	**–2 330**	**0**	**–8 087**
Income before interest and income tax expense	**248**	**300**	**62**	**610**
Interest expenses			–116	–116
Income/loss before income tax expense	**248**	**300**	**–54**	**494**
Management expense ratio[1] in %	4.9	5.4		5.0
Net operating margin[2] in %	4.1	11.4		7.0

[1] Management expense ratio is calculated as "Operating expenses" divided by "Total revenues" excluding "Net realised investment gains/losses – non-participating business" and "Net investment result – unit-linked business".
[2] Net operating margin is calculated as "Income before interest and income tax expense" divided by "Total revenues" excluding "Net investment result – unit-linked business".

d) Group items business segment
For the six months ended 30 June

2022 USD millions	iptiQ	Other	Total
Revenues			
Gross premiums written	455	9	464
Net premiums written	229	9	238
Change in unearned premiums	4		4
Premiums earned	233	9	242
Net investment income – non-participating business	–17	44	27
Net realised investment gains/losses	–16	–89	–105
Other revenues	12	201	213
Total revenues	212	165	377
Expenses			
Claims and claim adjustment expenses	–18		–18
Life and health benefits	–164	–2	–166
Acquisition costs	–70	–10	–80
Operating expenses	–155	–326	–481
Total expenses before interest expenses	–407	–338	–745
Income/loss before interest and income tax expense/benefit	–195	–173	–368
Interest expenses		–108	–108
Income/loss before income tax expense/benefit	–195	–281	–476
Income tax expense/benefit	10	85	95
Net income/loss	–185	–196	–381

Group items business segment
For the six months ended 30 June

2023 USD millions	iptiQ	Other	Total
Revenues			
Gross premiums written	476	306	782
Net premiums written	363	302	665
Change in unearned premiums	–77	–147	–224
Premiums earned	286	155	441
Net investment income – non-participating business	20	113	133
Net realised investment gains/losses	–2	70	68
Other revenues	26	249	275
Total revenues	**330**	**587**	**917**
Expenses			
Claims and claim adjustment expenses	–36		–36
Life and health benefits	–183	–119	–302
Acquisition costs	–87	–55	–142
Operating expenses	–162	–338	–500
Total expenses before interest expenses	**–468**	**–512**	**–980**
Income/loss before interest and income tax expense/benefit	**–138**	**75**	**–63**
Interest expenses		–121	–121
Income/loss before income tax expense/benefit	**–138**	**–46**	**–184**
Income tax expense/benefit	13	–2	11
Net income/loss	**–125**	**–48**	**–173**

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3 Insurance information

Premiums earned and fees assessed against policyholders
For the six months ended 30 June

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Premiums earned, thereof:					
Direct			3 160	390	3 550
Reinsurance	10 419	8 080	496	5	19 000
Intra-group transactions (assumed and ceded)	371		–226	–145	0
Premiums earned before retrocession to external parties	10 790	8 080	3 430	250	22 550
Retrocession to external parties	–240	–694	–547	–8	–1 489
Net premiums earned	10 550	7 386	2 883	242	21 061
Fee income from policyholders, thereof:					
Direct					0
Reinsurance		144			144
Gross fee income before retrocession to external parties		144			144
Retrocession to external parties		–1			–1
Net fee income	0	143	0	0	143

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Premiums earned, thereof:					
Direct			3 091	447	3 538
Reinsurance	11 351	8 370	520	157	20 398
Intra-group transactions (assumed and ceded)	397		–241	–156	0
Premiums earned before retrocession to external parties	11 748	8 370	3 370	448	23 936
Retrocession to external parties	–379	–724	–804	–7	–1 914
Net premiums earned	**11 369**	**7 646**	**2 566**	**441**	**22 022**
Fee income from policyholders, thereof:					
Direct					0
Reinsurance		116			116
Gross fee income before retrocession to external parties		116			116
Retrocession to external parties		–1			–1
Net fee income	**0**	**115**	**0**	**0**	**115**

Claims and claim adjustment expenses
For the six months ended 30 June

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Claims paid, thereof:					
Gross claims paid to external parties	–6 252	–7 241	–2 179	–232	–15 904
Intra-group transactions (assumed and ceded)	–328	–7	278	57	0
Claims before receivables from retrocession to external parties	–6 580	–7 248	–1 901	–175	–15 904
Retrocession to external parties	275	734	384	2	1 395
Net claims paid	–6 305	–6 514	–1 517	–173	–14 509
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:					
Gross – with external parties	–1 101	–15	–145	–87	–1 348
Intra-group transactions (assumed and ceded)	195	7	–277	75	0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	–906	–8	–422	–12	–1 348
Retrocession to external parties	–153	–60	47	1	–165
Net unpaid claims and claim adjustment expenses; life and health benefits	–1 059	–68	–375	–11	–1 513
Claims and claim adjustment expenses; life and health benefits	–7 364	–6 582	–1 892	–184	–16 022

Acquisition costs
For the six months ended 30 June

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Acquisition costs, thereof:					
Gross acquisition costs with external parties	–2 455	–1 171	–523	–95	–4 244
Intra-group transactions (assumed and ceded)	–52	–2	41	13	0
Acquisition costs before impact of retrocession to external parties	–2 507	–1 173	–482	–82	–4 244
Retrocession to external parties	40	165	91	2	298
Net acquisition costs	–2 467	–1 008	–391	–80	–3 946

Claims and claim adjustment expenses
For the six months ended 30 June

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Claims paid, thereof:					
Gross claims paid to external parties	–7 413	–7 040	–2 225	–393	–17 071
Intra-group transactions (assumed and ceded)	–352		235	117	0
Claims before receivables from retrocession to external parties	–7 765	–7 040	–1 990	–276	–17 071
Retrocession to external parties	228	692	539	6	1 465
Net claims paid	**–7 537**	**–6 348**	**–1 451**	**–270**	**–15 606**
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:					
Gross – with external parties	227	–129	24	–63	59
Intra-group transactions (assumed and ceded)	108		–115	7	0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	335	–129	–91	–56	59
Retrocession to external parties	–202	30	5	–12	–179
Net unpaid claims and claim adjustment expenses; life and health benefits	**133**	**–99**	**–86**	**–68**	**–120**
Claims and claim adjustment expenses; life and health benefits	**–7 404**	**–6 447**	**–1 537**	**–338**	**–15 726**

Acquisition costs
For the six months ended 30 June

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Acquisition costs, thereof:					
Gross acquisition costs with external parties	–2 747	–1 191	–527	–169	–4 634
Intra-group transactions (assumed and ceded)	–74		49	25	0
Acquisition costs before impact of retrocession to external parties	–2 821	–1 191	–478	–144	–4 634
Retrocession to external parties	61	142	104	2	309
Net acquisition costs	**–2 760**	**–1 049**	**–374**	**–142**	**–4 325**

Reinsurance receivables

Reinsurance receivables as of 31 December 2022 and 30 June 2023 were as follows:

USD millions	2022	**2023**
Premium receivables invoiced	4 717	4 764
Receivables invoiced from ceded re/insurance business	517	737
Assets arising from the application of the deposit method of accounting and meeting the definition of financing receivables	614	907

Allowance for credit losses

A reconciliation of the opening and closing allowance for credit losses related to premiums and other receivables and reinsurance recoverable on unpaid claims and policy benefits is presented as follows:

2023 USD millions	Premiums and other receivables	Reinsurance recoverable on unpaid claims and policy benefits
Balance as of 1 January	-71	-31
Impact of ASC 326[1]	–6	–40
Current period provision for expected credit losses and disputes	–7	5
Write-offs charged against the allowance for credit losses and disputes	1	
Foreign exchange revaluation	–1	
Balance as of 30 June	**–84**	**–66**

[1] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

The Group has established an allowance for credit losses and disputes for premiums and other receivables as well as reinsurance recoverable on unpaid claims and policy benefits. The evaluation of the allowance includes several judgments including a default analysis to estimate uncollectible balances based on balances by cedent, net of collateral and netting, and default factors used to estimate the forward-looking allowance. Default factors are determined using principally the current financial strength rating of each cedent, asset class, seniority and geography. Changes in the allowance for premiums and other receivables are recorded in "Operating expenses" in the income statement. Changes in the allowance for reinsurance recoverable are recorded in "Claims and claim adjustment expenses" and "Life and health benefits" in the income statement.

4 Premiums written

For the six months ended 30 June

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Gross premiums written, thereof:						
Direct			3 757	459		4 216
Reinsurance	13 813	8 149	420	5		22 387
Intra-group transactions (assumed)	535		53		–588	0
Gross premiums written	14 348	8 149	4 230	464	–588	26 603
Intra-group transactions (ceded)	–53		–318	–217	588	0
Gross premiums written before retrocession to external parties	14 295	8 149	3 912	247		26 603
Retrocession to external parties	–644	–723	–645	–9		–2 021
Net premiums written	13 651	7 426	3 267	238	0	24 582

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Gross premiums written, thereof:						
Direct			3 057	478		3 535
Reinsurance	14 802	8 702	431	304		24 239
Intra-group transactions (assumed)	514		84		–598	0
Gross premiums written	15 316	8 702	3 572	782	–598	27 774
Intra-group transactions (ceded)	–84		–405	–109	598	0
Gross premiums written before retrocession to external parties	15 232	8 702	3 167	673		27 774
Retrocession to external parties	–913	–722	–795	–8		–2 438
Net premiums written	**14 319**	**7 980**	**2 372**	**665**	**0**	**25 336**

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5 Unpaid claims and claim adjustment expenses

A reconciliation of the opening and closing reserve balances for unpaid claims and claim adjustment expenses as of 31 December 2022 and 30 June 2023 is presented as follows:

USD millions	2022	**2023**
Balance as of 1 January	84 096	85 418
Reinsurance recoverable	−3 975	−4 224
Deferred expense on retroactive reinsurance	−165	−121
Impact of ASC 326[1]		40
Net balance as of 1 January	79 956	**81 113**
Incurred related to:		
Current year	32 255	15 169
Prior year	675	418
Amortisation of deferred expense on retroactive reinsurance and impact of commutations	9	2
Total incurred	32 939	**15 589**
Paid related to:		
Current year	−8 798	−2 327
Prior year	−20 648	−13 279
Total paid	−29 446	**−15 606**
Foreign exchange	−2 731	391
Effect of acquisitions, disposals, new retroactive reinsurance and other items	355	136
Net balance as of period end	81 073	**81 623**
Reinsurance recoverable	4 224	4 077
Deferred expense on retroactive reinsurance	121	126
Balance as of period end	85 418	**85 826**

[1] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

Prior year development

Non-life claims development on prior years in the first six months ended 30 June 2023 is due to adverse development in casualty, partly offset by favourable development from property and specialty. The adverse movement in casualty is mainly from liability and motor. Development in property is principally due to releases for large losses and lower-than-expected claims activity in all regions. Specialty was mainly impacted by favourable experience in credit & surety, partly offset by aviation and engineering.

For life and health lines of business, development on prior years unpaid claims in the first six months ended 30 June 2023 is unfavourable. There is unfavourable development in the US driven by adverse mortality experience, partially offset by favourable development mainly from disability income business in Australia. Claims development related to prior years for disability portfolio also includes an element of interest accretion for unpaid claims reported at an estimated present value.

A summary of prior-year net claims and claim adjustment expenses development by lines of business for the year ended 31 December 2022 and for the six months ended 30 June 2023 is shown below[1]:

USD millions	2022	**2023**
Line of business:		
Property	−468	−869
Casualty	810	1 210
Specialty	−13	−41
Life and health	346	118
Total	675	**418**

[1] Adverse development is shown as positive numbers and represents a charge to the income statement. Favourable development is shown as negative and represents a credit to the income statement.

6 Deferred acquisition costs (DAC) and acquired present value of future profits (PVFP)

Deferred acquisition costs
As of 31 December 2022 and 30 June 2023, the DAC were as follows:

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Opening balance as of 1 January	2 538	4 718	480	406	8 142
Deferred	5 327	496	779	215	6 817
Effect of acquisitions/disposals and retrocessions		11	–17	6	0
Amortisation	–5 106	–459	–737	–174	–6 476
Effect of foreign currency translation and other changes	–84	–246	–16	–16	–362
Closing balance	2 675	4 520	489	437	8 121

2023 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Opening balance as of 1 January	2 675	4 520	489	437	8 121
Deferred	3 036	226	346	170	3 778
Effect of acquisitions/disposals and retrocessions		–18			–18
Amortisation	–2 760	–217	–369	–142	–3 488
Effect of foreign currency translation and other changes	–15	–15	3	6	–21
Closing balance	**2 936**	**4 496**	**469**	**471**	**8 372**

Retroceded DAC may arise on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation. The associated potential retrocession recoveries are determined by the nature of the retrocession agreements and by the terms of the securitisation.

Acquired present value of future profits
As of 31 December 2022 and 30 June 2023, the PVFP for Life & Health Reinsurance was as follows:

USD millions	2022	**2023**
Opening balance as of 1 January	836	794
Effect of acquisitions/disposals and retrocessions		–3
Amortisation	–100	–51
Interest accrued on unamortised PVFP	38	18
Effect of change in unrealised gains/losses	29	–5
Effect of foreign currency translation	–9	2
Closing balance	794	**755**

Retroceded PVFP may arise on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation. The associated potential retrocession recoveries are determined by the nature of the retrocession agreements and by the terms of the securitisation.

7 Investments

Investment income

Net investment income by source (excluding unit-linked business) for the six months ended 30 June was as follows:

USD millions	2022	2023
Fixed income securities	914	1 198
Equity securities	23	35
Policy loans, mortgages and other loans	78	139
Investment real estate	126	122
Short-term investments	18	123
Other current investments	52	62
Share in earnings of equity-accounted investees	–23	35
Cash and cash equivalents	5	66
Net result from deposit-accounted contracts	77	10
Deposits with ceding companies	222	273
Gross investment income	1 492	**2 063**
Investment expenses	–181	–189
Interest charged for funds held		–11
Net investment income – non-participating business	1 311	**1 863**

Dividends received from investments accounted for using the equity method were USD 122 million and USD 22 million for the six months ended 30 June 2022 and 2023, respectively.

Share in earnings of equity-accounted investees included impairments of the carrying amount of equity-accounted investees of USD 3 million and nil for the six months ended 30 June 2022 and 2023, respectively.

Realised gains and losses

Realised gains and losses for fixed income securities, equity securities and other investments (excluding unit-linked business) for the six months ended 30 June were as follows:

USD millions	2022	2023
Fixed income securities available-for-sale:		
Gross realised gains	184	31
Gross realised losses	–150	–89
Other-than-temporary impairments[1]	–50	
Net realised investment gains/losses on equity securities	–232	52
Change in net unrealised investment gains/losses on equity securities	–419	–9
Net realised investment gains/losses on trading securities	–146	–4
Change in net unrealised investment gains/losses on trading securities	–87	6
Net realised/unrealised gains/losses on other investments	531	–38
Net realised/unrealised gains/losses on insurance-related activities	100	33
Change in allowance for credit losses on[1]:		
Fixed income securities available-for-sale		4
Other investments		–7
Foreign exchange gains/losses	29	145
Net realised investment gains/losses – non-participating business	–240	**124**

[1] Other-than-temporary impairment losses have been superseded by credit loss allowances upon the adoption of ASC 326 "Financial Instruments — Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

Net realised/unrealised gains/losses on insurance-related activities included impairments of USD 2 million and nil for the six months ended 30 June 2022 and 2023, respectively.

Investment result – unit-linked business
For unit-linked contracts, the investment risk is borne by the policyholder.

The net investment result on unit-linked business credited to policyholders amounted to losses of USD 72 million and USD 15 million for the six months ended 30 June 2022 and 2023, respectively, originating from equity securities.

Allowance for credit impairments on fixed income securities
Prior to adoption of ASC 326 "Financial Instruments – Credit Losses" standard
Other-than-temporary impairments for debt securities are bifurcated between credit and non-credit components, with the credit component recognised through earnings and the non-credit component recognised in other comprehensive income. The credit component of other-than-temporary impairments is defined as the difference between a security's amortised cost basis and the present value of expected cash flows. Methodologies for measuring the credit component of impairment are aligned to market observer forecasts of credit performance drivers. Management believes that these forecasts are representative of median market expectations.

For securitised products, cash flow projection analysis is conducted by integrating forward-looking evaluation of collateral performance drivers, including default rates, prepayment rates and loss severities, and deal-level features, such as credit enhancement and prioritisation among tranches for payments of principal and interest. Analytics are differentiated by asset class, product type and security-level differences in historical and expected performance. For corporate bonds and hybrid debt instruments, an expected loss approach based on default probabilities and loss severities expected in the current and forecasted economic environment is used for securities identified as credit-impaired to project probability-weighted cash flows. Expected cash flows resulting from these analyses are discounted, and the present value is compared to the amortised cost basis to determine the credit component of other-than-temporary impairments.

Other-than-temporary impairments related to credit losses recognised as of 31 December 2022 amounted to USD 60 million.

After the adoption of ASC 326 "Financial Instruments – Credit Losses" standard
For fixed income securities available-for-sale for which the fair value is below amortised cost and there is no intention to sell, the impairment loss is split into (i) the estimated amount relating to credit losses, and (ii) the amount relating to non-credit factors. The estimated credit loss is recognised as an allowance in earnings as a component of net realised investment gains/losses, with the remainder of the loss recognised in other comprehensive income. The allowance for credit losses is limited to the difference between amortised cost and fair value.

When there is an intention or obligation to sell and the fair value is lower than amortised cost, any previously recognised credit loss allowance is written off and the amortised cost of the respective security is written down to its current fair value. Any additional impairment is recognised in earnings. Subsequent recoveries are recognised in net realised investment gains/losses. The same applies to a security for which all amounts due are deemed uncollectible.

The Group periodically assesses whether a decline in fair value below amortised cost necessitates the calculation of an allowance for credit losses considering various quantitative and qualitative factors.

For securities identified as credit-impaired, the calculation of the estimated credit loss amount includes forward-looking credit information incorporating macro-economic factors as well as credit ratings and is determined by discounting the expected cash shortfalls with the effective interest rate, and multiplying with PD (probability of default) and LGD (loss given default). The Group includes accrued interest in the amortised cost basis to estimate expected credit losses.

The allowance for credit losses and the corresponding charge to earnings can be reversed as conditions change. However, the credit loss allowance cannot be reversed to a negative amount.

A reconciliation of the allowance for credit losses related to fixed income securities classified as available-for-sale, aggregated by major investment category is presented as follows:

2023 USD millions	Debt securities issued by governments and government agencies	Corporate debt securities	Mortgage-and asset-backed securities	Total
Balance as of 1 January 2023	0	0	0	**0**
Impact of ASC 326[1]	7	30	5	**42**
Securities for which allowance for credit losses were not previously recorded		4		**4**
Additions/ reductions in allowance recorded on previously impaired securities	1	–7	–1	**–7**
Securities sold during the period		–1		**–1**
Balance as of 30 June	**8**	**26**	**4**	**38**

[1] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

Investments available-for-sale

Amortised cost or cost, estimated fair values and other-than-temporary impairments of fixed income securities classified as available-for-sale as of 31 December 2022 and 30 June 2023 were as follows:

2022 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Other-than-temporary impairments recognised in other comprehensive income[1]	Estimated fair value
Debt securities issued by governments and government agencies:					
US Treasury and other US government corporations and agencies	15 418	3	–1 229		14 192
US Agency securitised products	3 870	4	–379		3 495
States of the United States and political subdivisions of the states	1 331	5	–109		1 227
United Kingdom	3 451	4	–1 149		2 306
Canada	2 443	17	–129		2 331
Germany	2 173	18	–437		1 754
France	2 243	10	–692		1 561
China	1 453	8	–7		1 454
Other	10 120	11	–1 191		8 940
Total	42 502	80	–5 322		37 260
Corporate debt securities	35 852	137	–3 137	–6	32 846
Mortgage- and asset-backed securities	4 284	12	–309	–4	3 983
Fixed income securities available-for-sale	82 638	229	–8 768	–10	74 089

2023 USD millions	Amortised cost or cost	Allowance for credit losses[2]	Gross unrealised gains	Gross unrealised losses	Estimated fair value
Debt securities issued by governments and government agencies:					
US Treasury and other US government corporations and agencies	12 892		12	–1 058	11 846
US Agency securitised products	4 218		3	–378	3 843
States of the United States and political subdivisions of the states	1 357		9	–88	1 278
United Kingdom	3 626		12	–1 358	2 280
Canada	2 117		13	–98	2 032
Germany	2 074		19	–409	1 684
France	2 212		13	–671	1 554
China	1 394		7	–8	1 393
Other	10 328	–8	21	–1 053	9 288
Total	40 218	–8	109	–5 121	35 198
Corporate debt securities	39 526	–26	149	–2 921	36 728
Mortgage- and asset-backed securities	4 430	–4	12	–246	4 192
Fixed income securities available-for-sale	**84 174**	**–38**	**270**	**–8 288**	**76 118**

[1] The "Other-than-temporary impairments recognised in other comprehensive income" column includes only securities with a credit-related loss recognised in earnings. Subsequent recovery in fair value of securities previously impaired in other comprehensive income is also presented in the "Other-than-temporary impairments recognised in other comprehensive income" column. Other-than-temporary impairment losses have been superseded by credit loss allowances upon the adoption of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

[2] Represents the allowance for credit losses that has been recognised in the balance sheet. Changes in the allowance for credit losses are reported in "Net realised investment gains/losses – non-participating business".

Unrealised losses on securities available-for-sale
The following table shows the fair value and gross unrealised losses of fixed income securities, aggregated by investment category and length of time that individual securities were in a continuous unrealised loss position as of 31 December 2022:

2022 USD millions	Less than 12 months Fair value	 Unrealised losses	12 months or more Fair value	 Unrealised losses	Total Fair value	 Unrealised losses
Debt securities issued by governments and government agencies:						
US Treasury and other US government corporations and agencies	4 912	280	9 120	949	14 032	1 229
US Agency securitised products	2 266	179	1 068	200	3 334	379
States of the United States and political subdivisions of the states	989	96	48	13	1 037	109
United Kingdom	1 171	462	1 128	687	2 299	1 149
Canada	734	32	1 481	97	2 215	129
Germany	1 018	227	416	210	1 434	437
France	678	233	632	459	1 310	692
China	198	3	45	4	243	7
Other	4 755	520	3 528	671	8 283	1 191
Total	16 721	2 032	17 466	3 290	34 187	5 322
Corporate debt securities	17 138	1 337	12 269	1 806	29 407	3 143
Mortgage- and asset-backed securities	2 868	193	1 002	120	3 870	313
Total	36 727	3 562	30 737	5 216	67 464	8 778

The following table shows the fair value and gross unrealised losses of fixed income securities, for which an allowance for credit losses has not been recognised or has only been recognised for a portion of the losses, aggregated by investment category and length of time that individual securities were in a continuous loss position as of 30 June 2023:

2023 USD millions	Less than 12 months Fair value	 Unrealised losses	12 months or more Fair value	 Unrealised losses	Total Fair value	 Unrealised losses
Debt securities issued by governments and government agencies:						
US Treasury and other US government corporations and agencies	2 167	79	9 348	979	11 515	1 058
US Agency securitised products	1 217	59	2 293	319	3 510	378
States of the United States and political subdivisions of the states	447	17	596	71	1 043	88
United Kingdom	311	130	1 961	1 228	2 272	1 358
Canada	203	5	1 621	93	1 824	98
Germany	351	44	1 103	365	1 454	409
France	391	129	932	542	1 323	671
China	199	2	66	6	265	8
Other	2 973	109	5 144	950	8 117	1 059
Total	8 259	574	23 064	4 553	31 323	5 127
Corporate debt securities	12 157	492	20 235	2 450	32 392	2 942
Mortgage- and asset-backed securities	1 073	27	2 663	223	3 736	250
Total	**21 489**	**1 093**	**45 962**	**7 226**	**67 451**	**8 319**

For fixed income securities classified as available-for-sale with significant declines in fair value, the Group performs a qualitative and quantitative credit analysis to determine whether the decline in value necessitates the recognition of an allowance for credit losses. The Group considers multiple factors when performing the analysis including the issuer's ability to meet contractual payments, the issuer's credit profile, the evolution of the security's credit rating and relevant characteristics of the security. If the Group determines that unrealised losses are due to non-credit factors, these losses are recognised in other comprehensive income and no allowance for credit losses is recognised in earnings.

Maturity of fixed income securities available-for-sale

The amortised cost or cost and estimated fair values of investments in fixed income securities available-for-sale by remaining maturity are shown below. Fixed maturity investments are assumed not to be called for redemption prior to the stated maturity date. As of 31 December 2022 and 30 June 2023, USD 25 231 million and USD 29 386 million, respectively, of fixed income securities available-for-sale were callable.

USD millions	2022 Amortised cost or cost	2022 Estimated fair value	2023 Amortised cost or cost, net of allowance	2023 Estimated fair value
Due in one year or less	13 324	13 079	12 476	12 294
Due after one year through five years	28 616	26 979	28 063	26 429
Due after five years through ten years	13 691	12 195	14 475	13 276
Due after ten years	23 725	18 769	25 518	20 722
Mortgage- and asset-backed securities with no fixed maturity	3 282	3 067	3 604	3 397
Total fixed income securities available-for-sale	82 638	74 089	**84 136**	**76 118**

Investments trading and at fair value through earnings

The carrying amounts of fixed income securities classified as trading and equity securities at fair value through earnings (excluding unit-linked business) as of 31 December 2022 and 30 June 2023 were as follows:

USD millions	2022	**2023**
Debt securities issued by governments and government agencies	462	1 501
Mortgage- and asset-backed securities	22	423
Fixed income securities trading – non-participating business	484	**1 924**
Equity securities at fair value through earnings – non-participating business	2 114	**688**

Investments held for unit-linked business

As of 31 December 2022 and 30 June 2023, the carrying amounts of investments held for unit-linked business consist of equity securities at fair value through earnings of USD 330 million and of USD 310 million.

Mortgage, policy and other loans, and investment real estate

As of 31 December 2022 and 30 June 2023, the carrying and respective fair values of investments in mortgage, policy and other loans, and investment real estate (excluding unit-linked business) were as follows:

USD millions	2022 Carrying value	2022 Fair value	2023 Carrying value	2023 Fair value
Mortgage loans	1 712	1 569	1 742	1 584
Other loans	2 599	2 443	3 010	2 890
Allowance for credit losses			–26	
Mortgage and other loans, net	4 311	4 012	4 726	4 474
Policy loans	32	32	31	31
Investment real estate	2 931	5 738	2 967	5 784

Depreciation expense related to investment real estate was USD 37 million and USD 36 million for the six months ended 30 June 2022 and 2023, respectively. Accumulated depreciation on investment real estate totalled USD 829 million and USD 885 million as of 31 December 2022 and 30 June 2023, respectively.

Investment real estate held by the Group includes residential and commercial investment real estate.

Substantially all mortgage, policy and other loan receivables are secured by buildings, infrastructure related assets, company assets, land or the underlying policies.

There were no significant mortgage and other loans positions for which payments of contractual principal or interest were past due as of 30 June 2023.

Allowance for credit impairments on mortgage and other loans
Allowance for credit losses on mortgage and other loans are estimated on an expected loss basis using a model that utilises probability of default and loss given default methods over the contractual lifetime of the instrument. Within the reasonable and supportable forecast period, the allowance for credit losses for mortgage and other loans is established based on a pool considering the risk associated within the designated pool. If similar risk characteristics do not exist or when individual instruments no longer have similar credit risk characteristics, they are removed from the pool and the allowance is measured on an individual asset basis. The Group includes accrued interest in the amortised cost basis to estimate expected credit losses.

The evaluation also considers available relevant information about the collectability of cash flows, including information about past events, current conditions, and reasonable and supportable forecasts of future economic conditions. The Group reverts to historical information when it is determined that future economic assumptions can no longer be reliably forecasted.

The allowance for credit losses on mortgage and other loans is recognised in earnings as a component of net realised investment gains/losses. The allowance for credit losses and the corresponding charge to earnings can be reversed as conditions change and are recognised as adjustments to the allowance for credit losses.

When all or a portion of a loan is deemed uncollectible, the uncollectible portion of the carrying amount of the loan is charged off against the allowance.

A reconciliation of the allowance for credit losses related to mortgage and other loans is presented as follows:

USD millions	**2023**
Balance as of 1 January	0
Impact of ASC 326[1]	19
Addition to/ release of allowance for credit losses	7
Balance as of 30 June	**26**

[1] Impact of ASC 326 "Financial Instruments – Credit Losses". Please refer to Note 1 "Organisation and summary of significant accounting policies" for more details.

Credit quality of mortgage and other loans
The following table shows credit ratings for mortgage and other loans as of 30 June 2023:

2023 USD millions	Mortgage and other loans
AAA	55
AA	757
A	922
BBB	1 747
Non-investment grade (including unrated)	783
Total amortised cost, gross of allowance[1]	**4 264**

[1] Excludes USD 488 million related to unit-linked business for which the credit risk is borne by the policyholders.

The credit ratings in the table above mainly reflect ratings assigned by external managers. The Group monitors the credit ratings periodically.

Other financial assets and liabilities by measurement category

As of 31 December 2022 and 30 June 2023, "Other invested assets" and "Accrued expenses and other liabilities" by measurement category were as follows:

2022 USD millions	Fair value	Investments measured at net asset value as practical expedient	Amortised cost or cost	Equity-accounted	Not in scope[1]	Total
Other invested assets						
Derivative financial instruments	309					309
Reverse repurchase agreements			2 005			2 005
Securities lending/borrowing	1 191					1 191
Equity-accounted investments	435			1 866		2 301
Other	372	1 740	876			2 988
Other invested assets	2 307	1 740	2 881	1 866	0	8 794
Accrued expenses and other liabilities						
Derivative financial instruments	546					546
Repurchase agreements			17			17
Securities lending	1 194		49			1 243
Securities sold short	381					381
Other			1 564		2 115	3 679
Accrued expenses and other liabilities	2 121	0	1 630	0	2 115	5 866

2023 USD millions	Fair value	Investments measured at net asset value as practical expedient	Amortised cost or cost	Equity-accounted	Not in scope[1]	Total
Other invested assets						
Derivative financial instruments	481					481
Reverse repurchase agreements			1 977			1 977
Securities lending/borrowing	925		123			1 048
Equity-accounted investments	403			1 892		2 295
Other	438	1 945	920			3 303
Other invested assets	**2 247**	**1 945**	**3 020**	**1 892**	**0**	**9 104**
Accrued expenses and other liabilities						
Derivative financial instruments	744					744
Repurchase agreements			19			19
Securities lending	928		11			939
Securities sold short	1 115					1 115
Other			2 611		2 112	4 723
Accrued expenses and other liabilities	**2 787**	**0**	**2 641**	**0**	**2 112**	**7 540**

[1] Amounts do not relate to financial assets or liabilities.

Offsetting of derivatives, financial assets and financial liabilities
Offsetting of derivatives, financial assets and financial liabilities as of 31 December 2022 and 30 June 2023 was as follows:

2022 USD millions	Gross amounts of recognised financial assets	Amounts set-off in the balance sheet	Net amounts of financial assets presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – assets	1 153	–844	309	–4	305
Reverse repurchase agreements	3 657	–1 652	2 005	–2 005	0
Securities borrowing					0
Total	4 810	–2 496	2 314	–2 009	305

2022 USD millions	Gross amounts of recognised financial liabilities	Amounts set-off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – liabilities	–1 663	1 117	–546	319	–227
Repurchase agreements	–1 272	1 255	–17	17	0
Securities lending	–1 640	397	–1 243	1 144	–99
Total	–4 575	2 769	–1 806	1 480	–326

2023 USD millions	Gross amounts of recognised financial assets	Amounts set-off in the balance sheet	Net amounts of financial assets presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – assets	1 043	–562	481	–12	**469**
Reverse repurchase agreements	4 176	–2 199	1 977	–1 977	**0**
Securities borrowing	123		123	–123	**0**
Total	**5 342**	**–2 761**	**2 581**	**–2 112**	**469**

2023 USD millions	Gross amounts of recognised financial liabilities	Amounts set-off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – liabilities	–1 330	586	–744	249	**–495**
Repurchase agreements	–1 818	1 799	–19	19	**0**
Securities lending	–1 339	400	–939	912	**–27**
Total	**–4 487**	**2 785**	**–1 702**	**1 180**	**–522**

Collateral pledged or received between two counterparties with a master netting arrangement in place, but not subject to balance sheet netting, is disclosed at fair value. The fair values represent the gross carrying value amounts at the reporting date for each financial instrument received or pledged by the Group. Management believes that master netting agreements provide for legally enforceable set-off in the event of default, which substantially reduces credit exposure. Upon occurrence of an event of default, the non-defaulting party may set off the obligation against collateral received regardless if it has been offset on the balance sheet prior to the defaulting event. The net amounts of the financial assets and liabilities presented on the balance sheet were recognised in "Other invested assets", "Investments for unit-linked business" and "Accrued expenses and other liabilities".

Assets pledged
As of 31 December 2022 and 30 June 2023, investments with a carrying value of USD 4 492 million and USD 4 216 million, respectively, were on deposit with regulatory agencies in accordance with local requirements, of which USD 469 million and USD 292 million, respectively, were cash and cash equivalents. As of 31 December 2022 and 30 June 2023, investments with a carrying value of USD 14 361 million and USD 14 137 million, respectively, were placed on deposit or pledged to secure certain reinsurance liabilities, including pledged investments in subsidiaries, of which USD 50 million and USD 135 million, respectively, were cash and cash equivalents. Cash and cash equivalents pledged include some instances where cash is legally restricted from usage or withdrawal.

As of 31 December 2022 and 30 June 2023, investments with a carrying value of USD 482 million and USD 373 million, respectively, were placed on deposit or pledged to secure certain derivative and debt liabilities.

As of 31 December 2022 and 30 June 2023, securities of USD 14 396 million and USD 14 146 million, respectively, were transferred to third parties under securities lending transactions and repurchase agreements on a fully collateralised basis. Corresponding liabilities of USD 1 260 million and USD 958 million, respectively, were recognised in accrued expenses and other liabilities for the obligation to return collateral that the Group has the right to sell or reuse.

As of 31 December 2022 and 30 June 2023, a real estate portfolio with a carrying value of USD 187 million and USD 188 million, respectively, served as collateral for a credit facility, allowing the Group to withdraw funds up to CHF 500 million.

Collateral accepted which the Group has the right to sell or repledge
As of 31 December 2022 and 30 June 2023, the fair value of the equity securities, government and corporate debt securities received as collateral was USD 4 527 million and USD 5 406 million, respectively. Of this, the amount that was sold or repledged as of 31 December 2022 and 30 June 2023 was USD 1 281 million and USD 1 511 million, respectively. The sources of the collateral are securities borrowing, reverse repurchase agreements, derivative transactions and reinsurance transactions.

Recognised gross liability for the obligation to return collateral (from repurchase agreements and securities lending)
As of 31 December 2022 and 30 June 2023, the gross amounts of liabilities related to repurchase agreements and securities lending by the class of securities transferred to third parties and by the remaining maturity are shown below:

2022 USD millions	Remaining contractual maturity of the agreements Overnight and continuous	Up to 30 days	30–90 days	Greater than 90 days	Total
Repurchase agreements					
Debt securities issued by governments and government agencies	9	1 091		99	1 199
Corporate debt securities		73			73
Total repurchase agreements	9	1 164	0	99	1 272
Securities lending					
Debt securities issued by governments and government agencies	454		1 044		1 498
Corporate debt securities	142				142
Total securities lending	596	0	1 044	0	1 640
Gross amount of recognised liabilities for repurchase agreements and securities lending					2 912

2023 USD millions	Remaining contractual maturity of the agreements Overnight and continuous	Up to 30 days	30–90 days	Greater than 90 days	Total
Repurchase agreements					
Debt securities issued by governments and government agencies	9	1 135	503	100	1 747
Corporate debt securities	1	70			71
Total repurchase agreements	**10**	**1 205**	**503**	**100**	**1 818**
Securities lending					
Debt securities issued by governments and government agencies	216	652	321		1 189
Corporate debt securities	150				150
Total securities lending	**366**	**652**	**321**	**0**	**1 339**
Gross amount of recognised liabilities for repurchase agreements and securities lending					**3 157**

The programme is structured in a conservative manner within a clearly defined risk framework. Yield enhancement is conducted on a non-cash basis, thereby taking no re-investment risk.

8 Fair value disclosures

Fair value, as defined by the Fair Value Measurements and Disclosures Topic, is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The Fair Value Measurements and Disclosures Topic requires all assets and liabilities that are measured at fair value to be categorised within the fair value hierarchy. This three-level hierarchy is based on the observability of the inputs used in the fair value measurement. The levels of the fair value hierarchy are defined as follows:

Level 1 inputs are unadjusted, quoted prices in active markets for identical assets or liabilities that the Group has the ability to access. Level 1 inputs are the most persuasive evidence of fair value and are to be used whenever possible. The types of instruments include most US government and sovereign obligations, active listed equities, certain exchange-traded derivative instruments and most money market securities.

Level 2 inputs are market-based inputs that are directly or indirectly observable, but not considered level 1 quoted prices. Level 2 inputs consist of (i) quoted prices for similar assets or liabilities in active markets; (ii) quoted prices for identical assets or liabilities in non-active markets (eg markets which have few transactions and where prices are not current or price quotations vary substantially); (iii) inputs other than quoted prices that are observable (eg interest rates, yield curves, volatilities, prepayment speeds, credit risks and default rates); (iv) inputs derived from, or corroborated by, observable market data; and (v) quoted prices provided by third-party brokers. The types of instruments that trade in markets that are not considered to be active include most government agency securities, investment-grade corporate bonds, certain mortgage- and asset-backed products, certain exchange-traded derivative instruments, catastrophe bonds, less liquid listed equities and state, municipal and provincial obligations.

Level 3 inputs are unobservable inputs. These inputs reflect the Group's own assumptions about market pricing using the best internal and external information available. Certain financial instruments are classified within level 3 of the fair value hierarchy because they trade infrequently and therefore have little or no price transparency. Such instruments include private equity, less liquid corporate debt securities and certain asset-backed securities (ABS). Certain over-the-counter (OTC) derivatives trade in less liquid markets with limited pricing information, and the determination of fair value for these derivatives is inherently more difficult. When appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads and credit considerations. Such adjustments are generally based on available market evidence. In the absence of such evidence, management's best estimate is used.

Pursuant to the election of the fair value option, the Group classifies certain liabilities for life and health policy benefits in level 3 of the fair value hierarchy. When appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads and credit considerations. Such adjustments are generally based on available market evidence. In the absence of such evidence, management's best estimate is used.

The fair values of assets are adjusted to incorporate the counterparty risk of non-performance. Similarly, the fair values of liabilities reflect the risk of non-performance of the Group, captured by the Group's credit spread. These valuation adjustments from assets and liabilities measured at fair value using significant unobservable inputs are recognised in net realised gains and losses. For the six months ended 30 June 2023, these adjustments were not material. Whenever the underlying assets or liabilities are reported in a specific business segment, the valuation adjustment is allocated accordingly. Valuation adjustments not attributable to any business segment are reported in Group items.

In certain situations, the Group uses inputs to measure the fair value of asset or liability positions that fall into different levels of the fair value hierarchy. In these situations, the Group will determine the appropriate level based on the lowest level input that is significant to the determination of the fair value.

Valuation techniques
US government securities typically have quoted market prices in active markets and are categorised as level 1 instruments in the fair value hierarchy. Non-US government holdings are generally classified as level 2 instruments and are valued on the basis of the quotes provided by pricing services, which are subject to the Group's pricing validation reviews and pricing vendor challenge process. Valuations provided by pricing vendors are generally based on the actual trade information as substantially all of the Group's non-US government holdings are traded in a transparent and liquid market.

Corporate debt securities mainly include US and European investment-grade positions, which are priced on the basis of quotes provided by third-party pricing vendors and first utilise valuation inputs from actively traded securities, such as bid prices, bid spreads to Treasury securities, Treasury curves and same or comparable issuer curves and spreads. Issuer spreads are determined from actual quotes and traded prices and incorporate considerations of credit/default, sector composition, and liquidity and call features. Where market data is not available, valuations are developed based on the modelling techniques that utilise observable inputs and option-adjusted spreads and incorporate considerations of the security's seniority and maturity and the issuer's corporate structure.

Values of mortgage- and asset-backed securities are obtained both from third-party pricing vendors and through quoted prices, some of which may be based on the prices of comparable securities with similar structural and collateral features. Values of certain ABS for which there are no significant observable inputs are developed using benchmarks to similar transactions or indices. For both residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), cash flows are derived based on the transaction-specific information, which incorporates priority in the capital structure, and are generally adjusted to reflect benchmark yields, market prepayment data, collateral performance (default rates and loss severity) for specific vintage and geography, credit enhancements and ratings. For certain RMBS and CMBS with low levels of market liquidity, judgements may be required to determine comparable securities based on the loan type and deal-specific performance. CMBS terms may also incorporate lock-out periods that restrict borrowers from prepaying the loans or provide disincentives to prepay and therefore reduce prepayment risk of these securities, compared to RMBS. The factors specifically considered in the valuation of CMBS include borrower-specific statistics in a specific region, such as debt service coverage and loan-to-value ratios, as well as the type of commercial property. Mortgage- and asset-backed securities also include debt securitised by credit card, student loan and auto loan receivables. Pricing inputs for these securities also focus on capturing, where relevant, collateral quality and performance, payment patterns and delinquencies.

The Group uses third-party pricing vendor data to value agency securitised products, which mainly include collateralised mortgage obligations (CMO) and mortgage-backed government agency securities. The valuations generally utilise observable inputs consistent with those noted above for RMBS and CMBS.

Equity securities held by the Group for proprietary investment purposes are mainly classified in level 1. Securities classified in level 1 are traded on public stock exchanges for which quoted prices are readily available.

The category "Other invested assets" includes the Group's private equity and hedge fund investments which are made directly or via ownership of funds. Valuation of direct private equity investments requires significant management judgement due to the absence of quoted market prices and the lack of liquidity. Initial valuation is based on the acquisition cost and is further refined based on the available market information for the public companies that are considered comparable to the Group's holdings in the private companies being valued and the private company-specific performance indicators, both historic and projected. Subsequent valuations also reflect business or asset appraisals, as well as market transaction data for private and public benchmark companies and the actual companies being valued, such as financing rounds and mergers and acquisitions activity. The Group's holdings in private equity and hedge funds are generally valued utilising net asset values (NAV), subject to adjustments, as deemed necessary, for restrictions on redemption (lock-up periods and amount limitations on redemptions). These investments are included under investments measured at net asset value as a practical expedient.

The Group holds both exchange-traded and OTC interest rate, foreign exchange, credit and equity derivative contracts for hedging and trading purposes. The fair values of exchange-traded derivatives measured using observable exchange prices are classified in level 1. Long-dated contracts may require adjustments to the exchange-traded prices which would trigger reclassification to level 2 in the fair value hierarchy. OTC derivatives are generally valued by the Group based on the internal models, which are consistent with industry standards and practices, and use both observable (dealer, broker or market consensus prices, spot and forward rates, interest rate and credit curves and volatility indices) and unobservable inputs (adjustments for liquidity, inputs derived from the observable data based on the Group's judgements and assumptions).

The Group's OTC interest rate derivatives primarily include interest rate swaps, futures, options, caps and floors and are valued based on the cash flow discounting models which generally utilise as inputs observable market yield curves and volatility assumptions.

The Group's OTC foreign exchange derivatives primarily include forward, spot and option contracts and are generally valued based on the cash flow discounting models, utilising as main inputs observable foreign exchange forward curves.

The Group's investments in equity derivatives primarily include OTC equity option contracts on single or baskets of market indices and equity options on individual or baskets of equity securities, which are valued using internally developed models (such as the Black-Scholes type option pricing model and various simulation models) calibrated with the inputs, which include underlying spot prices, dividend curves, volatility surfaces, yield curves and correlations between underlying assets.

The Group's OTC credit derivatives can include index and single-name credit default swaps. Plain vanilla credit derivatives, such as index and single-name credit default swaps, are valued by the Group based on the models consistent with the industry valuation standards for these credit contracts and primarily utilise observable inputs published by market data sources, such as credit spreads and recovery rates. These valuation techniques warrant classification of plain vanilla OTC derivatives as level 2 financial instruments in the fair value hierarchy.

Assets and liabilities measured at fair value on a recurring basis
As of 31 December 2022 and 30 June 2023, the fair values of assets and liabilities measured on a recurring basis by level of input were as follows:

2022 USD millions	Quoted prices in active markets for identical assets and liabilities (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Impact of netting[1]	Total
Assets					
Fixed income securities held for proprietary investment purposes	14 137	59 231	1 205		74 573
Debt securities issued by US government and government agencies	14 137	1 392			15 529
US Agency securitised products		3 515			3 515
Debt securities issued by non-US governments and government agencies		18 678			18 678
Corporate debt securities		31 641	1 205		32 846
Mortgage- and asset-backed securities		4 005			4 005
Equity securities held for proprietary investment purposes	1 599	515			2 114
Equity securities backing unit-linked business	330				330
Short-term investments held for proprietary investment purposes	2 535	6 372			8 907
Derivative financial instruments	27	1 066	60	–844	309
Interest rate contracts	5	471	5		481
Foreign exchange contracts		486			486
Equity contracts	22	68			90
Credit contracts		8			8
Other contracts		33	55		88
Other invested assets	462	1 054	481		1 997
Funds held by ceding companies		164			164
Total assets at fair value	19 090	68 402	1 746	–844	88 394
Liabilities					
Derivative financial instruments	–5	–1 478	–180	1 117	–546
Interest rate contracts	–4	–909	–2		–915
Foreign exchange contracts		–386			–386
Equity contracts	–1	–133			–134
Credit contracts		–50			–50
Other contracts			–178		–178
Liabilities for life and health policy benefits			–69		–69
Accrued expenses and other liabilities	–218	–1 356			–1 574
Total liabilities at fair value	–223	–2 834	–249	1 117	–2 189

[1] The netting of derivative receivables and derivative payables is permitted when a legally enforceable master netting agreement exists between two counterparties. A master netting agreement provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default or on the termination of any one contract.

2023 USD millions	Quoted prices in active markets for identical assets and liabilities (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Impact of netting[1]	Total
Assets					
Fixed income securities held for proprietary investment purposes	11 893	64 791	1 358		78 042
Debt securities issued by US government and government agencies	11 842	1 482			13 324
US Agency securitised products		4 015			4 015
Debt securities issued by non-US governments and government agencies		19 360			19 360
Corporate debt securities		35 370	1 358		36 728
Mortgage- and asset-backed securities	51	4 564			4 615
Equity securities held for proprietary investment purposes	166	522			688
Equity securities backing unit-linked business	310				310
Short-term investments held for proprietary investment purposes	2 135	4 966			7 101
Derivative financial instruments	5	1 001	37	–562	481
Interest rate contracts	4	435	11		450
Foreign exchange contracts		409			409
Equity contracts		86	3		89
Credit contracts		1			1
Other contracts	1	70	23		94
Other invested assets	366	914	491		1 771
Funds held by ceding companies		165			165
Total assets at fair value	**14 875**	**72 359**	**1 886**	**–562**	**88 558**
Liabilities					
Derivative financial instruments	–4	–1 178	–148	586	–744
Interest rate contracts	–4	–679	–2		–685
Foreign exchange contracts		–313			–313
Equity contracts		–112			–112
Credit contracts		–74			–74
Other contracts			–146		–146
Liabilities for life and health policy benefits			–55		–55
Accrued expenses and other liabilities	–87	–1 956			–2 043
Total liabilities at fair value	**–91**	**–3 134**	**–203**	**586**	**–2 842**

[1] The netting of derivative receivables and derivative payables is permitted when a legally enforceable master netting agreement exists between two counterparties. A master netting agreement provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default or on the termination of any one contract.

Assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3)
As of 31 December 2022 and 30 June 2023, the reconciliations of the fair values of assets and liabilities measured on a recurring basis using significant unobservable inputs were as follows:

2022 USD millions	Fixed income securities	Derivative assets	Other invested assets	Total assets	Derivative liabilities	Liabilities for life and health policy benefits	Total liabilities
Assets and liabilities							
Balance as of 1 January	1 312	86	507	1 905	–272	–83	–355
Realised/unrealised gains/losses:							
Included in net income[1]	–1	7	–20	–14	240	14	254
Included in other comprehensive income[2]	–272			–272			0
Purchases	279	21	13	313	–128		–128
Issuances				0	–82		–82
Sales	–40	–4	–16	–60	4		4
Settlements	–58	–50		–108	58		58
Transfers into level 3				0			0
Transfers out of level 3				0			0
Impact of foreign exchange movements	–15		–3	–18			0
Closing balance as of 31 December 2022	1 205	60	481	1 746	–180	–69	–249

[1] Fair value changes are reported in "Net realised investment gains/losses – non-participating business".
[2] Fair value changes from fixed income securities are reported in "Net unrealised investment gains/losses". Fair value changes from liabilities for life and health policy benefits are reported in "Credit risk of financial liabilities at fair value option".

2023 USD millions	Fixed income securities	Derivative assets	Other invested assets	**Total assets**	Derivative liabilities	Liabilities for life and health policy benefits	**Total liabilities**
Assets and liabilities							
Balance as of 1 January	1 205	60	481	**1 746**	–180	–69	**–249**
Realised/unrealised gains/losses:							
Included in net income[1]	–1	–2	7	**4**	72	14	**86**
Included in other comprehensive income[2]	14			**14**			**0**
Purchases	164	8	4	**176**			**0**
Issuances				**0**	–75		**–75**
Sales		–3		**–3**			**0**
Settlements	–26	–26		**–52**	35		**35**
Transfers into level 3				**0**			**0**
Transfers out of level 3				**0**			**0**
Impact of foreign exchange movements	2		–1	**1**			**0**
Closing balance as of 30 June 2023	**1 358**	**37**	**491**	**1 886**	**–148**	**–55**	**–203**

[1] Fair value changes are reported in "Net realised investment gains/losses – non-participating business".
[2] Fair value changes from fixed income securities are reported in "Net unrealised investment gains/losses". Fair value changes from liabilities for life and health policy benefits are reported in "Credit risk of financial liabilities at fair value option".

Gains and losses on assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3)
The gains and losses relating to the assets and liabilities measured at fair value using significant unobservable inputs (level 3) for the six months ended 30 June were as follows:

USD millions	2022	**2023**
Gains included in net income for the period	181	90
Whereof change in unrealised gains relating to assets and liabilities still held at the reporting date	108	71

Quantitative information about level 3 fair value measurements
Unobservable inputs for major level 3 assets and liabilities as of 31 December 2022 and 30 June 2023 were as follows:

USD millions	2022 Fair value	**2023** Fair value	Valuation technique	Unobservable input	Range (weighted average[1])
Assets					
Corporate debt securities	1 205	**1 358**			
Infrastructure loans	802	954	Discounted cash flow model	Valuation spread	69–463 bps (219 bps)
Private placement corporate debt	367	371	Corporate spread matrix	Credit spread	45–254 bps (134 bps)
Private placement credit tenant leases	29	25	Discounted cash flow model	Illiquidity premium	125–150 bps (146 bps)
Other derivative contracts	55	**26**			
Weather contracts	41	9	Proprietary option model	Risk margin	6–22% (5.7%)
				Correlation	-13 to -5% (-7.1%)
				Volatility (power/gas)	68–99% (90.6%)
				Volatility (temperature)	0–138 (1) HDD/CDD/CAT[2]
				Index value (temperature)	0–1 129 (3) HDD/CDD/CAT[2]
Liabilities					
Other derivative contracts and liabilities for life and health policy benefits	–247	**–201**			
Variable annuity and fair valued GMDB contracts	–187	–137	Discounted cash flow model	Risk margin	4% (n/a)
				Volatility	10.21–54.59%
				Lapse	1–10%
				Mortality improvement	0–1.5%
				Withdrawal rate (GMDB contracts)	20–97%
Weather contracts	–41	–36	Proprietary option model	Risk margin	6–22% (10.3%)
				Correlation	-26–37% (5.2%)
				Volatility (power/gas)	124–137% (135.5%)
				Volatility (temperature)	0–201 (23) HDD/CDD/CAT[2]
				Index value (temperature)	0–892 (106) HDD/CDD/CAT[2]

[1] Unobservable inputs were weighted by the relative fair value of the instruments.
[2] Heating Degree Days (HDD); Cooling Degree Days (CDD); Cumulative Average Temperature (CAT).

Uncertainty of recurring level 3 measurements from the use of significant unobservable inputs
The significant unobservable input used in the fair value measurement of the Group's infrastructure loans is valuation spread. A significant increase (decrease) in this input in isolation would have resulted in a significantly lower (higher) fair value measurement. The significant unobservable input used in the fair value measurement of the Group's private placement corporate debt securities is credit spread. A significant increase (decrease) in this input in isolation would have resulted in a significantly lower (higher) fair value measurement. The significant unobservable input used in the fair value measurement of the Group's private placement credit tenant leases is illiquidity premium. A significant increase (decrease) in this input in isolation would have resulted in a significantly lower (higher) fair value measurement.

The significant unobservable inputs used in the fair value measurement of the Group's variable annuity and fair valued guaranteed minimum death benefit (GMDB) contracts are: risk margin, volatility, lapse, mortality improvement rate and withdrawal rate. A significant increase (decrease) in isolation in each of the following inputs: risk margin, volatility and withdrawal rate would have resulted in a significantly lower (higher) fair value of the Group's obligation. A significant increase (decrease) in isolation in lapse rate would, in general, have resulted in a significantly higher (lower) fair value of the Group's obligation due to the maturity of the contracts. Changes in the mortality improvement rate impact the fair value of the Group's obligation differently for living-benefit products, compared to death-benefit products. For the former, a significant increase (decrease) in the mortality improvement rate (ie decrease (increase) in mortality) in isolation would have resulted in a decrease (increase) in fair value of the Group's liability. For the latter, a significant increase (decrease) in the mortality improvement rate in isolation would have resulted in an increase (decrease) in fair value of the Group's liability.

The significant unobservable inputs used in the fair value measurement of the Group's weather contracts are risk margin, correlation, volatility and index value. Where the Group has a long position, a significant increase (decrease) in the risk margin input in isolation would have resulted in a significantly higher (lower) fair value measurement. Where the Group has a long volatility or correlation position, a significant increase (decrease) in the correlation and volatility inputs would have resulted in a significantly higher (lower) fair value measurement. Where the Group has a long index position, an increase (decrease) in the index value input in isolation would have resulted in a significantly higher (lower) fair value measurement. Where the Group has a short position, a significant increase (decrease) in the risk margin input in isolation would have resulted in a significantly lower (higher) fair value measurement. Where the Group has a short volatility or correlation position, a significant increase (decrease) in the correlation and volatility inputs would have resulted in a significantly lower (higher) fair value measurement. Where the Group has a short index position, an increase (decrease) in the index value input in isolation would have resulted in a significantly lower (higher) fair value measurement.

Other invested assets measured at net asset value
Other invested assets measured at net asset value as of 31 December 2022 and 30 June 2023 were as follows:

USD millions	2022 Fair value	**2023** Fair value	Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Private equity funds	1 489	1 664	637	non-redeemable	n/a
Real estate funds	1	1	8	non-redeemable	n/a
Private equity direct	249	279	88	non-redeemable	n/a
Hedge funds	1	1		redeemable[1]	90 days[2]
Total	1 740	**1 945**	**733**		

[1] The redemption frequency varies by position.
[2] Cash distribution can be delayed for an extended period depending on the sale of the underlyings.

Private equity and real estate funds generally have limitations imposed on the amount of redemptions from the fund during the redemption period due to illiquidity of the underlying investments. Fees may apply for redemptions or transferring of interest to other parties. Distributions are expected to be received from these funds as the underlying assets are liquidated. The period of time over which the underlying assets are expected to be liquidated is indeterminate as investees provide liquidation notices.

The private equity direct portfolio consists of equity and equity-like investments directly in other companies. These investments have no contractual term and are generally held based on financial or strategic intent.

The hedge fund investments employ a variety of strategies, including relative value and event-driven across various asset classes.

The redemption frequency of hedge funds varies depending on the manager as well as the nature of the underlying product. Additionally, certain funds may impose lock-up periods and redemption gates as defined in the terms of the individual investment agreement.

Fair value option

The fair value option under the Financial Instruments Topic permits the choice to measure specified financial assets and liabilities at fair value on an instrument-by-instrument basis. The Group elected the fair value option for positions in the following line items:

Other invested assets

The Group elected the fair value option for certain investments classified as equity method investees within other invested assets in the balance sheet. The Group applied the fair value option, as the investments are managed on a fair value basis. The changes in fair value of these elected investments are recorded in earnings.

Funds held by ceding companies

For operational efficiencies, the Group elected the fair value option for funds held by the cedent under three of its reinsurance agreements. The assets are carried at fair value and changes in fair value are reported as a component of earnings.

Liabilities for life and health policy benefits

The Group elected the fair value option for existing GMDB reserves related to certain variable annuity contracts. The Group has applied the fair value option, as the equity risk associated with those contracts is managed on a fair value basis and it is economically hedged with derivative options in the market. The liability is carried at fair value and changes in fair value attributable to instrument-specific credit risk are reported in other comprehensive income and all other changes in fair value are reported as a component of earnings.

Assets and liabilities measured at fair value pursuant to election of the fair value option

Pursuant to the election of the fair value option for the items described, the balances as of 31 December 2022 and 30 June 2023 were as follows:

USD millions	2022	**2023**
Assets		
Other invested assets	8 794	9 104
of which at fair value pursuant to the fair value option	435	403
Funds held by ceding companies	13 929	15 419
of which at fair value pursuant to the fair value option	164	165
Liabilities		
Liabilities for life and health policy benefits	–20 925	–21 050
of which at fair value pursuant to the fair value option	–69	–55

Changes in fair values for items measured at fair value pursuant to election of the fair value option

Gains/losses included in earnings for items measured at fair value pursuant to election of the fair value option including foreign exchange impact for the six months ended 30 June were as follows:

USD millions	2022	**2023**
Other invested assets	3	–38
Funds held by ceding companies	–7	
Liabilities for life and health policy benefits		14
Total	–4	**–24**

Fair value changes from other invested assets and funds held by ceding companies are reported in "Net investment income – non-participating business". Fair value changes from the GMDB reserves are shown in "Life and health benefits".

Assets and liabilities not measured at fair value but for which the fair value is disclosed
Assets and liabilities not measured at fair value but for which the fair value is disclosed as of 31 December 2022 and 30 June 2023 were as follows:

2022 USD millions	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Total
Assets			
Policy loans		32	32
Mortgage loans		1 569	1 569
Other loans		2 443	2 443
Investment real estate		5 738	5 738
Total assets	0	9 782	9 782
Liabilities			
Debt	–9 027	–2 063	–11 090
Total liabilities	–9 027	–2 063	–11 090

2023 USD millions	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Total
Assets			
Policy loans		31	31
Mortgage loans		1 584	1 584
Other loans		2 890	2 890
Investment real estate		5 784	5 784
Total assets	**0**	**10 289**	**10 289**
Liabilities			
Debt	–9 142	–2 043	–11 185
Total liabilities	**–9 142**	**–2 043**	**–11 185**

Policy loans, other loans and certain mortgage loans are classified as level 3 measurements, as they do not have an active exit market. Some of these positions need to be assessed in conjunction with the corresponding insurance business, whilst the fair value of some other positions does not differ materially from the carrying amount. Considering these circumstances for these positions, the Group presents the carrying amount as an approximation for the fair value. For certain commercial mortgage loans and infrastructure loans, which are included in mortgage loans and other loans respectively, the fair value can be estimated using discounted cash flow models which are based on discount curves and spread inputs that require management's judgement.

Investments in real estate are fair valued primarily by external appraisers based on proprietary discounted cash flow models that incorporate applicable risk premium adjustments to discount yields and projected market rental income streams based on market-specific data. These fair value measurements are classified in level 3 in the fair value hierarchy.

Debt positions, which are fair valued based on executable broker quotes or the discounted cash flow method using observable inputs, are classified as level 2 measurements. Fair value of the majority of the Group's level 3 debt positions is judged to approximate carrying value due to the highly tailored nature of the obligation and short-notice termination provisions.

9 Derivative financial instruments

The Group uses a variety of derivative financial instruments including swaps, options, forwards, credit derivatives and exchange-traded financial futures in its trading and hedging strategies, in line with the Group's overall risk management strategy. The objectives include managing exposure to price, foreign currency and/or interest rate risk on planned or anticipated investment purchases, existing assets or liabilities, as well as locking in attractive investment conditions for future available funds.

The fair values represent the gross carrying value amounts at the reporting date for each class of derivative contract held or issued by the Group. The gross fair values are not an indication of credit risk, as many OTC transactions are contracted and documented under ISDA master agreements or their equivalent. Management believes that such agreements provide for legally enforceable set-off in the event of default, which substantially reduces credit exposure.

Fair values and notional amounts of derivative financial instruments
As of 31 December 2022 and 30 June 2023, the fair values and notional amounts of the derivatives outstanding were as follows:

2022 USD millions	Notional amount assets/liabilities	Fair value assets	Fair value liabilities	Carrying value assets/liabilities
Derivatives not designated as hedging instruments				
Interest rate contracts	15 937	481	–563	–82
Foreign exchange contracts	37 834	395	–219	176
Equity contracts	12 285	90	–134	–44
Credit contracts	10 974	8	–50	–42
Other contracts	9 969	88	–178	–90
Total	86 999	1 062	–1 144	–82
Derivatives designated as hedging instruments				
Interest rate contracts	2 992		–352	–352
Foreign exchange contracts	21 381	91	–167	–76
Total	24 373	91	–519	–428
Total derivative financial instruments	111 372	1 153	–1 663	–510
Amount offset				
Where a right of set-off exists		–669	669	
Due to cash collateral		–175	448	
Total net amount of derivative financial instruments		309	–546	–237

2023 USD millions	Notional amount assets/liabilities	Fair value assets	Fair value liabilities	Carrying value assets/liabilities
Derivatives not designated as hedging instruments				
Interest rate contracts	23 564	450	–360	90
Foreign exchange contracts	46 709	275	–249	26
Equity contracts	6 023	89	–112	–23
Credit contracts	8 545	1	–74	–73
Other contracts	9 645	94	–146	–52
Total	**94 486**	**909**	**–941**	**–32**
Derivatives designated as hedging instruments				
Interest rate contracts	2 250		–325	–325
Foreign exchange contracts	22 919	134	–64	70
Total	**25 169**	**134**	**–389**	**–255**
Total derivative financial instruments	**119 655**	**1 043**	**–1 330**	**–287**
Amount offset				
Where a right of set-off exists		–383	383	
Due to cash collateral		–179	203	
Total net amount of derivative financial instruments		**481**	**–744**	**–263**

The notional amounts of derivative financial instruments give an indication of the Group's volume of derivative activity. The fair value assets are included in "Other invested assets" and the fair value liabilities are included in "Accrued expenses and other liabilities". The fair value amounts that were not offset were nil as of 31 December 2022 and 30 June 2023.

Non-hedging activities

The Group primarily uses derivative financial instruments for risk management and trading strategies. Gains and losses of derivative financial instruments not designated as hedging instruments are recorded in "Net realised investment gains/losses — non-participating business" in the income statement.

For the six months ended 30 June, the gains and losses of derivative financial instruments not designated as hedging instruments were as follows:

USD millions	2022	**2023**
Derivatives not designated as hedging instruments		
Interest rate contracts	–32	29
Foreign exchange contracts	–1 222	228
Equity contracts	163	–201
Credit contracts	88	–62
Other contracts	135	111
Total gains/losses recognised in income	–868	**105**

Hedging activities

The Group designates certain derivative financial instruments as hedging instruments. The designation of derivative financial instruments is primarily used for overall portfolio and risk management strategies. As of 30 June 2022 and 2023, the following hedging relationships were outstanding:

Fair value hedges

The Group enters into foreign exchange and interest rate swaps to reduce the exposure to foreign exchange and interest rate volatility for certain fixed income securities and its issued long-term debt positions. These derivative instruments are designated as hedging instruments in qualifying fair value hedges.

For the six months ended 30 June, the gains and losses attributable to the hedged risks were as follows:

		2022		**2023**
USD millions	Net realised investment gains/losses — non-participating business	Interest expenses	Net realised investment gains/losses — non-participating business	Interest expenses
Total amounts of income and expense line items	–240	–300	124	–319
Foreign exchange contracts				
Gains/losses on derivatives	1 214		–162	
Gains/losses on hedged items	–1 214		162	
Amounts excluded from the effectiveness assessment				
Interest rate contracts				
Gains/losses on derivatives		–216		35
Gains/losses on hedged items		211		–37

As of 31 December 2022 and 30 June 2023, the carrying values of the hedged assets and liabilities, and the cumulative amounts of fair value hedging adjustments included therein, recognised in the balance sheet, were as follows:

		2022		**2023**
USD millions	Carrying value	Cumulative basis adjustment	Carrying value	Cumulative basis adjustment
Assets				
Fixed income securities available-for-sale	15 970		16 185	
Liabilities				
Short-term debt	–783	16		
Long-term debt	–1 852	331	–1 924	309

Hedges of the net investment in foreign operations
The Group designates derivative and non-derivative monetary financial instruments as hedging the foreign currency exposure of its net investment in certain foreign operations.

As of 31 December 2022 and 30 June 2023, the Group recorded an accumulated net unrealised foreign currency remeasurement gain of USD 1 260 million and USD 1 047 million, respectively, in "Other comprehensive income — Foreign currency translation". These offset translation gains and losses on the hedged net investment.

As of 30 June 2023, USD 85 million gains on derivative instruments, designated and qualifying in net investment hedges, were excluded from the assessment of hedge effectiveness.

Maximum potential loss
In consideration of the rights of set-off and the qualifying master netting arrangements with various counterparties, the maximum potential loss as of 31 December 2022 and 30 June 2023 was approximately USD 484 million and USD 660 million, respectively. The maximum potential loss is based on the positive market replacement cost assuming non-performance of all counterparties, excluding cash collateral.

Credit risk-related contingent features
Certain derivative instruments held by the Group contain provisions that require its debt to maintain an investment-grade credit rating. If the Group's credit rating were downgraded or no longer rated, the counterparties could request immediate payment, guarantee or an ongoing full overnight collateralisation on derivative instruments in net liability positions.

The total fair value of derivative financial instruments containing credit risk-related contingent features amounted to USD 54 million and USD 32 million as of 31 December 2022 and 30 June 2023, respectively. For derivative financial instruments containing credit risk-related contingent features, the Group posted collateral of USD 34 million and USD 28 million as of 31 December 2022 and 30 June 2023, respectively. In the event of a reduction of the Group's credit rating to below investment grade, a fair value of USD 4 million additional collateral would have had to be posted as of 30 June 2023. The total equals the amount needed to settle the instruments immediately as of 30 June 2023.

10 Disposals

Disposal of Elips Life AG
On 1 July 2022, the Group completed the sale of Elips Life AG ("elipsLife"), formerly part of Corporate Solutions business segment, to Swiss Life International, following the receipt of all required regulatory and anti-trust approvals. The agreement to sell the subsidiary was entered into in the fourth quarter of 2021.

The Group simultaneously entered into a long-term reinsurance partnership for elipsLife's inforce and new business which is part of the Reinsurance L&H and Group items business segment from 1 July 2022.

The sale of elipsLife excludes the medical business of Elips Versicherungen AG in Ireland, which remains in the Corporate Solutions business segment.

11 Debt

The Group enters into long- and short-term debt arrangements to obtain funds for general corporate use and specific transaction financing. The Group defines short-term debt as debt having a maturity at the balance sheet date of not greater than one year and long-term debt as having a maturity of greater than one year. For subordinated debt positions, maturity is defined as the first optional redemption date (notwithstanding that optional redemption could be subject to regulatory consent). Interest expense is classified accordingly.

The Group's debt as of 31 December 2022 and 30 June 2023 was as follows:

USD millions	2022	**2023**
Senior financial debt	784	
Senior operational debt	2	3
Contingent capital instruments classified as financial debt		498
Short-term debt	786	**501**
Senior financial debt	1 336	1 345
Senior operational debt	100	101
Subordinated financial debt	6 730	7 544
Subordinated operational debt	1 588	1 660
Contingent capital instruments classified as financial debt	498	
Long-term debt	10 252	**10 650**
Total carrying value	11 038	**11 151**
Total fair value	11 090	**11 185**

As of 31 December 2022 and 30 June 2023, operational debt, ie debt related to operational leverage, amounted to USD 1.7 billion (thereof USD 1.6 billion limited- or non-recourse) and USD 1.8 billion (thereof USD 1.7 billion limited- or non-recourse), respectively. Operational leverage is subject to asset/liability matching and is excluded from rating agency financial leverage calculations.

Interest expense on long-term debt and contingent capital instruments

Interest expense on long-term debt for the periods ended 30 June was as follows:

USD millions	2022	**2023**
Senior financial debt	39	25
Senior operational debt	2	2
Subordinated financial debt	184	194
Subordinated operational debt	54	51
Contingent capital instruments classified as financial debt	9	8
Total	288	**280**

The Group hedges the interest rate risk on some of its long-term debt positions. The impact of the interest rate hedge is reflected in the interest expense line in the income statement but not in the table above. For more details on the hedging, please refer to Note 9 "Derivative financial instruments".

Long-term debt issued in 2023

In May 2023, Swiss Re Ltd issued perpetual subordinated fixed spread callable loan notes with an aggregate face value of USD 750 million by fully drawing on the subordinated debt facility established in July 2017. The notes are perpetual with a next optional redemption date of 15 August 2027 and additional optional redemption dates every five years thereafter. Swiss Re Ltd pays a fixed coupon of 5.524% per annum until the next optional redemption date, which will be reset every five years to the prevailing five-year US Treasury rate plus the fixed-for-life spread of 2.76%.

12 Earnings per share

Earnings per share for the six months ended 30 June were as follows:

USD millions (except share data)	2022	2023
Basic earnings per share		
Net income	160	1 450
Non-controlling interests	–3	–3
Net income attributable to common shareholders	157	**1 447**
Weighted average common shares outstanding	289 004 937	289 191 311
Net income per share in USD	0.54	**5.00**
Net income per share in CHF[1]	0.56	**4.56**
Effect of dilutive securities		
Change in income available to common shares due to convertible debt	7	7
Change in average number of shares due to convertible debt	14 694 981	14 318 376
Change in average number of shares due to employee options	476 284	1 294 277
Diluted earnings per share		
Net income assuming debt conversion and exercise of options	164	1 454
Weighted average common shares outstanding	304 176 202	304 803 964
Net income per share in USD	0.54	**4.77**
Net income per share in CHF[1]	0.56	**4.35**

[1] The translation from USD to CHF is shown for informational purposes only and has been calculated using the Group's average exchange rates.

Dividends were declared in Swiss francs until 31 December 2022. From 1 January 2023, dividends are declared in US dollars in line with the Group's reporting currency and are paid in Swiss francs. During the twelve months ended 31 December 2022 and the six months ended 30 June 2023, the parent company of the Group (Swiss Re Ltd) paid dividends per share of CHF 5.90 and CHF 5.69 (USD 6.40), respectively.

13 Benefit plans

Net periodic benefit cost
Pension and post-retirement cost for the six months ended 30 June 2022 and 2023 were USD 16 million and USD 4 million, respectively. Pension and post-retirement cost is presented in "Operating expenses".

Employer's contribution for 2023
For the six months ended 30 June 2023, the Group contributed USD 72 million to its defined benefit pension plans and USD 8 million to other post-retirement plans, compared to USD 70 million and USD 8 million, respectively, in the same period of 2022.

The expected 2023 contributions to the defined benefit pension plans and to the post-retirement benefit plans, revised as of 30 June 2023 for the latest information, amount to USD 140 million and USD 17 million, respectively.

14 Variable interest entities

The Group enters into arrangements with variable interest entities (VIEs) in the normal course of business. The involvement ranges from being a passive investor to designing, structuring and managing the VIEs. The variable interests held by the Group arise primarily as a result of the Group's involvement in certain insurance-linked securitisations, life and health funding transactions, swaps in trusts, debt financing, investment, senior commercial mortgage and infrastructure loans as well as other entities, which meet the definition of a VIE.

When analysing whether the entity is a VIE, the Group mainly assesses if (1) the equity is sufficient to finance the entity's activities without additional subordinated financial support, (2) the equity holders have the right to make significant decisions affecting the entity's operations and (3) the holders of the voting rights substantively participate in the gains and losses of the entity.

When one of these criteria is not met, the entity is considered a VIE and is assessed for consolidation under the VIE section of the Consolidation Topic.

The party that has a controlling financial interest is called a primary beneficiary and consolidates the VIE. The party is deemed to have a controlling financial interest if it has both:

- the power to direct the activities of the VIE that most significantly impact the entity's economic performance; and
- the obligation to absorb the entity's losses that could potentially be significant to the VIE or the right to receive benefits from the entity that could potentially be significant to the VIE.

For all its variable interests in VIEs, the Group assesses whether it has a controlling financial interest in these entities and, thus, is the primary beneficiary. The Group identifies the activities that most significantly impact the entity's performance and determines whether the Group has the power to direct those activities. In conducting the analysis, the Group considers the purpose, the design and the risks that the entity was designed to create and pass through to its variable interest holders. Additionally, the Group assesses if it has the obligation to absorb losses or if it has the right to receive benefits of the VIE that could potentially be significant to the entity. If both criteria are met, the Group has a controlling financial interest in the VIE and consolidates the entity.

The Group monitors changes to the facts and circumstances of the existing involvement with legal entities to determine whether they require reconsideration of the entity's designation as a VIE or voting interest entity. For VIEs, the Group regularly reassesses the primary beneficiary determination.

The Group did not provide financial or other support to any VIEs during 2023 that it was not previously contractually required to provide.

Insurance-linked securitisations
The insurance-linked securitisations transfer pre-existing insurance risk to investors through the issuance of insurance-linked securities. In insurance-linked securitisations, the securitisation vehicle assumes the insurance risk from a sponsor through insurance or derivative contracts. The securitisation vehicle generally retains the issuance proceeds as collateral, which consists of investment-grade securities. The Group does not have potentially significant variable interest in these vehicles and therefore is not a primary beneficiary.

Typically, the variable interests held by the Group arise through ownership of insurance-linked securities, in which case the Group's maximum loss equals the principal amount of the securities held by the Group.

Life and health funding vehicles
The Group participates in certain structured transactions that retrocede longevity and mortality risks to captive reinsurers with an aim to provide regulatory capital credit to a transaction sponsor through the creation of funding notes by a separate funding vehicle which is generally considered a VIE. The Group's participation in these transactions is generally limited to providing contingent funding support via a financial contract with a funding vehicle, which represents a potentially significant variable interest in the funding vehicle. The Group does not have power to direct activities of the funding vehicles and therefore is not a primary beneficiary of the funding vehicles in these transactions. The Group's maximum exposure in these transactions equals either the total contract notional or outstanding balance of the funding notes issued by the vehicle, depending on the specific contractual arrangements.

Swaps in trusts
The Group provides interest rate and foreign exchange risk hedges to certain asset securitisation trusts which qualify as VIEs. As the Group's involvement is limited to interest rate and foreign exchange derivatives, it does not have the power to direct any activities of the trusts and therefore does not qualify as primary beneficiary of any of these trusts. These activities are in run-off.

Investment vehicles
The Group's variable interests in investment partnerships arise through ownership of the limited partner interests. Many investment partnerships are VIEs because the limited partners as a group lack kick-out or participating rights. The Group does not hold the general partner interest in the limited partnerships and therefore does not direct investment activities of the entity. Therefore, the Group lacks power over the relevant activities of the vehicles and, consequently, does not qualify as the primary beneficiary. The Group is exposed to losses when the values of the investments held by the investment vehicles decrease. The Group's maximum exposure to loss equals the Group's share of the investment.

The Group is a passive investor in structured securitisation vehicles issuing residential and commercial mortgage-backed securities (RMBS and CMBS, respectively) and other asset-backed securities (ABS). The Group's investments in RMBS, CMBS and other ABS are passive in nature and do not obligate the Group to provide any financial or other support to the issuer entities. By design, RMBS, CMBS and ABS securitisation entities are not adequately capitalised and therefore considered VIEs. The Group is not the primary beneficiary, because it does not have power to direct most significant activities. These investments are accounted for as available-for-sale as described in the investment note and not included in the tables on the following pages.

The Group consolidates an investment vehicle, because the Group holds the entire interest in the entity and makes investment decisions related to the entity. The investment vehicle is a VIE because it is structured as an umbrella company comprised of multiple sub-funds. The majority of the investments held in this vehicle are accounted for as available-for-sale and are disclosed in the investment note and not included in the tables on the following pages.

Investment vehicles for unit-linked business
Additionally, the Group invests on behalf of the policyholders as a passive investor in a variety of investment funds across various jurisdictions. By design, many of these funds meet a VIE definition. While the Group may have a potentially significant variable interest in some of these entities due to its share of the fund's total net assets, in most cases it does not have power over the fund's investment decisions or unilateral kick-out rights relative to the decision maker.

The Group is not exposed to losses in the aforementioned investment vehicles, as the investment risk is borne by the policyholder.

Senior commercial mortgage and infrastructure loans
The Group also invests in structured commercial mortgage and infrastructure loans, which are held for investment.

The commercial mortgage loans are made to non-recourse special purpose entities collateralised with commercial real estate. The entities are adequately capitalised and generally structured as voting interest entities. Occasionally, the borrower entities can be structured as limited partnerships where the limited partners do not have kick-out or participating rights, which results in the VIE designation.

The infrastructure loans are made to non-recourse special purpose entities collateralised with infrastructure project assets. Some borrower entities may have insufficient equity investment at risk, which results in the VIE designation.

The Group does not have power over the activities most significant to the aforementioned borrower entities designated as VIEs and therefore does not consolidate them.

The Group's maximum exposure to loss from its investments equals the loan outstanding amount.

Consolidated VIEs

The following table shows the total assets and liabilities in the Group's balance sheet related to VIEs of which the Group is the primary beneficiary as of 31 December 2022 and 30 June 2023:

USD millions	2022	**2023**
Fixed income securities available-for-sale	2 006	2 034
Policy loans, mortgages and other loans		87
Short-term investments	130	48
Cash and cash equivalents	84	69
Accrued investment income	26	31
Premiums and other receivables	64	78
Funds held by ceding companies	11	13
Deferred acquisition costs	8	17
Deferred tax assets	249	263
Other assets	20	22
Total assets	2 598	**2 662**
Unpaid claims and claim adjustment expenses	139	137
Unearned premiums	25	43
Funds held under reinsurance treaties	14	15
Reinsurance balances payable	21	27
Deferred and other non-current tax liabilities	248	264
Accrued expenses and other liabilities	6	10
Long-term debt	1 587	1 660
Total liabilities	2 040	**2 156**

The assets of the consolidated VIEs may only be used to settle obligations of these VIEs and to settle any investors' ownership liquidation requests. There is no recourse to the Group for the consolidated VIEs' liabilities. The assets of the consolidated VIEs are not available to the Group's creditors.

Non-consolidated VIEs

The following table shows the total assets and liabilities on the Group's balance sheet related to VIEs in which the Group held a variable interest but was not the primary beneficiary as of 31 December 2022 and 30 June 2023:

USD millions	2022	2023
Fixed income securities available-for-sale	1 671	2 110
Equity securities at fair value through earnings	64	57
Policy loans, mortgages and other loans	1 726	2 081
Other invested assets	3 082	3 357
Investments for unit-linked business	104	111
Total assets	6 647	**7 716**
Accrued expenses and other liabilities	35	30
Total liabilities	35	**30**

The following table shows the Group's assets, liabilities and maximum exposure to loss related to VIEs in which the Group held a variable interest but was not the primary beneficiary as of 31 December 2022 and 30 June 2023:

			2022			2023
USD millions	Total assets	Total liabilities	Maximum exposure to loss[1]	Total assets	Total liabilities	Maximum exposure to loss[1]
Insurance-linked securitisations	893		987	1 237		1 302
Life and health funding vehicles	15		2 212	11		2 212
Swaps in trusts	82	35	–[2]	63	30	–[2]
Investment vehicles	3 049		3 049	3 290		3 290
Investment vehicles for unit-linked business	104			111		
Senior commercial mortgage and infrastructure loans	2 504		2 504	3 004		3 004
Total	6 647	35	–[2]	**7 716**	**30**	**–[2]**

[1] Maximum exposure to loss is the loss the Group would absorb from a variable interest in a VIE in the event that all of the assets of the VIE are deemed worthless.
[2] The maximum exposure to loss for swaps in trusts cannot be meaningfully quantified due to their derivative character.

The assets and liabilities for the swaps in trusts represent the positive and negative fair values of the derivatives the Group has entered into with the trusts.

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Cautionary note on forward-looking statements

Certain statements and illustrations contained herein are forward-looking. These statements (including as to plans, objectives, targets, and trends) and illustrations provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to a historical fact or current fact.

Forward-looking statements typically are identified by words or phrases such as "anticipate", "target", "aim", "assume", "believe", "continue", "estimate", "expect", "foresee", "intend" and similar expressions, or by future or conditional verbs such as "will", "may", "should", "would" and "could". These forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause Swiss Re's (the "Group") actual results of operations, financial condition, solvency ratios, capital or liquidity positions or prospects to be materially different from any future results of operations, financial condition, solvency ratios, capital or liquidity positions or prospects expressed or implied by such statements or cause the Group to not achieve its published targets. Such factors include, among others:

- macro-economic events or developments including increased volatility of, and/or disruption in, global capital, credit, foreign exchange and other markets and their impact on the respective prices, interest and exchange rates and other benchmarks of such markets, and historically high inflation rates;
- the frequency, severity and development of, and losses associated with, insured claim events, particularly natural catastrophes, man-made disasters, pandemics, social inflation litigation, acts of terrorism or acts of war, including the ongoing war in Ukraine, and any associated governmental and other measures such as sanctions, expropriations and seizures of assets as well as the economic consequences of the foregoing;
- the Group's ability to comply with standards related to environmental, social and governance ("ESG"), sustainability and corporate social responsibility ("CSR") matters and to fully achieve goals, targets, or ambitions related to such matters;
- the Group's ability to achieve its strategic objectives;
- legal actions or regulatory investigations or actions, including in respect of industry requirements or business conduct rules of general applicability, the intensity and frequency of which may also increase as a result of social inflation;
- central bank intervention in the financial markets, trade wars or other protectionist measures relating to international trade arrangements, adverse geopolitical events, domestic political upheavals or other developments that adversely impact global economic conditions;
- mortality, morbidity and longevity experience;
- the cyclicality of the reinsurance sector;
- the Group's ability to maintain sufficient liquidity and access to capital markets, including sufficient liquidity to cover potential recapture of reinsurance agreements, early calls of debt or debt-like arrangements and collateral calls due to actual or perceived deterioration of the Group's financial strength or otherwise;
- the Group's inability to realise amounts on sales of securities on the Group's balance sheet equivalent to their values recorded for accounting purposes;

- the Group's inability to generate sufficient investment income from its investment portfolio, including as a result of fluctuations in the equity and fixed income markets, the composition of the investment portfolio or otherwise;
- changes in legislation and regulation or the interpretations thereof by regulators and courts, affecting the Group or its ceding companies, including as a result of comprehensive reform or shifts away from multilateral approaches to regulation of global operations;
- matters negatively affecting the reputation of the Group, its board of directors or its management;
- the lowering, loss or giving up of one of the financial strength or other ratings of one or more companies in the Group, and developments adversely affecting its ability to achieve improved ratings;
- uncertainties in estimating reserves, including differences between actual claims experience and underwriting and reserving assumptions, in particular in Property & Casualty Reinsurance due to higher costs caused by inflation and supply chain issues;
- policy renewal and lapse rates;
- the outcome of tax audits, the ability to realise tax loss carryforwards and the ability to realise deferred tax assets (including by reason of the mix of earnings in a jurisdiction or deemed change of control), which could negatively impact future earnings, and the overall impact of changes in tax regimes on the Group's business model;
- changes in accounting estimates or assumptions that affect reported amounts of assets, liabilities, revenues or expenses, including contingent assets and liabilities as well as changes in accounting standards, practices or policies;
- strengthening or weakening of foreign currencies;
- reforms of, or other potential changes to, benchmark reference rates;
- failure of the Group's hedging arrangements to be effective;
- significant investments, acquisitions or dispositions, and any delays, unforeseen liabilities or other costs, lower-than-expected benefits, impairments, ratings action or other issues experienced in connection with any such transactions;
- extraordinary events affecting the Group's clients and other counterparties, such as bankruptcies, liquidations and other credit-related events;
- changing levels of competition;
- the effects of business disruption due to terrorist attacks, cyberattacks, natural catastrophes, public health emergencies, hostilities or other events;
- limitations on the ability of the Group's subsidiaries to pay dividends or make other distributions; and
- operational factors, including the efficacy of risk management and other internal procedures in anticipating and managing the foregoing risks.

These factors are not exhaustive. The Group operates in a continually changing environment and new risks emerge continually. Readers are cautioned not to place undue reliance on forward-looking statements. Swiss Re undertakes no obligation to publicly revise or update any forward-looking statements, whether as a result of new information, future events or otherwise.

Note on risk factors

The operations, investments and other activities of Swiss Re Ltd ("SRL") and its subsidiaries (collectively, the "Group" or "Swiss Re") are subject to a range of risks that could adversely impact the Group's business, financial condition, results of operations, liquidity and cash flows.

General impact of adverse market conditions
Swiss Re's operations as well as its investment returns are subject to conditions in the financial markets and macroeconomic factors. Financial, credit and foreign exchange markets are experiencing continued periods of volatility reflecting a range of political, geopolitical, economic and other uncertainties, some of the more significant of which are inter-related, including high inflation.

For example, in case of a claims occurrence, higher inflation may lead to higher replacement costs than anticipated. In Property & Casualty Reinsurance, due to inflation and supply chain issues, costs to rebuild and repair structures have significantly increased and, as a result, there is a risk that Swiss Re's reserves may not be adequate to address such claims in the future.

Further adverse developments or the continuation of adverse trends that, in turn, have a negative impact on financial markets and economic conditions, could limit the Group's ability to access the capital markets and bank funding markets, could adversely affect the ability of counterparties to meet their obligations to the Group and could adversely affect the confidence of the ultimate buyers of insurance and reinsurance.

Any of the foregoing factors, developments and trends could have a material adverse effect on the Group's investment and overall results, make it difficult to determine the value of certain assets in the Group's portfolio, make it more difficult to acquire suitable investments to meet its risk and return criteria and otherwise have a material adverse effect on its business and operations.

Impact of the military conflict in Ukraine and other geopolitical developments
The ongoing military conflict in Ukraine, sanctions, and other potential impacts on the global economic environment and currencies may cause demand for the Group's products to be volatile (particularly in Europe), cause abrupt changes in the Group's customers' buying patterns, result in higher than usual insurance claims (including in relation to aviation insurance claims), interrupt the Group's ability to supply products to this region or to fulfil contractual obligations or limit customers' access to financial resources, which may impact such customers' ability to satisfy obligations to the Group. In the event that geopolitical tensions fail to abate or deteriorate further, additional sanctions may be enacted, which may adversely impact the global economy and supply chain, banking and monetary systems, markets or customers for Swiss Re's products. This could adversely affect Swiss Re's results or operations.

Sustainability and environmental, social and governance ("ESG") activities and disclosures
Swiss Re's investors, shareholders, business partners, customers and other third parties, including regulators and public authorities, are increasingly focused on environmental, social and governance ("ESG"), sustainability and corporate social responsibility ("CSR") endeavours and reporting. Swiss Re's statutory ESG reporting requirements will be due for the first time in 2024 with respect to the 2023 financial year. In addition, Swiss Re has a group sustainability strategy and a set of policies addressing ESG, sustainability, and CSR and is a member of different multistakeholder initiatives in the areas of ESG and sustainability. Through these memberships, Swiss Re demonstrates its commitment to transition its operations to net-zero greenhouse gas emissions by 2030 and its investment and underwriting portfolios to net-zero greenhouse gas emissions by 2050. Net-zero means that for every tonne of greenhouse gas emissions that cannot be avoided, an equivalent amount of CO2 needs to be removed from the atmosphere and stored permanently.

Swiss Re may be subject to greater scrutiny when it comes to its own CSR, ESG and/or sustainability endeavours and reporting and commitment to transition its operations to net-zero greenhouse gas emissions by 2030 and its investment and underwriting portfolios to net-zero greenhouse gas emissions by 2050. If Swiss Re does not adapt to or comply with the evolving investor, shareholder, business partner or third party, including regulators and public authorities, expectations and CSR, ESG and/or sustainability recommendations, standards, norms, metrics or regulatory requirements and/or does not meet its CSR, ESG and/or sustainability targets, goals and/or ambitions, Swiss Re can be perceived to have not responded appropriately to CSR, ESG and/or sustainability recommendations, standards, norms, metrics or regulatory requirements. Furthermore, Swiss Re may suffer from reputational damage and/or litigation or regulatory proceedings, which could result in its financial condition, results of operations, business and prospects being materially and adversely affected. In addition, changes and uncertainty in relation to policies or regulations regarding sustainability, ESG or CSR matters as well as the fragmentation of ESG legislation globally, may result in potential investigation and litigation, higher regulatory and compliance costs and increased capital expenditures, which could result in Swiss Re's financial condition being materially and adversely affected.

In addition, Swiss Re's investors, shareholders, business partners and third parties look to ESG rating systems, or disclosure frameworks that have been developed by third party groups to allow comparisons between companies on ESG factors as they evaluate investment decisions as well as company disclosures. Swiss Re does not participate in all of the available rating systems, and would not necessarily score well in all of the available ratings systems. Further, the criteria used in these ratings systems change frequently, and Swiss Re cannot guarantee that it will be able to score well as criteria change. Failure to participate in certain third-party ratings systems, failure to score well in those ratings systems or failure to provide certain ESG disclosures could result in reputational damage, which could result in Swiss Re's financial condition, results of operations, business and prospects being materially and adversely affected.

Risk of unexpected and unintended issues related to claims and coverage, including social inflation
As industry practices and legal, judicial, social and other environmental conditions change, unexpected and unintended issues related to risk of claims and coverage developing in an adversely different manner than originally anticipated may continue to emerge. Such issues have adversely affected, and may in the future adversely affect, the Group's business by either requiring it to extend coverage beyond its underwriting intent or by increasing the number or amounts of claims against the Group. For example, the trend of social inflation has increased liability claims against the Group in recent years. There has been an increase in severity of awards and settlements affecting excess and umbrella layers, particularly in the US, as well as an increase in commercial automotive and general liability claims. The Group has continued to pro-actively strengthen its reserves and has considered the latest information and outlook related to such claims, including in relation to economic and social inflation when making its reserve decisions. In addition, the Group closely monitors the intersection between social inflation, economic inflation and loss trend and intends to adjust its pricing accordingly. The Group intends to continue to manage its exposure to large corporate risks in line with its cautious view on social inflation. Despite the Group's various measures to address these issues, there remains uncertainty on how these unintended issues related to claims and coverage may impact the Group's business. If the Group's reserving and pricing is not adequate to cover these issues, there could be an additional adverse effect for the Group's business, financial condition or results of operations.

Swiss Re's group structure continues to evolve
In February 2023, Swiss Re Ltd announced plans to streamline its organisational structure, which came into effect on 3 April 2023. The reorganisation aims to simplify structures, improve efficiency and improve client experience. As a result of the reorganisation, the current Reinsurance Business Unit was split into Property & Casualty Reinsurance and Life & Health Reinsurance, with each having full authority over the respective underwriting and claims management processes. In addition to Corporate Solutions, a fourth Business Unit was created under the name Global Clients and Solutions servicing Swiss Re's global reinsurance clients, Public Sector Solutions, iptiQ and Reinsurance Solutions.

The reorganisation may present financial, managerial and operational risks, including an interruption of, or loss of momentum in the activities of one or more of Swiss Re's Business Units. In addition, it is not guaranteed that the reorganisation will simplify Swiss Re's structures, improve efficiency and client experience and the reorganisation process may prove to be more complex, time consuming and require substantially more resources than originally anticipated. Any delays or difficulties encountered in connection with the reorganisation, could result in Swiss Re's financial condition, results of operations, business and prospects being materially and adversely affected.

Insurance, operational and other risks
As part of the Group's ordinary course of operations, the Group is subject to a variety of risks, including risks that reserves may not adequately cover future claims and benefits; risks that catastrophic events (including natural catastrophes, such as hurricanes, cyclones, tornadoes, windstorms, hail storms, wildfires, floods and earthquakes, as well as extreme space weather events such as solar storms and geomagnetic activity, and man-made disasters, such as acts of terrorism, cyberattacks and other disasters such as explosions, industrial accidents and fires, as well as diseases, pandemics, epidemics and humanitarian crises) are inherently unpredictable in terms of both their frequency and severity (as well as heightened accumulation risk e.g. in the case of cyberattacks) and have exposed, and may continue to expose, the Group to unexpected large losses (and related uncertainties in

estimating future claims in respect of such events); changes in the insurance industry that affect ceding companies, particularly those that further increase their sensitivity to counterparty risk; competitive conditions (including as a result of consolidation and the availability of significant levels of alternative capacity); cyclicality of the industry; risks related to emerging claims and coverage issues (including, in particular, social inflation); macro developments giving rise to emerging risks, such as climate change and technological developments (including greater exposure to cyber risks, where accumulation risk is yet to be fully understood, which could have a range of consequences from operational disruption, to loss of proprietary or customer data, to greater regulatory burdens and potential liability); risks arising from the Group's dependence on policies, procedures and expertise of ceding companies; risks related to investments in emerging markets; and risks related to the failure of, or attacks directed at, the Group's operational systems and infrastructure, including its information technology networks and systems. Any of the foregoing, as well as the occurrence of future risks that the Group's risk management procedures fail to identify or anticipate, could have a material adverse effect on the Group, and could also give rise to reputational risk.

Financial and capital market risk
Volatility and disruption in the global financial markets could expose the Group to significant financial and capital markets risk, including volatility in the banking sector, changes in interest rates, credit spreads, equity prices and foreign currency exchange rates, which may adversely impact the Group's financial condition, results of operations, liquidity and capital position. The Group's exposure to interest rate risk is primarily related to the market price and cash flow variability associated with changes in interest rates. In general, a higher interest rate environment is beneficial to the insurance and reinsurance industries, supporting earnings capacity via higher investment income. Additionally, an increase in interest rates results in an increase in the Group's Swiss Solvency Test ratio, while reducing US GAAP shareholders' equity. Exposure to credit spreads primarily relates to market price and cash flow variability associated with changes in credit spreads. When credit spreads widen, the net unrealised loss position of the Group's investment portfolio can increase, as could other-than-temporary impairments.

The Group is exposed to changes in the level and volatility of equity prices, as well as the value of securities or instruments that derive their value from a particular equity security, a basket of equity securities or a stock index. The Group is also subject to equity price risk to the extent that the values of life-related benefits under certain products and life contracts, most notably variable annuity contracts, are wholly or partially exposed, directly and/or indirectly, to market fluctuations, including equity prices. To the extent market values fall, the financial exposure on guarantees related to these contracts would increase to the extent this exposure is not hedged. While the Group has an extensive hedging programme covering its existing variable annuity business, certain risks cannot be hedged, including actuarial, basis and correlation risks. Exposure to foreign exchange risk arises from changes in spot prices, forward prices and volatilities of currency rates.

The Group seeks to manage the risks inherent in its investment portfolio by repositioning the portfolio from time to time, as needed, and to reduce risk and fluctuations through the use of hedges and other risk management tools. These risks can have a significant effect on investment returns and market values of securities positions, which in turn may affect both the Group's results of operations and financial condition. The Group continues to focus on asset-liability management for its investment portfolio, but pursuing even this strategy has its risks, including a possible mismatch between investments and liability benchmarks, that, in turn, can lead to reinvestment risk.

Legal, regulatory and tax risks
In the ordinary course of business, the Group is involved in lawsuits, arbitrations and other formal and informal dispute resolution procedures, the outcomes of which determine the Group's rights and obligations under insurance, reinsurance or other contractual agreements. From time to time, the Group may institute, or be named as a defendant in, legal proceedings, and the Group may be a claimant or respondent in arbitration proceedings. These proceedings could involve coverage or other disputes with ceding companies, disputes with parties to which the Group transfers risk under reinsurance arrangements, disputes with other counterparties or other matters. The Group cannot predict the outcome of any of the foregoing, which could be material for the Group.

In the future, the Group could be involved in investigations and regulatory proceedings, which could result in adverse judgments, settlements, fines and other outcomes. These investigations and proceedings could relate to insurance or reinsurance matters, or could involve broader business conduct rules, including those in respect of market abuse, bribery, money laundering, sanctions, competition law, data protection and privacy or ESG, CSR and/or sustainability issues. The Group also is subject to audits and challenges from time to time by tax authorities, which could result in increases in tax costs, changes to internal structures and interest and penalties. Tax authorities may also actively pursue additional taxes based on retroactive changes to tax laws. The Group could be subject to risks arising from alleged, or actual, violations of any of the foregoing, and could also be subject to litigation or enforcement actions arising from potential employee misconduct, including non-compliance with internal policies and procedures, negligence and malfeasance, such as undertaking or facilitating cyber-attacks on internal systems. Substantial legal liability could materially adversely affect the Group's business, financial condition or results of operations or could cause significant reputational harm, which could seriously affect its business.

Changes in the legal, regulatory or tax environment
Swiss Re and its subsidiaries operate in a highly regulated environment, which continues to change over time. The regulatory regimes to which members of the Group are subject have changed significantly in recent years and are expected to continue to evolve. While some regulation is national in scope, the global nature of the Group's business means that its operations are subject to a patchwork of global, national and regional standards. Swiss Re and its subsidiaries are subject to group supervision and Swiss Re's subsidiaries are also subject to applicable regulation in each of the jurisdictions in which they conduct business, particularly Switzerland, the United States, Luxembourg and Singapore. Swiss Re, as well as its Swiss-regulated entities, is subject to the Swiss Solvency Test and, through its legal entities and branches organised in the European Economic Area ("EEA"), Solvency II.

In Switzerland, where, among other operating and non-operating legal entities, Swiss Re's holding SRL and ultimate operating legal entity Swiss Reinsurance Company Ltd are located, the partial revision of the Swiss Insurance Supervision Act and Swiss Insurance Supervision Ordinance will enter into force on 1 January 2024. The revision includes various changes some of which may lead to higher compliance and legal costs, the possibility of higher operational, capital and liquidity costs as well as the risk of losing business due to the new regulation on (re)insurance intermediaries. As a result of the partial revision of the Swiss Insurance Supervision Act and Swiss Insurance Supervision Ordinance, FINMA is expected to be consulted on further regulatory changes during 2023. These further regulatory changes are expected to enter into force on 1 July 2024.

While certain regulatory processes are designed in part to foster convergence and achieve recognition of group supervisory schemes, the Group continues to face risks of extra-territorial application of regulations, particularly as to group supervision and group solvency requirements. In addition, regulators in jurisdictions beyond those where the Group has core operations increasingly are playing a far greater oversight role, requiring more localised resources and, despite a predominantly local focus, also raise issues of a cross border nature. Furthermore, evolving regulatory schemes and requirements may be inconsistent or may conflict with each other, thereby subjecting the Group, particularly in light of the increasing focus on legal entities in isolation, to higher compliance and legal costs, as well as the possibility of higher operational, capital and liquidity costs.

On the international level, certain large insurance companies were designated as global systemically important insurers ("G-SIIs") and reinsurance companies faced potential designation as G-SIIs. While the Financial Stability Board ("FSB") in consultation with the International Association of Insurance Supervisors ("IAIS") decided to discontinue the annual identification of G-SIIs, the IAIS will assess systemic risks through the holistic framework for systemic risk that entered into force in the beginning of 2020. The framework embraces an enhanced set of policy measures targeted at the exposures and activities that can lead to systemic risks from the insurance sector. The Group cannot predict what additional regulatory changes will be implemented as the IAIS systemic risk process evolves and what any such changes may mean for how the Group is structured in any particular jurisdiction and how aspects of its business may be affected.

Current discussions on domestic systemically important insurers ("D-SIIs") are ongoing in certain jurisdictions.

Large internationally active insurance groups ("IAIGs"), which is a designation compiled by the IAIS as identified by group-wide supervisors, may become subject to a risk-based group-wide global insurance capital standard ("ICS"). ICS Version 2.0 was adopted in November 2019 for a five-year confidential reporting period during which time no supervisory action will be taken on the basis of the monitoring. A revised Candidate ICS as a Prescribed Capital Requirement ("PCR") version of the ICS is being consulted on during 2023 with a planned adoption in 2024 ahead of becoming a PCR in 2025. In November 2019, the IAIS also adopted the Common Framework for the Supervision of Internationally Active Insurance Groups ("ComFrame"), as well as some changes to a number of Insurance Core Principles ("ICPs") – principles and standards on supervision of insurers which apply to insurance companies regardless of size and international exposures. ComFrame strengthens ICP requirements for IAIGs and, inter alia, proposes that the group-wide supervisor, in consultation with the host supervisors, should exercise discretion in requiring IAIGs to submit recovery plans. Swiss Re has been classified as an IAIG.

The Group can neither predict which legislative and/or regulatory initiatives will be enacted or promulgated, nor their scope and content, their date of enactment or their implications for the industry, in general, and for the Group, in particular. The Group may be subject to changes in views of its supervisors in respect of the models that the Group uses for capital and solvency purposes, and could be adversely affected if, for example, it is required to use standard models rather than internal models. Generally, legal and regulatory changes could have a material impact on the Group's business. Notwithstanding the departure of the United Kingdom from the EU single market and customs union, continued uncertainty regarding the ways in which the future relationship between the United Kingdom and the European Union will evolve could also impact the legislative and/or regulatory regimes to which the Group is subject (including Solvency II), both in the United Kingdom and in the European Union.

Regulatory changes also could occur in areas of broader application, such as competition policy and tax laws. For example, changes in tax laws, or the interpretation of the tax laws or tax regulations in jurisdictions in which the Group does business, or withdrawals of tax rulings in jurisdictions such as Switzerland that have issued such rulings to Swiss Re, could increase the taxes the Group pays, or impact the attractiveness of products offered by the Group, the Group's investment activities or the value of deferred tax assets. These changes, or inconsistencies between the various regimes that apply to the Group, could increase the costs of doing business (including due to increased capital requirements), reduce access to liquidity, limit the scope of current or future business or affect the competitive balance, or could make reinsurance less attractive to primary insurers.

Risks relating to credit rating downgrades
Ratings are an important factor in establishing the competitive position of (re)insurance companies. Third party rating agencies assess and rate the financial strength of (re)insurers, such as Swiss Re. These ratings are intended to measure a company's ability to repay its obligations and are based upon criteria established by the rating agencies. Ratings may be solicited or unsolicited.

The Group's solicited ratings reflect the current opinion of the rating agencies with whom we maintain an interactive rating relationship for the purpose of solicited ratings. One or more of the Group's ratings could be downgraded or withdrawn in the future, or the Group may decide to give up such rating voluntarily. In addition, unsolicited ratings may also be downgraded or withdrawn, such as the downgrade in April 2020 of unsolicited insurer financial strength and long-term issuer default ratings assigned to various entities within the Group. Rating agencies may, in their sole discretion, increase the frequency and scope of ratings reviews, revise their criteria or take other actions that may negatively impact the Group's ratings and/or the ratings of its legal entities, which it cannot predict. In addition, changes to the process or methodology of issuing ratings, changes in regulation, or the occurrence of events or developments affecting the Group, could adversely affect the Group's existing ratings or make it more difficult for the Group to achieve improved ratings which it would otherwise have expected. In particular, it is possible that the Group's ratings could be negatively affected by a range of current challenges faced by the Group and the industry, such as the challenging market environment, the level of natural catastrophe losses, underwriting performance, adequacy of reserves, changes in senior management, economic trends and financial market performance on the Group. Any of the foregoing, or a combination of the foregoing, could have a negative impact on the Group's business.

As financial strength ratings are a key factor in establishing the competitive position of (re)insurers, a decline in ratings of Swiss Re and/or the ratings of its key rated legal entities could make (re)insurance provided by the Group less attractive to clients relative to (re)insurance from competitors with similar or stronger ratings. A decline in ratings could also cause the loss of clients who are required by either policy or regulation to purchase (re)insurance only from (re)insurers with certain ratings, or whose confidence in the Group is otherwise diminished. Certain larger (re)insurance and derivative contracts may contain terms that would allow the ceding companies or counterparties to terminate the contract if the Group's ratings or those of its subsidiaries are downgraded beyond a certain threshold. Furthermore, ratings directly impact the availability and terms of unsecured financing (potentially impacting both the Group's ability to rollover existing facilities and/or obtain new facilities) and declines in the Group's ratings or the ratings of legal entities within the Group could also obligate the Group to provide collateral or other guarantees in the course of its business or trigger early termination of funding and/or derivative arrangements. As a ratings decline could also have a material adverse impact on the Group's costs of borrowing or ability to access the capital markets, the adverse implications of a downgrade could be more severe.

Coronavirus
The global spread of the coronavirus and the disease it causes ("COVID-19"), and the actions taken to slow the spread of the pandemic, have had an adverse impact on communities, social and business interactions, economic activities and economies across the globe. The global economy remains exposed to developments around COVID-19 and the global insurance industry remains exposed to adverse claims with regards to additional health care costs and higher mortality as well as legal actions on a number of pandemic-related claims in a number of jurisdictions.

Use of models; accounting matters
The Group is subject to risks relating to the preparation of estimates and assumptions that its management uses, for example, as part of its risk models as well as those that affect the reported amounts of assets, liabilities, revenues and expenses in the Group's financial statements (such as assumptions related to the Group's capital requirements and anticipated liabilities), including assumed and ceded business. For example, the Group estimates premiums pending receipt of actual data from ceding companies, which actual data could deviate from the estimates (and could be adversely affected if premiums turn out to be lower, while claims stay the same). In addition, particularly with respect to catastrophic events, it may be difficult to estimate losses, and preliminary estimates may be subject to a high degree of uncertainty and change as new information becomes available. Deterioration in market conditions could have an adverse impact on assumptions used for financial reporting purposes, which could affect possible impairment of present value of future profits, fair value of assets and liabilities, deferred acquisition costs or goodwill. Moreover, regulators could require the use of standard models instead of permitting the use of internal models. To the extent that management's estimates or assumptions prove to be incorrect, it could have a material impact on underwriting results (in the case of risk models) or on reported financial condition or results of operations (in the case of accounting judgments), and such impact could be material.

The Group's results may be impacted by changes in accounting standards, or changes in the interpretation of accounting standards. Changes in accounting standards could impact future reported results or require restatement of past reported results. The Group's results may also be impacted if regulatory authorities take issue with any conclusions the Group may reach in respect of accounting matters. This applies to the financial reporting under US GAAP until end of 2023 and under IFRS 17 from 2024 onwards.

The Group uses non-GAAP financial measures in its external financial reporting. These measures are not prepared in accordance with US GAAP or any other comprehensive set of accounting rules or principles and should not be viewed as a substitute for measures prepared in accordance with US GAAP. Moreover, these may be different from, or otherwise inconsistent with, non-GAAP financial measures used by other companies. These measures have inherent limitations, are not required to be uniformly applied and are not audited.

In its 2023 annual report, the Group included a separate section in respect of its results, including financial statements, prepared in accordance with the Group's proprietary economic value management ("EVM") principles ("EVM section"). Financial information included in the EVM section contains non-GAAP financial measures. The EVM principles differ significantly from US GAAP and, accordingly, the Group's results prepared in accordance with US GAAP will differ from its EVM results, and those differences could be material. The Group's annual EVM results can be more volatile than the US GAAP results because, among others, assets and liabilities are measured on a market consistent basis, profit recognition on new contracts is recognised at inception rather than over the lifetime of the contract, and life and health actuarial assumptions are on a best estimate basis as opposed to generally being locked-in. The Group's EVM financial statements should not be viewed as a substitute for the Group's US GAAP financial statements.

Credit risk
If the credit markets were to deteriorate, the Group could experience losses. Changes in the market value of the underlying securities and other factors impacting their price could give rise to market value losses. The Group could also face write-downs in other areas of neits portfolio, including other structured instruments, and the Group and its counterparties could face difficulties in valuing credit-related instruments. Differences in opinion with respect to valuations of credit-related instruments could result in legal disputes among the Group and its counterparties as to their respective obligations, the outcomes of which are difficult to predict and could be material. The Group is also subject to credit and other risks in its credit business, including reliance on banks that underwrite and monitor facilities in which the Group participates and potential default by borrowers under those facilities.

Liquidity risks
The Group's business requires, and its clients expect, that it has sufficient capital and sufficient liquidity to meet its (re)insurance obligations, and that this would continue to be the case following the occurrence of any foreseeable event or series of events, including extreme catastrophes, that would trigger insurance or reinsurance coverage obligations. The Group's uses of funds include, among other things, payment of its obligations arising in its insurance and reinsurance businesses (including claims and other payments as well as insurance provision repayments due to portfolio transfers, securitisations and commutations), which may include large and unpredictable claims (including catastrophe claims), funding of capital requirements and operating costs, payment of principal and interest on outstanding indebtedness and funding of acquisitions. The Group also has unfunded capital commitments in its private equity and hedge fund investments, which could result in funding obligations at a time when it is subject to liquidity constraints. In addition, the Group has potential collateral requirements in connection with a number of reinsurance arrangements, the amounts of which may be material and the meeting of which could require the Group to liquidate cash equivalents or other securities.

The Group manages liquidity and funding risks by focusing on the liquidity stress that is likely to result from extreme capital markets scenarios or from extreme loss events or combinations of the two. Generally, the ability to meet liquidity needs could be adversely impacted by factors that the Group cannot control, such as market dislocations or interruptions, adverse economic conditions, severe disruption in the financial and worldwide credit markets and the related increased constraints on the availability of credit; changes in interest rates, foreign exchange rates and credit spreads; or by perceptions among market participants of the extent of the Group's liquidity needs.

Unexpected liquidity needs (including to meet collateral calls) could require the Group to increase levels of indebtedness or to liquidate investments or other assets. Should the Group require liquidity at a time when access to bank funding and the capital markets is limited, it may be unable to secure new sources of funding. The Group's ability to meet liquidity needs through asset sales may be constrained by market conditions and the related stress on valuations. In addition, the Group's ability to meet liquidity needs through the incurrence of debt may be limited by constraints on the general availability of credit in the case of bank funding, and adverse market conditions, in the case of capital markets debt. Failure to meet covenants in lending arrangements could further constrain access to liquidity. The Group's ability to meet liquidity needs may also be constrained by regulatory requirements that require regulated entities to maintain or increase regulatory capital, or that restrict intragroup transactions, the timing of dividend payments from subsidiaries or the fact that certain assets may be encumbered or are otherwise not tradeable. Finally, any adverse ratings action against the Group could trigger a need for further liquidity (for example, by triggering termination provisions or margin calls/collateral delivery requirements in contracts to which Swiss Re is a party) at a time when the Group's ability to obtain liquidity from external sources is limited by such ratings action. See also "Risks relating to credit rating downgrades."

Counterparty risks
The Group is exposed to the risk of defaults, or concerns about defaults, by its counterparties. Issuers or borrowers whose securities or loans the Group holds, trading counterparties, counterparties under swaps and other derivative contracts, clearing agents, clearing houses and other financial intermediaries may default on their obligations to the Group due to bankruptcy, insolvency, restructuring, regulatory intervention, lack of liquidity, adverse economic conditions, operations failure, fraud or other reasons, which could also have a material adverse effect on the Group. The Group has increased its allocation to higher return-generating strategies, including high-quality corporate debt and some alternative assets, which tend to also be subject to potentially greater counterparty risk than government bonds.

The Group could also be adversely affected by the insolvency of, or other credit constraints affecting, counterparties in its insurance and reinsurance operations. Moreover, the Group could be adversely affected by liquidity issues at ceding companies or at third parties to whom the Group has retroceded risk, and such risk could be exacerbated to the extent any such exposures are concentrated.

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03 November 2023
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