Swiss Re

Financial Statements

This document is an extract from Swiss Re's Financial Report 2022.
The complete Financial Report 2022 (including applicable disclaimers)
is available at https://reports.swissre.com/2022/

Income statement

For the years ended 31 December

USD millions	Note	2021	2022
Revenues			
Gross premiums written	4	46 658	**47 889**
Net premiums written	4	43 220	**43 917**
Change in unearned premiums		–753	**–1 049**
Premiums earned	3	42 467	**42 868**
Fee income from policyholders	3	259	**250**
Net investment income – non-participating business[1]	7	3 373	**2 869**
Net realised investment gains/losses – non-participating business[2]	7	537	**–3**
Net investment result – unit-linked business	7	63	**–43**
Other revenues		40	**57**
Total revenues		46 739	**45 998**
Expenses			
Claims and claim adjustment expenses	3	–17 181	**–19 271**
Life and health benefits	3	–14 992	**–14 057**
Return credited to policyholders		–431	**–280**
Acquisition costs	3	–8 228	**–7 800**
Operating expenses		–3 505	**–3 369**
Total expenses before interest expenses		–44 337	**–44 777**
Income before interest and income tax expense		2 402	**1 221**
Interest expenses		–571	**–570**
Income before income tax expense		1 831	**651**
Income tax expense	14	–394	**–171**
Net income before attribution of non-controlling interests		1 437	**480**
Income/loss attributable to non-controlling interests			**–8**
Net income attributable to common shareholders		1 437	**472**
Earnings per share in USD			
Basic	13	4.97	**1.63**
Diluted	13	4.78	**1.60**
Earnings per share in CHF[3]			
Basic	13	4.52	**1.63**
Diluted	13	4.35	**1.60**

[1] Total impairments for the years ended 31 December of nil in 2021 and USD 18 million in 2022, respectively, were fully recognised in earnings.
[2] Total impairments for the years ended 31 December of USD 10 million in 2021 and of USD 70 million in 2022, respectively, were fully recognised in earnings.
[3] 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 years ended 31 December

USD millions	2021	**2022**
Net income before attribution of non-controlling interests	1 437	**480**
Other comprehensive income, net of tax:		
Change in net unrealised investment gains/losses	–2 951	**–9 736**
Change in other-than-temporary impairment	–5	**–2**
Change in foreign currency translation	–461	**68**
Change in adjustment for pension benefits	259	**124**
Change in credit risk of financial liabilities at fair value option		**–1**
Other comprehensive income/loss attributable to non-controlling interests	–16	**–7**
Total comprehensive income/loss before attribution of non-controlling interests	–1 737	**–9 074**
Comprehensive income/loss attributable to non-controlling interests	16	**–1**
Total comprehensive income/loss attributable to common shareholders	–1 721	**–9 075**

Reclassification out of accumulated other comprehensive income
For the years ended 31 December

2021 USD millions	Net unrealised investment gains/losses[1]	Other-than-temporary impairment[1]	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	5 760	–1	–5 755	–808	4	–800
Change during the period	–4 063	–6	–335	259		–4 145
Amounts reclassified out of accumulated other comprehensive income	367		–13	70		424
Tax	745	1	–113	–70		563
Balance as of period end	2 809	–6	–6 216	–549	4	–3 958

2022 USD millions	Net unrealised investment gains/losses[1]	Other-than-temporary impairment[1]	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	–13 429	–2	206	132	–1	**–13 094**
Amounts reclassified out of accumulated other comprehensive income	1 197		–5	25		**1 217**
Tax	2 496		–133	–33		**2 330**
Balance as of period end	**–6 927**	**–8**	**–6 148**	**–425**	**3**	**–13 505**

[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".

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

Balance sheet

Assets
As of 31 December

USD millions	Note	2021	2022
Investments	7, 8, 9		
Fixed income securities:			
Available-for-sale (including 13 662 in 2021 and 12 355 in 2022 subject to securities lending and repurchase agreements) (amortised cost: 2021: 82 230; 2022: 82 638)		85 685	**74 089**
Trading (including 824 in 2021 and 143 in 2022 subject to securities lending and repurchase agreements)		1 300	**484**
Equity securities at fair value through earnings (including 2 in 2021 and 12 in 2022 subject to securities lending and repurchase agreements)		3 978	**2 114**
Policy loans, mortgages and other loans		3 943	**4 343**
Investment real estate		2 871	**2 931**
Short-term investments (including 1 384 in 2021 and 1 465 in 2022 subject to securities lending and repurchase agreements)		8 462	**8 907**
Other invested assets		9 879	**8 794**
Investments for unit-linked business (including equity securities at fair value through earnings: 468 in 2021 and 330 in 2022)		468	**330**
Total investments		116 586	**101 992**
Cash and cash equivalents (including 903 in 2021 and 421 in 2022 subject to securities lending, and 4 in 2021 and 5 in 2022 backing unit-linked contracts)		5 051	**4 077**
Accrued investment income		638	**684**
Premiums and other receivables		16 875	**18 145**
Reinsurance recoverable on unpaid claims and policy benefits		6 482	**6 507**
Funds held by ceding companies		12 532	**13 929**
Deferred acquisition costs	6	8 142	**8 121**
Acquired present value of future profits	6	836	**794**
Goodwill		3 970	**3 863**
Income taxes recoverable		341	**356**
Deferred tax assets	14	6 131	**8 284**
Other assets		3 983	**3 924**
Total assets		181 567	**170 676**

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

Liabilities and Equity
As of 31 December

USD millions	Note	2021	2022
Liabilities			
Unpaid claims and claim adjustment expenses	5	84 096	**85 418**
Liabilities for life and health policy benefits		22 196	**20 925**
Policyholder account balances		5 147	**4 850**
Unearned premiums		14 134	**14 747**
Funds held under reinsurance treaties		6 553	**6 921**
Reinsurance balances payable		1 074	**1 837**
Income taxes payable		320	**254**
Deferred and other non-current tax liabilities	14	6 384	**6 011**
Short-term debt	11	862	**786**
Accrued expenses and other liabilities		6 800	**5 866**
Long-term debt	11	10 323	**10 252**
Total liabilities		157 889	**157 867**
Equity			
Common shares, CHF 0.10 par value			
2021: 317 497 306; 2022: 317 497 306 shares authorised and issued		30	**30**
Additional paid-in capital		266	**293**
Treasury shares, net of tax		–1 402	**–1 398**
Accumulated other comprehensive income:			
Net unrealised investment gains/losses, net of tax		2 809	**–6 927**
Other-than-temporary impairment, net of tax		–6	**–8**
Foreign currency translation, net of tax		–6 216	**–6 148**
Adjustment for pension and other post-retirement benefits, net of tax		–549	**–425**
Credit risk of financial liabilities at fair value option, net of tax		4	**3**
Total accumulated other comprehensive income		–3 958	**–13 505**
Retained earnings		28 632	**27 279**
Shareholders' equity		23 568	**12 699**
Non-controlling interests		110	**110**
Total equity		23 678	**12 809**
Total liabilities and equity		181 567	**170 676**

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

Statement of shareholders' equity

For the years ended 31 December

USD millions	2021	2022
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	251	**266**
Share-based compensation	21	**13**
Realised gains/losses on treasury shares	–6	**14**
Balance as of period end	266	**293**
Treasury shares, net of tax		
Balance as of 1 January	–1 396	**–1 402**
Purchase of treasury shares	–48	**–44**
Issuance of treasury shares, including share-based compensation to employees	42	**48**
Balance as of period end	–1 402	**–1 398**
Net unrealised investment gains/losses, net of tax		
Balance as of 1 January	5 760	**2 809**
Changes during the period	–2 951	**–9 736**
Balance as of period end	2 809	**–6 927**
Other-than-temporary impairment, net of tax		
Balance as of 1 January	–1	**–6**
Changes during the period	–5	**–2**
Balance as of period end	–6	**–8**
Foreign currency translation, net of tax		
Balance as of 1 January	–5 755	**–6 216**
Changes during the period	–461	**68**
Balance as of period end	–6 216	**–6 148**
Adjustment for pension and other post-retirement benefits, net of tax		
Balance as of 1 January	–808	**–549**
Changes during the period	259	**124**
Balance as of period end	–549	**–425**

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

USD millions	2021	2022
Credit risk of financial liabilities at fair value option, net of tax		
Balance as of 1 January	4	**4**
Changes during the period		**–1**
Balance as of period end	4	**3**
Retained earnings		
Balance as of 1 January	29 050	**28 632**
Net income after attribution of non-controlling interests	1 437	**472**
Dividends on common shares	–1 855	**–1 825**
Balance as of period end	28 632	**27 279**
Shareholders' equity	23 568	**12 699**
Non-controlling interests		
Balance as of 1 January	123	**110**
Transactions with non-controlling interests	3	
Income/loss attributable to non-controlling interests		**8**
Other comprehensive income attributable to non-controlling interests:		
Change in net unrealised investment gains/losses	–5	**–4**
Change in foreign currency translation	–11	**–3**
Dividends to non-controlling interests		**–1**
Balance as of period end	110	**110**
Total equity	23 678	**12 809**

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

Statement of cash flows

For the years ended 31 December

USD millions	2021	2022
Cash flows from operating activities		
Net income attributable to common shareholders	1 437	**472**
Add income/loss attributable to non-controlling interests		**8**
Adjustments to reconcile net income to net cash provided/used by operating activities:		
Depreciation, amortisation and other non-cash items	666	**425**
Net realised investment gains/losses	–578	**67**
Income from equity-accounted investees, net of dividends received	–570	**258**
Change in:		
Technical provisions and other reinsurance assets and liabilities, net	4 251	**3 263**
Funds held by ceding companies and under reinsurance treaties	–400	**–1 019**
Reinsurance recoverable on unpaid claims and policy benefits	–474	**–143**
Other assets and liabilities, net	–81	**–460**
Income taxes payable/recoverable	136	**–248**
Derivative financial instruments and collateral, net	–283	**304**
Net cash provided/used by operating activities	4 104	**2 927**
Cash flows from investing activities		
Fixed income securities:		
Sales	34 414	**24 088**
Maturities	9 700	**5 447**
Purchases	–53 581	**–32 393**
Net purchases/sales/maturities of short-term investments	7 305	**–590**
Equity securities:		
Sales	2 387	**2 461**
Purchases	–1 364	**–1 270**
Securities purchased/sold under agreement to resell/repurchase, net	493	**193**
Cash paid/received for acquisitions/disposals and reinsurance transactions, net	–42	**22**
Net purchases/sales/maturities of other investments	–1 481	**–321**
Net purchases/sales/maturities of investments held for unit-linked business	32	**25**
Net cash provided/used by investing activities	–2 137	**–2 338**
Cash flows from financing activities		
Policyholder account balances, unit-linked business:		
Deposits	9	**18**
Withdrawals	–64	**–66**
Issuance/repayment of long-term debt	–51	**1 449**
Issuance/repayment of short-term debt	–102	**–806**
Purchase/sale of treasury shares	–37	**–6**
Dividends paid to shareholders	–1 855	**–1 825**
Dividends paid to non-controlling interests		**–1**
Net cash provided/used by financing activities	–2 100	**–1 237**

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

USD millions	2021	2022
Total net cash provided/used	–133	**–648**
Effect of foreign currency translation	–286	**–326**
Change in cash and cash equivalents	–419	**–974**
Cash and cash equivalents as of 1 January	5 470	**5 051**
Cash and cash equivalents as of 31 December	5 051	**4 077**

Interest paid was USD 559 million and USD 565 million (thereof USD 8 million and USD 8 million for letter of credit fees) for 2021 and 2022, respectively. Tax paid was USD 258 million and USD 419 million for 2021 and 2022, 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) and comply with Swiss law. All significant intra-group transactions and balances have been eliminated on consolidation.

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.

Principles of consolidation
The Group's financial statements include the consolidated financial statements of Swiss Re Ltd and its subsidiaries. Voting entities which Swiss Re Ltd directly or indirectly controls through holding a majority of the voting rights are consolidated in the Group's accounts. Variable interest entities (VIEs) are consolidated when the Swiss Re Group is the primary beneficiary. The Group is the primary beneficiary when it has power over the activities that impact the VIE's economic performance and at the same time has the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

Companies which the Group does not control, but over which it directly or indirectly exercises significant influence, are accounted for using the equity method or the fair value option and are included in other invested assets. The Swiss Re Group's share of net profit or loss in investments accounted for under the equity method is included in net investment income. Equity and net income of these companies are adjusted as necessary to be in line with the Group's accounting policies. The results of consolidated subsidiaries and investments accounted for using the equity method are included in the financial statements for the period commencing from the date of acquisition.

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.

Foreign currency remeasurement and translation
Transactions denominated in foreign currencies are remeasured to the respective subsidiary's functional currency at average exchange rates. Monetary assets and liabilities are remeasured to the functional currency at closing exchange rates, whereas non-monetary assets and liabilities are remeasured to the functional currency at historical rates.

Remeasurement gains and losses on monetary assets and liabilities and trading securities are reported in earnings. Remeasurement gains and losses on available-for-sale securities, investments in consolidated subsidiaries and investments accounted for using the equity method are reported in shareholders' equity.

For consolidation purposes, assets and liabilities of subsidiaries with functional currencies other than US dollars are translated from the functional currency to US dollars at closing rates. Revenues and expenses are translated at average exchange rates. Translation adjustments are reported in shareholders' equity.

Valuation of financial assets
The fair value of the majority of the Group's financial instruments is based on quoted prices in active markets or observable inputs. These instruments include government and agency securities, commercial paper, most investment-grade corporate debt, most high-yield debt securities, exchange-traded derivative instruments, most mortgage- and asset-backed securities and listed equity securities. In markets with reduced or no liquidity, spreads between bid and offer prices are normally wider compared to spreads in highly liquid markets. Such market conditions affect the valuation of certain asset classes of the Group, such as some asset-backed securities as well as certain derivative structures referencing such asset classes.

The Group considers both the credit risk of its counterparties and own risk of non-performance in the valuation of derivative instruments and other over-the-counter financial assets. In determining the fair value of these financial instruments, the assessment of the Group's exposure to the credit risk of its counterparties incorporates consideration of existing collateral and netting arrangements entered into with each counterparty. The measure of the counterparty credit risk is estimated by incorporating the observable credit spreads, where available, or credit spread estimates derived based on the benchmarking techniques where market data is not available. The impact of the Group's own risk of non-performance is analysed in a manner consistent with the aforementioned approach, with consideration given to the Group's observable credit spreads. The value representing such risk is incorporated into the fair value of the financial instruments (primarily derivatives), in a liability position as of the measurement date. The change in this adjustment from period to period is reflected in realised investment gains and losses in the income statement.

For assets or derivative structures at fair value, the Group uses market prices or inputs derived from market prices. A separate internal price verification process, independent of the trading function, provides an additional control over the market prices or market inputs used to determine the fair values of such assets. Although management considers that appropriate values have been ascribed to such assets, there is always a level of uncertainty and judgement related to these valuations. Subsequent valuations could differ significantly from the results of the process described above. The Group may become aware of counterparty valuations, either directly through the exchange of information or indirectly, for example through collateral demands. Any implied differences are considered in the independent price verification process and may result in adjustments to initially indicated valuations. As of 31 December 2022, the Group had not provided any collateral on financial instruments in excess of its own market value estimates.

Investments
The Group's investments in fixed income securities are classified as available-for-sale (AFS) or trading. Fixed income securities AFS are carried at fair value, based on quoted market prices, with the difference between the applicable measure of cost and fair value being recognised in shareholders' equity. Trading fixed income securities are carried at fair value with unrealised gains and losses recognised in earnings. A trading classification is used for securities that are bought and held principally for the purpose of selling them in the near term.

For fixed income securities AFS that are other-than-temporary impaired and for which there is not an intention to sell, the impairment is separated into (i) the estimated amount relating to credit loss, and (ii) the amount relating to all other factors, including interest rates and associated foreign currency impacts. The estimated credit loss amount is recognised in earnings, with the remainder of the loss amount recognised in other comprehensive income. In cases where there is an intention or requirement to sell and the fair value is lower than cost expressed in functional currency terms, the cost of fixed income securities AFS is reduced to fair value, with a corresponding charge to realised investment losses. Subsequent recoveries are not recognised in earnings.

Equity investments are carried at fair value with unrealised gains and losses recognised in earnings, with the exception of equity method investments and investments that result in consolidation.

Interest on fixed income securities is recorded in net investment income when earned and is adjusted for the amortisation of any purchase premium or discount. Dividends on equity securities are recognised as investment income on the ex-dividend date. Realised gains and losses on sales are included in earnings and are calculated using the specific identification method.

Policy loans, mortgages and other loans are carried at amortised cost. Interest income is recognised in accordance with the effective yield method.

Investment in real estate that the Group intends to hold for the production of income is carried at depreciated cost, net of any write-downs for impairment in value. Depreciation on buildings is recognised on a straight-line basis over the estimated useful life of the asset. Land is recognised at cost and not depreciated. Impairment in value is recognised if the sum of the estimated future undiscounted cash flows from the use of the real estate is lower than its carrying value. The impairment loss is measured as the amount by which the asset's carrying amount exceeds its fair value and is recognised in realised investment losses. Depreciation and other related charges or credits are included in net investment income. Investment in real estate held for sale is carried at the lower of cost or fair value, less estimated selling costs, and is not depreciated. Reductions in the carrying value of real estate held for sale are included in realised investment losses.

Short-term investments are measured at fair value with changes in fair value recognised in net income. The Group considers highly liquid investments with a remaining maturity at the date of acquisition of one year or less, but greater than three months, to be short-term investments.

Other invested assets include affiliated companies, equity accounted companies, derivative financial instruments, collateral receivables, securities purchased under agreement to resell, deposits and time deposits, and investments without readily determinable fair value (including limited partnership investments). Investments in limited partnerships where the Group's interest equals or exceeds 3% are accounted for using the equity method. Investments in limited partnerships where the Group's interest is below 3% and equity investments in corporate entities which are not publicly traded are accounted for at estimated fair value with changes in fair value recognised in earnings.

The Group enters into securities lending arrangements under which it loans certain securities in exchange for collateral and receives securities lending fees. The Group's policy is to require collateral, consisting of cash or securities, equal to at least 102% of the carrying value of the securities loaned. In certain arrangements, the Group may accept collateral of less than 102% if the structure of the overall transaction offers an equivalent level of security. Cash received as collateral is recognised along with an obligation to return the cash. Securities received as collateral that can be sold or repledged are also recognised along with an obligation to return those securities. Securities lending fees are recognised over the term of the related loans.

Derivative financial instruments and hedge accounting
The Group uses a variety of derivative financial instruments including swaps, options, forwards and exchange-traded financial futures for the Group's trading and hedging strategy in line with the overall risk management strategy. Derivative financial instruments are primarily used as a means of managing exposure to price, foreign currency and/or interest rate risk on planned or anticipated investment purchases, existing assets or existing liabilities and also to lock in attractive investment conditions for funds which become available in the future. The Group recognises all of its derivative instruments on the balance sheet at fair value. Changes in fair value on derivatives that are not designated as hedging instruments are recorded in income.

If the derivative is designated as a hedge of the fair value of assets or liabilities, changes in the fair value of the derivative are recognised in earnings, together with changes in the fair value of the related hedged item. If the derivative is designated as a hedge of the variability in expected future cash flows related to a particular risk, changes in the fair value of the derivative are reported in other comprehensive income until the hedged item is recognised in earnings. The ineffective portion of the hedge is recognised in earnings. When hedge accounting is discontinued on a cash flow hedge, the net gain or loss remains in accumulated other comprehensive income and is reclassified to earnings in the period in which the formerly hedged transaction is reported in earnings. When the Group discontinues hedge accounting because it is no longer probable that a forecasted transaction will occur within the required time period, the derivative continues to be carried on the balance sheet at fair value, and gains and losses that were previously recorded in accumulated other comprehensive income are recognised in earnings.

The Group recognises separately derivatives that are embedded within other host instruments if the economic characteristics and risks are not clearly and closely related to the economic characteristics and risks of the host contract and if it meets the definition of a derivative if it were a free-standing contract.

Derivative financial instrument assets are generally included in other invested assets and derivative financial instrument liabilities are generally included in accrued expenses and other liabilities.

The Group also designates non-derivative and derivative monetary financial instruments as hedges of the foreign currency exposure of its net investment in certain foreign operations. From the inception of the hedging relationship, remeasurement gains and losses on the designated non-derivative and derivative monetary financial instruments and translation gains and losses on the hedged net investment are reported as translation gains and losses in shareholders' equity.

Cash and cash equivalents
Cash and cash equivalents include cash on hand, short-term deposits, certain short-term investments in money market funds and highly liquid debt instruments with a remaining maturity at the date of acquisition of three months or less.

Deferred acquisition costs
The Group incurs costs in connection with acquiring new and renewal reinsurance and insurance business. Some of these costs, which consist primarily of commissions, are deferred as they are directly related to the successful acquisition of such business.

Deferred acquisition costs for short-duration contracts are amortised in proportion to premiums earned. Deferred acquisition costs for traditional long-duration contracts are amortised over the life of underlying contracts based upon the present value of gross premiums. Deferred acquisition costs for universal-life type contracts and similar products are amortised based on the present value of estimated gross profits. Estimated gross profits are updated quarterly.

Modifications of insurance and reinsurance contracts
The Group accounts for modifications of insurance and reinsurance contracts that result in a substantially unchanged contract as a continuation of the replaced contract. The associated deferred acquisition costs and present value of future profits (PVFP) will continue to be amortised. The Group accounts for modifications of insurance and reinsurance contracts that result in a substantially changed contract as an extinguishment of the replaced contract. The associated deferred acquisition costs or PVFP are written off immediately through income and any new deferrable costs associated with the replacement contract are deferred.

Business combinations
The Group applies the acquisition method of accounting for business combinations. This method allocates the cost of the acquired entity to the assets and liabilities assumed based on their estimated fair values at the date of acquisition.

The underlying assets and liabilities acquired are subsequently accounted for according to the relevant US GAAP guidance. This includes specific requirements applicable to subsequent accounting for assets and liabilities recognised as part of the acquisition method of accounting, including present value of future profits, goodwill and other intangible assets.

Acquired present value of future profits
The acquired present value of future profits (PVFP) of business in force is recorded in connection with the acquisition of life and health business. The initial value is calculated as the difference between established reserves, which are set up in line with US GAAP accounting policies and assumptions of the Group, and their fair value at the acquisition date. The resulting PVFP, which could be positive or negative, is amortised on a constant yield basis over the expected revenue recognition period of the business acquired, generally over periods ranging up to 30 years, with the accrual of interest added to the unamortised balance at the earned rate. Amortisation and accrual of interest are recognised in acquisition costs. The earned rate corresponds to either the current earned rate or the original earned rate depending on the business written. The rate is consistently applied for the entire life of the applicable business. For universal-life and similar products, PVFP is amortised in line with estimated gross profits, which are updated quarterly. The carrying value of PVFP is reviewed periodically for indicators of impairment in value. Adjustments to PVFP reflecting impairment in value are recognised in acquisition costs during the period in which the determination of impairment is made, or in other comprehensive income for shadow loss recognition.

Goodwill
The excess of the purchase price of acquired businesses over the estimated fair value of net assets acquired is recorded as goodwill. The goodwill is tested for impairment on an annual basis as of 30 September, unless there is an event or circumstances which makes an impairment more likely than not. Adjustments to reflect impairment in value are recognised in earnings in the period in which the determination of impairment is made.

Other assets
Other assets include deferred expenses on retroactive reinsurance, prepaid reinsurance premiums, receivables related to investing activities, real estate for own use, other classes of property, plant and equipment, lease right-of-use asset, accrued income, certain intangible assets and prepaid assets.

The excess of estimated liabilities for claims and claim adjustment expenses payable over consideration received in respect of retroactive property and casualty reinsurance contracts is recorded as a deferred expense. The deferred expense on retroactive reinsurance contracts is amortised through earnings over the expected claims-paying period.

Real estate for own use as well as other classes of property, plant and equipment are carried at depreciated cost. Depreciation on buildings is recognised on a straight-line basis over the estimated useful life. Land is recognised at cost and not depreciated.

Leases
The Group recognises for finance and operating leases a liability to make lease payments (the lease liability) and a right-of-use asset representing the right to use the underlying asset for the lease term. The lease right-of-use asset is included in "other assets" and the lease liability is included in "accrued expenses and other liabilities" on the balance sheet. Lease expense for lease payments is recognised on a straight-line basis over the lease term.

Additional disclosures are provided in Note 12 "Leases".

Capitalised software costs
External direct costs of materials and services incurred to develop or obtain software for internal use, payroll and payroll-related costs for employees directly associated with software development and interest cost incurred while developing software for internal use are capitalised and amortised on a straight-line basis through earnings over the estimated useful life.

Income taxes
Deferred income tax assets and liabilities are recognised based on the difference between financial statement carrying amounts and the corresponding income tax bases of assets and liabilities using enacted income tax rates and laws. A valuation allowance is recorded against deferred tax assets when it is deemed more likely than not that some or all of the deferred tax assets may not be realised.

The Group recognises the effect of income tax positions only if sustaining those positions is more likely than not. Changes in recognition or measurement are reflected in the period in which a change in judgement occurs. Interest and penalties related to unrecognised tax benefits are recorded in income tax expense.

The Group releases stranded tax effects for unrealised gains/losses on AFS securities to earnings on a straight-line basis over the average duration of the relevant AFS portfolio as an approximation of when the individual securities within the portfolio are sold or mature. For adjustment for pension and other post-retirement benefits, stranded tax effects are released to earnings when the relevant pension plan is terminated. For foreign currency translation, stranded tax effects are released to earnings in line with the recycling of the underlying foreign currency translation amounts.

Unpaid claims and claim adjustment expenses
Liabilities for unpaid claims and claim adjustment expenses for property and casualty and for life and health insurance and reinsurance contracts are accrued when insured events occur and are based on the estimated ultimate cost of settling the claims, using reports and individual case estimates received from ceding companies. Reserves also are established for claims incurred but not reported, which are developed on the basis of past experience adjusted for current trends and other factors that modify past experience. The establishment of the appropriate level of reserves is an inherently uncertain process involving estimates and judgements made by management, and therefore there can be no assurance that ultimate claims and claim adjustment expenses will not exceed the loss reserves currently established by the Group. These estimates are regularly reviewed, and adjustments for differences between estimates and actual payments for claims and for changes in estimates are reflected in income in the period in which the estimates are changed or payments are made.

The COVID-19 pandemic has continued to add some degree of uncertainty during 2022, both in respect of estimation of claims across the insurance and reinsurance industry and assessments of the wider potential global health and economic impacts. The Group has recorded its best estimate of claims and claim adjustment expenses incurred as a result of the pandemic as of 31 December 2022, with the best estimate reflecting the Group's expectations based on current facts and circumstances.

The Group does not discount liabilities arising from prospective property and casualty insurance and reinsurance contracts, including liabilities which are discounted for US statutory reporting purposes. Liabilities arising from property and casualty insurance and reinsurance contracts acquired in a business combination are initially recognised at fair value in accordance with the acquisition method of accounting.

The Group does not discount life and health claim reserves except for disability income claims in payment and mortality claims paid out in the form of an annuity. These claims are recognised at the estimated present value of the remaining ultimate net costs of the incurred claims.

Experience features which are directly linked to a reinsurance asset or liability are classified in a manner that is consistent with the presentation of that asset or liability.

Liabilities for life and health policy benefits
Liabilities for life and health policy benefits from reinsurance business are generally calculated using the net level premium method, based on assumptions as to investment yields, mortality, morbidity, withdrawals, lapses and policyholder dividends. Assumptions are set at the time the contract is issued or, in the case of contracts acquired by purchase, at the acquisition date. The assumptions are based on current best estimates, making allowance for possible adverse deviation. Interest rate assumptions for life and health (re)insurance benefit liabilities are based on estimates of expected investment yields. Assumed mortality or morbidity rates are generally based on experience multiples applied to the actuarial select and ultimate tables based on industry experience.

Policyholder account balances
Policyholder account balances relate to universal-life-type contracts and investment contracts.

Universal-life-type contracts are long-duration insurance contracts, providing either death or annuity benefits, with terms that are not fixed and guaranteed.

Investment contracts are long-duration contracts that do not incorporate significant insurance risk, i.e. there is no mortality and morbidity risk, or the mortality and morbidity risk associated with the insurance benefit features offered in the contract is of insignificant amount or remote probability. Amounts received as payment for investment contracts are reported as policyholder account balances. Related assets are included in general account assets except for investments for unit-linked, which are presented in a separate line item on the face of the balance sheet.

Amounts assessed against policyholders for mortality, administration and surrender are reported as fee income. Amounts credited to policyholders are reported as interest credited to policyholders. Investment income and realised investment gains and losses allocable to policyholders are included in net investment income and net realised investment gains/losses except for unit-linked, which is presented in a separate line item on the face of the income statement.

In unit-linked contracts, the investment risk is borne by the policyholder. Additional disclosures are provided in Note 7 "Investments".

Funds held assets and liabilities
On the asset side, funds held by ceding companies consist mainly of amounts retained by the ceding company for business written on a funds withheld basis. In addition, the account also includes amounts arising from the application of the deposit method of accounting to ceded retrocession or reinsurance contracts.

On the liability side, funds held under reinsurance treaties consist mainly of amounts arising from the application of the deposit method of accounting to inward insurance and reinsurance contracts. In addition, the account also includes amounts retained from ceded business written on a funds withheld basis.

Funds withheld assets are assets that would normally be paid to the Group but are withheld by the cedent to reduce a potential credit risk or to retain control over investments. In case of funds withheld liabilities, it is the Group that withholds assets related to ceded business in order to reduce its credit risk or retain control over the investments.

The deposit method of accounting is applied to insurance and reinsurance contracts that do not indemnify the ceding company or the Group against loss or liability relating to insurance risk. Under the deposit method of accounting, the deposit asset or liability is initially measured based on the consideration paid or received. For contracts that transfer neither significant timing nor underwriting risk, and contracts that transfer only significant timing risk, changes in estimates of the timing or amounts of cash flows are accounted for by recalculating the effective yield. The deposit is then adjusted to the amount that would have existed had the new effective yield been applied since the inception of the contract. The revenue and expense recorded for such contracts is included in net investment income. For contracts that transfer only significant underwriting risk, once a loss is incurred, the deposit is adjusted by the present value of the incurred loss. At each subsequent balance sheet date, the portion of the deposit attributable to the incurred loss is recalculated by discounting the estimated future cash flows. The resulting changes in the carrying amount of the deposit are recognised in claims and claim adjustment expenses.

Funds withheld balances are presented together with assets and liabilities arising from the application of the deposit method because of their common deposit-type character.

Premium deficiency testing
The level of the premium deficiency test is at the segment level or separate business within Group Items. The testing is performed net of external retrocessions.

For long duration contracts, liabilities for life and health policy benefits are increased with a charge to earnings if there is a premium deficiency. A premium deficiency exists if the liability for future policy benefits calculated using best estimate cash flows, including investment income, is higher than the net GAAP liability. If a premium deficiency exists, the deferred acquisition costs for the related business segment will be expensed to the extent of the deficiency. If the deficiency is greater than the deferred acquisition costs, then an additional liability will be established for the difference. In connection with the premium deficiency testing, an analysis is performed to determine that profits will not be followed by losses. The best estimate cash flows by year along with the change in the locked in GAAP reserve are reviewed to determine that there are not any profits followed by losses. If so, an additional GAAP reserve is established by calculating the portion of future premiums required to be used as an additional reserve to offset the future losses.

For short duration contracts, a premium deficiency exists when the unearned premium plus expected investment income is less than the total of expected claim costs and claim adjustment expenses, related estimated policy maintenance costs (incl. unallocated loss adjustment expenses), related unamortised acquisition costs and expected dividends to policyholders. If a premium deficiency exists, the deferred acquisition costs for the related business segment will be expensed to the extent of the deficiency. If the deficiency is greater than the deferred acquisition cost, then a liability will be established for the difference.

Shadow adjustments
Shadow adjustments are recognised in other comprehensive income reflecting the offset of adjustments to deferred acquisition costs and PVFP, typically related to universal-life-type contracts, and policyholder liabilities. The purpose is to reflect the fact that certain amounts recorded as unrealised investment gains and losses within shareholders' equity will ultimately accrue to policyholders and not shareholders.

Shadow loss recognition testing becomes relevant in low interest rate environments. The test considers whether the hypothetical sale of AFS securities and the reinvestment of proceeds at lower yields would lead to negative operational earnings in future periods, thereby causing a loss recognition event. For shadow loss recognition testing, the Group uses current market yields to determine best estimate US GAAP reserves rather than using locked-in or current book yields. If the unlocked best estimate US GAAP reserves based on current market rates are in excess of reserves based on locked-in or current book yields, a shadow loss recognition reserve is set up. These reserves are recognised in other comprehensive income and do not impact net income. In addition, shadow loss recognition reserves can reverse up to the amount of losses recognised due to past loss events.

Premiums
Property and casualty reinsurance premiums are recorded when written and include an estimate for written premiums receivable at period end. Premiums earned are generally recognised in income over the contract period in proportion to the amount of reinsurance provided. Unearned premiums consist of the unexpired portion of reinsurance provided. Life reinsurance premiums are earned when due. Related policy benefits are recorded in relation to the associated premium or gross profits so that profits are recognised over the expected lives of the contracts.

Life and health reinsurance premiums for group coverages are generally earned over the term of the coverage. For group contracts that allow experience adjustments to premiums, such premiums are recognised as the related experience emerges.

Reinstatement premiums are due where coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. The recognition of reinstatement premiums as written depends on individual contract features. Reinstatement premiums are either recognised as written at the time a loss event occurs or in line with the recognition pattern of premiums written of the underlying contract. The accrual of reinstatement premiums is based on actuarial estimates of ultimate losses. Reinstatement premiums are generally earned in proportion to the amount of reinsurance provided.

Insurance and reinsurance ceded
The Group uses retrocession arrangements to increase its aggregate underwriting capacity, to diversify its risk and to reduce the risk of catastrophic loss on reinsurance assumed. The ceding of risks to retrocessionaires does not relieve the Group of its obligations to its ceding companies. The Group regularly evaluates the financial condition of its retrocessionaires and monitors the concentration of credit risk to minimise its exposure to financial loss from retrocessionaires' insolvency. Premiums and losses ceded under retrocession contracts are reported as reductions of premiums earned and claims and claim adjustment expenses. Amounts recoverable for ceded short- and long-duration contracts, including universal-life-type and investment contracts, are reported as assets in the accompanying consolidated balance sheet.

The Group provides reserves for uncollectible amounts on reinsurance balances ceded, based on management's assessment of the collectability of the outstanding balances.

Receivables
Premium and claims receivables which have been invoiced are accounted for at face value. Together with assets arising from the application of the deposit method of accounting that meet the definition of financing receivables they are regularly assessed for impairment. Evidence of impairment is the age of the receivable and/or any financial difficulties of the counterparty. Allowances are set up on the net balance, meaning all balances related to the same counterparty are considered. The amount of the allowance is set up in relation to the time a receivable has been due and any financial difficulties of the debtor and can be as high as the outstanding net balance.

Pensions and other post-retirement benefits
The Group accounts for its pension and other post-retirement benefit costs using the accrual method of accounting. Amounts charged to expense are based on periodic actuarial determinations.

Share-based payment transactions
As of 31 December 2022, the Group has a Leadership Performance Plan (LPP)/Leadership Share Plan (LSP), restricted shares and a Global Share Participation Plan. These plans are described in more detail in Note 16 "Share-based payments". The Group accounts for share-based payment transactions with employees using the fair value method. Under the fair value method, the fair value of the awards is recognised in earnings over the vesting period.

For share-based compensation plans which are settled in cash, compensation costs are recognised as liabilities, whereas for equity-settled plans, compensation costs are recognised as an accrual to additional paid-in capital within shareholders' equity.

Treasury shares
Treasury shares are reported at cost in shareholders' equity.

Earnings per common share
Basic earnings per common share are determined by dividing net income available to shareholders by the weighted average number of common shares entitled to dividends during the year. Diluted earnings per common share reflect the effect on earnings and average common shares outstanding associated with dilutive securities.

Subsequent events
Subsequent events for the current reporting period have been evaluated up to 15 March 2023. This is the date on which the financial statements are available to be issued.

Adoption of new accounting standards
In May 2021, the FASB issued ASU 2021-04, "Modification of equity-classified written call options", an update to Topic 260, "Earnings per share", to Topic 470-50, "Debt – Modification and Extinguishments", to Topic 718, "Compensation – Stock Compensation", and to Topic 815-40, "Derivatives and Hedging – Contract in Entity's Own Equity". The amendments in this update clarify and reduce diversity in the accounting by issuers for modifications or exchanges of freestanding equity-classified written call options that remain equity classified after modification or exchange. The Group adopted the standard on 1 January 2022. The adoption did not have an impact on the Group's financial statements.

In July 2021, the FASB issued ASU 2021-05, "Lessors – Certain Leases with Variable Lease Payments", an update to Topic 842, "Leases". The amendments in this update address stakeholders' concerns by amending the lease classification requirements for lessors to align them with practice under Topic 840. A lessor shall account for a lease with variable lease payments that do not depend on an index or a rate as an operating lease, if classifying the lease as a sales-type lease or a direct financing lease would result in the recognition of a day-one loss. The Group adopted the standard on 1 January 2022. The adoption did not have an impact on the Group's financial statements.

In November 2021, the FASB issued ASU 2021-10, "Disclosures by Business Entities about Government Assistance", an update to Topic 832, "Government Assistance". The amendments in this update require additional annual disclosures about transactions with a government that are accounted for by applying a grant or contribution accounting model. The Group adopted the standard on 1 January 2022. 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 31 December 2022, the Group applied the guidance to Topic 815 related to Group's adherence to the ISDA 2020 Fallbacks Protocol, which is a standardized approach for amending contracts in order to incorporate IBOR fallback provisions and related to changes to the critical terms of a hedging relationship due to reference rate reform 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 31 December 2022.

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 June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses", an update to Topic 326, "Financial Instruments – Credit Losses". ASU 2016-13 replaces the incurred loss impairment methodology in current US GAAP with a methodology that reflects expected credit losses. 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 recoverables. 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 will adopt ASU 2016-13 on 1 January 2023 using a modified retrospective method. The impact of the adoption of the standard is expected to be a reduction in opening retained earnings of approximately USD 0.1 billion, net of tax, primarily driven by fixed income securities available-for-sale, other loans and reinsurance recoverables.

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. Early application of the ASU is permitted. The adoption of ASU 2017-04 is not expected to have an impact on the Group's financial statements.

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 (e.g. 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 Swiss Re Ltd 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.

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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. The assignment of assets and liabilities for entities that span more than one segment is determined by considering local statutory requirements, legal and other constraints, the economic view of duration and currency requirements of the reinsurance business written and the capacity of the segments to absorb risks. 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 as both business segments belong to the Reinsurance Business Unit.

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.

Property & Casualty Reinsurance and Life & Health Reinsurance
Reinsurance consists of two segments, Property & Casualty and Life & Health. The Reinsurance Business Unit operates globally, both through brokers and directly with clients, and provides 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, Reinsurance offers insurance-linked securities and other insurance-related capital market products in both Property & Casualty and Life & Health.

Property & Casualty includes the business lines property, casualty (including motor) and specialty. 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
Group items includes iptiQ, which operates as a standalone division, with results reported within the Group items segment. Group items also includes items not allocated to the business segments, which encompass 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 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 as Group items. As of 1 January 2022, a part of Principal Investments, Admin Re US as well as certain cross-segmental loans have been reallocated from Group items to Reinsurance. Segmental comparative information for 2021 has been adjusted accordingly.

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 year ended 31 December

2021[1] USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Revenues						
Gross premiums written	23 246	16 119	7 492	747	–946	46 658
Net premiums written	22 381	14 632	5 717	490		43 220
Change in unearned premiums	–455	104	–374	–28		–753
Premiums earned	21 926	14 736	5 343	462		42 467
Fee income from policyholders		259				259
Net investment income – non-participating business	1 756	1 409	121	262	–175	3 373
Net realised investment gains/losses – non-participating business	544	338	115	–460		537
Net investment result – unit-linked business		63				63
Other revenues	20	3	12	412	–407	40
Total revenues	24 246	16 808	5 591	676	–582	46 739
Expenses						
Claims and claim adjustment expenses	–14 773		–2 374	–38	4	–17 181
Life and health benefits		–13 744	–924	–320	–4	–14 992
Return credited to policyholders		–431				–431
Acquisition costs	–5 359	–2 056	–690	–123		–8 228
Operating expenses	–1 167	–876	–851	–1 018	407	–3 505
Total expenses before interest expenses	–21 299	–17 107	–4 839	–1 499	407	–44 337
Income/loss before interest and income tax expense/benefit	2 947	–299	752	–823	–175	2 402
Interest expenses	–292	–273	–26	–155	175	–571
Income/loss before income tax expense/benefit	2 655	–572	726	–978	0	1 831
Income tax expense/benefit	–438	94	–149	99		–394
Net income/loss before attribution of non-controlling interests	2 217	–478	577	–879	0	1 437
Income/loss attributable to non-controlling interests	–1		1			
Net income/loss attributable to common shareholders	2 216	–478	578	–879	0	1 437
Claims ratio in %	67.3		61.8			66.3
Expense ratio in %	29.8		28.8			29.6
Combined ratio in %	97.1		90.6			95.9
Management expense ratio[2] in %		5.3				
Net operating margin[3] in %	12.2	–1.8	13.5			5.1

[1] Comparative information for 2021 has been revised to reflect the reallocation of part of Principal Investments, Admin Re US as well as certain cross-segmental loans from Group items to Reinsurance.
[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 interest and income tax expense/benefit" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Business segments – income statement
For the year ended 31 December

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Revenues						
Gross premiums written	23 848	15 986	8 198	868	–1 011	47 889
Net premiums written	22 826	14 476	6 124	491		43 917
Change in unearned premiums	–798	258	–642	133		–1 049
Premiums earned	22 028	14 734	5 482	624		42 868
Fee income from policyholders		250				250
Net investment income – non-participating business	1 355	1 431	223	131	–271	2 869
Net realised investment gains/losses – non-participating business	–117	187	29	–102		–3
Net investment result – unit-linked business		–43				–43
Other revenues	27	1	3	429	–403	57
Total revenues	**23 293**	**16 560**	**5 737**	**1 082**	**–674**	**45 998**
Expenses						
Claims and claim adjustment expenses	–16 344		–2 889	–38		–19 271
Life and health benefits		–12 948	–675	–434		–14 057
Return credited to policyholders		–280				–280
Acquisition costs	–5 106	–1 772	–748	–174		–7 800
Operating expenses	–1 106	–840	–793	–1 033	403	–3 369
Total expenses before interest expenses	**–22 556**	**–15 840**	**–5 105**	**–1 679**	**403**	**–44 777**
Income/loss before interest and income tax expense/benefit	**737**	**720**	**632**	**–597**	**–271**	**1 221**
Interest expenses	–372	–233	–24	–212	271	–570
Income/loss before income tax expense/benefit	**365**	**487**	**608**	**–809**	**0**	**651**
Income tax expense/benefit	–53	–71	–114	67		–171
Net income/loss before attribution of non-controlling interests	**312**	**416**	**494**	**–742**	**0**	**480**
Income/loss attributable to non-controlling interests			–8			–8
Net income/loss attributable to common shareholders	**312**	**416**	**486**	**–742**	**0**	**472**
Claims ratio in %	74.2		65.0			72.3
Expense ratio in %	28.2		28.1			28.2
Combined ratio in %	102.4		93.1			100.5
Management expense ratio[1] in %		5.1				
Net operating margin[2] in %	3.2	4.3	11.0			2.7

[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/benefit" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Business segments – balance sheet
As of 31 December

2021[1] USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Assets						
Fixed income securities	42 762	34 086	9 688	449		86 985
Equity securities	2 223	213	254	1 288		3 978
Other investments	20 734	3 658	162	2 528	–10 389	16 693
Short-term investments	4 335	2 327	1 476	324		8 462
Investments for unit-linked business		468				468
Cash and cash equivalents	1 473	2 048	858	672		5 051
Deferred acquisition costs	2 538	4 718	480	406		8 142
Acquired present value of future profits		836				836
Reinsurance recoverable	2 004	2 289	6 907	114	–4 832	6 482
Other reinsurance assets	15 423	11 963	3 120	164	–1 263	29 407
Goodwill	1 903	1 855	182	30		3 970
Other	9 254	9 243	3 142	3 906	–14 452	11 093
Total assets	102 649	73 704	26 269	9 881	–30 936	181 567
Liabilities						
Unpaid claims and claim adjustment expenses	56 883	16 152	15 660	232	–4 831	84 096
Liabilities for life and health policy benefits		20 487	798	912	–1	22 196
Policyholder account balances		5 147				5 147
Other reinsurance liabilities	16 040	1 627	5 317	424	–1 647	21 761
Short-term debt	1 034	250		642	–1 064	862
Long-term debt	3 596	11 774	499	2 347	–7 893	10 323
Other	14 493	11 012	1 141	2 358	–15 500	13 504
Total liabilities	92 046	66 449	23 415	6 915	–30 936	157 889
Shareholders' equity	10 596	7 255	2 751	2 966	0	23 568
Non-controlling interests	7		103			110
Total equity	10 603	7 255	2 854	2 966	0	23 678
Total liabilities and equity	102 649	73 704	26 269	9 881	–30 936	181 567

[1] Comparative information for 2021 has been revised to reflect the reallocation of part of Principal Investments, Admin Re US as well as certain cross-segmental loans from Group items to Reinsurance.

Business segments – balance sheet
As of 31 December

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance[1]	Corporate Solutions[1]	Group items[1]	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**

[1] Information reflects the sale of Elips Life AG and the simultaneously entered long-term reinsurance partnership. Please refer to Note 10 "Disposals" for more details.

b) Property & Casualty Reinsurance business segment – by line of business
For the year ended 31 December

2021 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	9 855	9 681	3 710		23 246
Net premiums written	9 102	9 624	3 655		22 381
Change in unearned premiums	–409	140	–186		–455
Premiums earned	8 693	9 764	3 469		21 926
Net investment income				1 756	1 756
Net realised investment gains/losses				544	544
Other revenues				20	20
Total revenues	8 693	9 764	3 469	2 320	24 246
Expenses					
Claims and claim adjustment expenses	–5 685	–7 057	–2 031		–14 773
Acquisition costs	–1 743	–2 750	–866		–5 359
Operating expenses	–589	–372	–206		–1 167
Total expenses before interest expenses	–8 017	–10 179	–3 103	0	–21 299
Income/loss before interest and income tax expense	676	–415	366	2 320	2 947
Interest expenses				–292	–292
Income/loss before income tax expense	676	–415	366	2 028	2 655
Claims ratio in %	65.4	72.3	58.5		67.3
Expense ratio in %	26.8	32.0	30.9		29.8
Combined ratio in %	92.2	104.3	89.4		97.1

Property & Casualty Reinsurance business segment – by line of business
For the year ended 31 December

2022 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	10 478	9 462	3 908		23 848
Net premiums written	9 551	9 405	3 870		22 826
Change in unearned premiums	–460	–70	–268		–798
Premiums earned	9 091	9 335	3 602		22 028
Net investment income				1 355	1 355
Net realised investment gains/losses				–117	–117
Other revenues				27	27
Total revenues	**9 091**	**9 335**	**3 602**	**1 265**	**23 293**
Expenses					
Claims and claim adjustment expenses	–6 764	–7 229	–2 351		–16 344
Acquisition costs	–1 732	–2 565	–809		–5 106
Operating expenses	–474	–436	–196		–1 106
Total expenses before interest expenses	**–8 970**	**–10 230**	**–3 356**	**0**	**–22 556**
Income/loss before interest and income tax expense	**121**	**–895**	**246**	**1 265**	**737**
Interest expenses				–372	–372
Income/loss before income tax expense	**121**	**–895**	**246**	**893**	**365**
Claims ratio in %	74.4	77.5	65.3		74.2
Expense ratio in %	24.3	32.1	27.9		28.2
Combined ratio in %	98.7	109.6	93.2		102.4

c) Life & Health Reinsurance business segment – by line of business
For the year ended 31 December

2021 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	11 348	4 771		16 119
Net premiums written	10 146	4 486		14 632
Change in unearned premiums	46	58		104
Premiums earned	10 192	4 544		14 736
Fee income from policyholders	259			259
Net investment income – non-participating business	1 186	223		1 409
Net realised investment gains/losses – non-participating business	–3		341	338
Net investment result – unit-linked business	63			63
Other revenues	2	1		3
Total revenues	11 699	4 768	341	16 808
Expenses				
Life and health benefits	–10 360	–3 384		–13 744
Return credited to policyholders	–431			–431
Acquisition costs	–1 388	–668		–2 056
Operating expenses	–572	–304		–876
Total expenses before interest expenses	–12 751	–4 356	0	–17 107
Income/loss before interest and income tax expense	–1 052	412	341	–299
Interest expenses			–273	–273
Income/loss before income tax expense	–1 052	412	68	–572
Management expense ratio[1] in %	4.9	6.4		5.3
Net operating margin[2] in %	–9.0	8.6		–1.8

[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 year ended 31 December

2022 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	11 351	4 635		15 986
Net premiums written	10 108	4 368		14 476
Change in unearned premiums	132	126		258
Premiums earned	10 240	4 494		14 734
Fee income from policyholders	250			250
Net investment income – non-participating business	1 171	260		1 431
Net realised investment gains/losses – non-participating business	58	–2	131	187
Net investment result – unit-linked business	–43			–43
Other revenues	1			1
Total revenues	**11 677**	**4 752**	**131**	**16 560**
Expenses				
Life and health benefits	–9 427	–3 521		–12 948
Return credited to policyholders	–280			–280
Acquisition costs	–1 132	–640		–1 772
Operating expenses	–553	–287		–840
Total expenses before interest expenses	**–11 392**	**–4 448**	**0**	**–15 840**
Income before interest and income tax expense	**285**	**304**	**131**	**720**
Interest expenses			–233	–233
Income/loss before income tax expense	**285**	**304**	**–102**	**487**
Management expense ratio[1] in %	4.7	6.0		5.1
Net operating margin[2] in %	2.4	6.4		4.3

[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 year ended 31 December

2021 USD millions	iptiQ	Other	Total
Revenues			
Gross premiums written	723	24	747
Net premiums written	466	24	490
Change in unearned premiums	–28		–28
Premiums earned	438	24	462
Net investment income – non-participating business	21	241	262
Net realised investment gains/losses	–4	–456	–460
Other revenues	2	410	412
Total revenues	457	219	676
Expenses			
Claims and claim adjustment expenses	–38		–38
Life and health benefits	–302	–18	–320
Acquisition costs	–105	–18	–123
Operating expenses	–290	–728	–1 018
Total expenses before interest expenses	–735	–764	–1 499
Income/loss before interest and income tax expense/benefit	–278	–545	–823
Interest expenses	–1	–154	–155
Income/loss before income tax expense/benefit	–279	–699	–978
Income tax expense/benefit	32	67	99
Net income/loss	–247	–632	–879

Group items business segment
For the year ended 31 December

2022 USD millions	iptiQ	Other	Total
Revenues			
Gross premiums written	851	17	868
Net premiums written	475	16	491
Change in unearned premiums	7	126	133
Premiums earned	482	142	624
Net investment income – non-participating business	–21	152	131
Net realised investment gains/losses	–18	–84	–102
Other revenues	29	400	429
Total revenues	**472**	**610**	**1 082**
Expenses			
Claims and claim adjustment expenses	–38		–38
Life and health benefits	–323	–111	–434
Acquisition costs	–144	–30	–174
Operating expenses	–329	–704	–1 033
Total expenses before interest expenses	**–834**	**–845**	**–1 679**
Income/loss before interest and income tax expense/benefit	**–362**	**–235**	**–597**
Interest expenses	–1	–211	–212
Income/loss before income tax expense/benefit	**–363**	**–446**	**–809**
Income tax expense/benefit	22	45	67
Net income/loss	**–341**	**–401**	**–742**

e) Net premiums earned and fee income from policyholders by geography

Net premiums earned and fee income from policyholders by region for the years ended 31 December

USD millions	2021	2022
Americas	20 984	22 151
Europe (including Middle East and Africa)	13 543	13 211
Asia-Pacific	8 199	7 756
Total	42 726	**43 118**

Net premiums earned and fee income from policyholders by country for the years ended 31 December

USD millions	2021	2022
United States	18 300	19 557
United Kingdom	3 963	3 878
Australia	2 055	1 830
China	1 847	1 619
Canada	1 509	1 517
Germany	1 450	1 349
Japan	1 288	1 160
Ireland	813	1 021
France	1 022	996
Netherlands	1 131	870
Switzerland	990	739
Other	8 358	8 582
Total	42 726	**43 118**

Net premiums earned and fee income from policyholders are allocated by country, based on the underlying contract.

3 Insurance information

Premiums earned and fees assessed against policyholders
For the years ended 31 December

2021 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Premiums earned, thereof:					
Direct			5 816	624	6 440
Reinsurance	22 057	16 192	1 021	9	39 279
Intra-group transactions (assumed and ceded)	654	9	–501	–162	0
Premiums earned before retrocession to external parties	22 711	16 201	6 336	471	45 719
Retrocession to external parties	–785	–1 465	–993	–9	–3 252
Net premiums earned	21 926	14 736	5 343	462	42 467
Fee income from policyholders, thereof:					
Direct					0
Reinsurance		261			261
Gross fee income before retrocession to external parties		261			261
Retrocession to external parties		–2			–2
Net fee income	0	259	0	0	259

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Premiums earned, thereof:					
Direct			6 224	810	7 034
Reinsurance	22 157	16 183	1 072	137	39 549
Intra-group transactions (assumed and ceded)	791		–482	–309	0
Premiums earned before retrocession to external parties	22 948	16 183	6 814	638	46 583
Retrocession to external parties	–920	–1 449	–1 332	–14	–3 715
Net premiums earned	**22 028**	**14 734**	**5 482**	**624**	**42 868**
Fee income from policyholders, thereof:					
Direct					0
Reinsurance		251			251
Gross fee income before retrocession to external parties		251			251
Retrocession to external parties		–1			–1
Net fee income	**0**	**250**	**0**	**0**	**250**

Claims and claim adjustment expenses
For the year ended 31 December

2021 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Claims paid, thereof:					
Gross claims paid to external parties	−11 818	−14 235	−3 751	−500	−30 304
Intra-group transactions (assumed and ceded)	−561	−75	534	102	0
Claims before receivables from retrocession to external parties	−12 379	−14 310	−3 217	−398	−30 304
Retrocession to external parties	282	1 493	518	2	2 295
Net claims paid	−12 097	−12 817	−2 699	−396	−28 009
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:					
Gross – with external parties	−2 903	−1 070	−696	7	−4 662
Intra-group transactions (assumed and ceded)	166	70	−265	29	0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	−2 737	−1 000	−961	36	−4 662
Retrocession to external parties	61	73	362	2	498
Net unpaid claims and claim adjustment expenses; life and health benefits	−2 676	−927	−599	38	−4 164
Claims and claim adjustment expenses; life and health benefits	−14 773	−13 744	−3 298	−358	−32 173

Acquisition costs
For the year ended 31 December

2021 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Acquisition costs, thereof:					
Gross acquisition costs with external parties	−5 374	−2 332	−923	−154	−8 783
Intra-group transactions (assumed and ceded)	−112	−4	87	29	0
Acquisition costs before impact of retrocession to external parties	−5 486	−2 336	−836	−125	−8 783
Retrocession to external parties	127	280	146	2	555
Net acquisition costs	−5 359	−2 056	−690	−123	−8 228

Claims and claim adjustment expenses
For the year ended 31 December

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Claims paid, thereof:					
Gross claims paid to external parties	−12 949	−14 212	−4 286	−480	−31 927
Intra-group transactions (assumed and ceded)	−744	−8	616	136	0
Claims before receivables from retrocession to external parties	−13 693	−14 220	−3 670	−344	−31 927
Retrocession to external parties	407	1 330	736	8	2 481
Net claims paid	**−13 286**	**−12 890**	**−2 934**	**−336**	**−29 446**
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:					
Gross – with external parties	−3 388	−85	−305	−262	−4 040
Intra-group transactions (assumed and ceded)	292	8	−428	128	0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	−3 096	−77	−733	−134	−4 040
Retrocession to external parties	38	19	103	−2	158
Net unpaid claims and claim adjustment expenses; life and health benefits	**−3 058**	**−58**	**−630**	**−136**	**−3 882**
Claims and claim adjustment expenses; life and health benefits	**−16 344**	**−12 948**	**−3 564**	**−472**	**−33 328**

Acquisition costs
For the year ended 31 December

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Acquisition costs, thereof:					
Gross acquisition costs with external parties	−5 106	−2 075	−1 038	−218	−8 437
Intra-group transactions (assumed and ceded)	−125	−2	87	40	0
Acquisition costs before impact of retrocession to external parties	−5 231	−2 077	−951	−178	−8 437
Retrocession to external parties	125	305	203	4	637
Net acquisition costs	**−5 106**	**−1 772**	**−748**	**−174**	**−7 800**

Reinsurance recoverable on unpaid claims and policy benefits
As of 31 December 2021 and 2022, the Group had a reinsurance recoverable of USD 6 482 million and USD 6 507 million, respectively. The concentration of credit risk is regularly monitored and evaluated. The reinsurance programme with Berkshire Hathaway and subsidiaries accounted for 26% and 24% of the Group's reinsurance recoverable as of year-end 2021 and 2022, respectively.

Reinsurance receivables
Reinsurance receivables as of 31 December were as follows:

USD millions	2021	**2022**
Premium receivables invoiced	4 835	4 717
Receivables invoiced from ceded re/insurance business	392	517
Assets arising from the application of the deposit method of accounting and meeting the definition of financing receivables	640	614
Recognised allowance	–80	–71

4 Premiums written

For the years ended 31 December

2021 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Gross premiums written, thereof:						
Direct			6 321	738		7 059
Reinsurance	22 424	16 110	1 056	9		39 599
Intra-group transactions (assumed)	822	9	115		–946	0
Gross premiums written	23 246	16 119	7 492	747	–946	46 658
Intra-group transactions (ceded)	–115		–585	–246	946	0
Gross premiums written before retrocession to external parties	23 131	16 119	6 907	501		46 658
Retrocession to external parties	–750	–1 487	–1 190	–11		–3 438
Net premiums written	22 381	14 632	5 717	490	0	43 220

2022 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Consolidation	Total
Gross premiums written, thereof:						
Direct			6 994	858		7 852
Reinsurance	22 922	15 986	1 119	10		40 037
Intra-group transactions (assumed)	926		85		–1 011	0
Gross premiums written	23 848	15 986	8 198	868	–1 011	47 889
Intra-group transactions (ceded)	–85		–564	–362	1 011	0
Gross premiums written before retrocession to external parties	23 763	15 986	7 634	506		47 889
Retrocession to external parties	–937	–1 510	–1 510	–15		–3 972
Net premiums written	**22 826**	**14 476**	**6 124**	**491**	**0**	**43 917**

5 Unpaid claims and claim adjustment expenses

A reconciliation of the opening and closing reserve balances for unpaid claims and claim adjustment expenses for the years ended 31 December is presented as follows:

USD millions	2021	2022
Balance as of 1 January	81 258	84 096
Reinsurance recoverable	−3 636	−3 975
Deferred expense on retroactive reinsurance	−191	−165
Net balance as of 1 January	77 431	**79 956**
Incurred related to:		
Current year[1]	32 416	32 255
Prior year[1]	−487	675
Amortisation of deferred expense on retroactive reinsurance and impact of commutations	8	9
Total incurred	31 937	**32 939**
Paid related to:		
Current year[1]	−9 718	−8 798
Prior year[1]	−18 291	−20 648
Total paid	−28 009	**−29 446**
Foreign exchange	−1 686	−2 731
Effect of acquisitions, disposals, new retroactive reinsurance and other items	283	355
Net balance as of period end	79 956	**81 073**
Reinsurance recoverable	3 975	4 224
Deferred expense on retroactive reinsurance	165	121
Balance as of period end	84 096	**85 418**

[1] The Group has revised the methodology used to estimate the current/prior year split of incurred and paid claims for a part of the individual mortality business in the US. The revision had no impact on net income or shareholders' equity. The comparatives have been adjusted accordingly.

Prior-year development

Non-life claims development on prior years in the year ended 31 December 2022 is mainly driven by increasing reserves to allow for heightened inflation across all the regions. Excluding this inflation adjustment, there is favourable development in property and specialty, partially offset by adverse development from casualty. The adverse movement in casualty is mainly from liability and motor, partly offset by favourable development in workers' compensation. Development in property is principally due to lower-than-expected claims activity in all regions. Specialty was mainly impacted by favourable development in engineering and marine partly offset by adverse experience in aviation.

For life and health lines of business, development on prior years' unpaid claims in the year ended 31 December 2022 is unfavourable. There is unfavourable development in the US, Latin America, Australia & New Zealand, and Asia driven by adverse experience and strengthening of claim reserves, partially offset by favourable development in Continental Europe and the UK. 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 years ended 31 December is shown below[1]:

USD millions	2021	**2022**
Line of business:		
Property	–918	–468
Casualty	473	810
Specialty	–255	–13
Life and health[2]	213	346
Total	–487	**675**

[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.
[2] The Group has revised the methodology used to estimate the current/prior year split of incurred and paid claims for a part of the individual mortality business in the US. The revision had no impact on net income or shareholders' equity. The comparatives have been adjusted accordingly.

US asbestos and environmental claims exposure

The Group's obligation for claims payments and claims settlement charges also includes obligations for long-latent injury claims arising out of policies written prior to 1986, in particular in the area of US asbestos and environmental liability.

At the end of 2022, the Group carried net reserves for US asbestos and environmental liabilities equal to USD 1 285 million. During 2022, the Group incurred net gains of USD 21 million and net paid losses of USD 124 million in relation to these liabilities. These amounts include ULAE.

Estimating ultimate asbestos and environmental liabilities is particularly complex for a number of reasons relating in part to the long period between exposure and manifestation of claims, and in part to other factors, which include risks and lack of predictability inherent in complex litigation, changes in projected costs to resolve, and in the projected number of, asbestos and environmental claims, the effect of bankruptcy protection, insolvencies, and changes in the legal, legislative and regulatory environment. As a result, the Group believes that projection of exposures for asbestos and environmental claims is subject to far less predictability relative to non-environmental and non-asbestos exposures. Management believes that its reserves for asbestos and environmental claims are appropriately established based upon known facts and the current state of the law. However, reserves are subject to revision as new information becomes available and as claims develop. Additional liabilities may arise for amounts in excess of reserves, and the Group's estimate of claims and claim adjustment expenses may change. Any such additional liabilities or increases in estimates cannot be reasonably estimated in advance but could result in charges that could be material to operating results.

Short duration contract unpaid claims and claim adjustment expenses

Basis of presentation for claims development information

This section of the note provides claims development information and information on reserves for claims relating to insured events that have been incurred but not yet reported ("IBNR").

Claims development information and IBNR are presented on an accident year basis and by line of business for individually significant categories. Additional aggregation or disaggregation is provided where appropriate, necessary and practicable ("disaggregation categories"). For instance, Reinsurance liability and motor lines of business are further disaggregated into proportional and non-proportional treaty types to provide more specific information on claims development. Amounts shown in the claims development tables are on a nominal basis, including cases where the Group discounts claims liabilities for measurement under US GAAP, and are net of external retrocession and retrocession between business segments to the extent that a retrocession programme can be allocated to a disaggregation category. Ceded retroactive reinsurance is not included in the claims development table if it cannot be allocated on a reasonable basis to the disaggregation categories used to present claims development information. Loss portfolio transfers are presented prospectively as reliable historical claims information is not always obtainable, or the data is incomplete and of insufficient quality.

In the Property & Casualty Reinsurance segment as well as for the non-life business in the Corporate Solutions segment, all contracts that transfer significant insurance risk are included in scope to the extent they can be allocated to a disaggregation category. For many reinsurance contracts, proportional contracts in particular, ceding companies do not report losses by accident year. In these cases, the Group has allocated reported losses by underwriting year to accident year to produce the accident year tables. Similarly, IBNR is calculated on an underwriting year basis and then the liabilities are allocated to accident year.

Life & Health contracts that are not expected to remain in force for an extended period are classified as short duration contracts. These provide insurance protection for a fixed short duration and their provisions may be subject to changes at the end of contract period, such as adjustments to the premium charged or the coverage provided. Examples of short duration contracts in the Life & Health Reinsurance segment include group life business, certain types of disability and long-term care contracts, group accident, and health coverage including critical illness and medical expenses. The Group provides claims development information for Life & Health Reinsurance where reported accident year information is available and there is potential for claims development. This primarily applies to the group disability business in Australia, Continental Europe and the UK. This business is generally considered to have relatively higher claims estimation uncertainty than other life and health lines such as group life, due to longer claims development periods.

The Group provides no claims development information for the Group items segment as its short duration reserves are not material. This is also the case for Life & Health business in the Corporate Solutions segment, where short duration contracts mainly include medical expenses coverage business.

For Property & Casualty Reinsurance, Life & Health Reinsurance and Corporate Solutions, the Group discloses data for ten accident years and reporting periods.

The Corporate Solutions business segment was created in 2012. Corporate Solutions related business written in Property & Casualty Reinsurance prior to 2012 is included in the net claims development information reported by this segment. All but an immaterial portion of claims arising from accident years prior to 2012 relate to accident years which are over ten years ago and therefore out of the required range of disclosure.

The current reporting period estimate of net claims liabilities for accident years older than the number of years shown in the claims development tables is presented as a total after disclosure of cumulative paid claims.

The information presented in claims development tables is presented at current balance sheet foreign exchange rates as of the date of these financial statements to permit an analysis of claims development excluding the impact of foreign exchange movements.

Some of the information provided in the following tables is Required Supplementary Information (RSI) under US GAAP and does not form part of these consolidated audited financial statements. Claims development information for all periods except the current reporting period and any information derived from it – including average annual percentage payout of claims incurred – is considered RSI and is identified as RSI in the tables presented.

Methodology for determining the presented amounts of liabilities for unpaid claims
The liability for unpaid claims and claim adjustment expenses is based on an estimate of the ultimate cost of settling the claims based on both information reported to us by ceding companies and internal estimates.

Non-life re/insurance contracts
The Group develops and recognises its own estimate of IBNR claims, which includes circumstances in which cedents have not reported any claims to the Group or where the Group's estimate of reserves needed to cover reported claims differs from the amounts reported by cedents. For reinsurance business, case reserves and estimated IBNR are reported by cedents and this IBNR is presented together with the Group's own estimate as IBNR in the claims development tables. For insurance business, reserving is performed similarly, except that estimates for case reserves and IBNR are performed by the Group.

Reserving is done on portfolio or contract level depending on the features of the contract. For business reviewed on a portfolio level, the expected ultimate losses are set for most lines and types of business based on analysis performed using standard actuarial techniques. In general, contracts are aggregated into portfolios by combining contracts with similar features, and ultimate losses are derived using a blend of initial costing loss ratio and actual reported experience, with more weighting given to experience over time.

The initial reserving estimate uses a loss ratio projection method, where the projected loss ratio is generally the costing loss ratio, reflecting the underwriter's view of the risk. In the case of new information regarding loss trends, rate changes or a different underwriter's estimate, the projected loss ratio can be adjusted if approved by the Regional Reserving Committee. As experience develops, the most common standard reserving methods used are successively the Bornhuetter-Ferguson, Benktander and Chain Ladder methods. The Bornhuetter-Ferguson method assumes that the future claims experience is in line with the one anticipated by the costing loss ratio, used as an a priori loss ratio, and not based on claims experience. The Benktander method is a weighted average of the Bornhuetter-Ferguson and Chain Ladder methods, where the weighted average is linked to the reported development pattern. In other terms, this method mainly follows the Bornhuetter-Ferguson method in the early stages and the Chain Ladder later on, progressively giving more weight to the experience. The Chain Ladder method assumes past trends will be repeated and extrapolates the current position to ultimate using historical development trends.

In most cases, these standard actuarial techniques encompass a number of loss development factor techniques applied to claim tables of paid and reported losses. Other actuarial techniques may be applicable to specific categories, such as an analysis of frequency and severity. Life contingency techniques for projecting regular payments related to bodily injury claims are applied to motor proportional, motor non-proportional, liability proportional, liability non-proportional, accident and health, where the information is available. In some cases, techniques specific to the projection of future payments for specific risks such as asbestos or pollution claims are applied to both proportional and non-proportional liability claims, also in Corporate Solutions (see also separate section "US asbestos and environmental claims exposure" on page 231). Reserving for non-traditional business is carried out on a deal-by-deal basis according to each deal's specifications. For large events, a separate process takes into consideration the relevant expertise from underwriting and claims functions in estimating the ultimate loss.

Contract-level reserving is based on standard actuarial techniques but requires more detailed contract, pricing, claim and exposure information than required for the business reviewed on a portfolio level.

Life and health re/insurance contracts
For the Life & Health business, liability for unpaid claims includes case reserves, IBNR, and provisions for disability income claims-in-payment. Estimates for case reserves allow for expected rates of decline for the not yet settled claims. IBNR claim reserves are calculated using generally accepted actuarial reserving techniques, such as Chain Ladder and Bornhuetter-Ferguson approaches, and assumptions as to the claims reporting patterns, initial expected ultimate claims, and weighting given to historical experience. Liability for disability income claims-in-payment is determined by calculating expected future claim payments using the assumed rate of termination of claims due to death or recovery.

Claims frequency information
Claims frequency information is not available for the disaggregation categories of Property & Casualty Reinsurance, as cedents do not report claims frequency information to the Group for most of the assumed reinsurance contract types.

Life & Health Reinsurance reports claims frequency information based on individual incidence. The number of reported claims is the actual number of claims booked. For disability business, claims with multiple payments in a year are counted as one claim. Claims that are reported but not recognised are included in the claim count. Claims frequency information is not available for the group disability business in Continental Europe as reliable historical claims frequency information is not obtainable.

For Corporate Solutions, claims frequency is displayed for direct business only, as individual claims information is generally not available for assumed and ceded business. Claims are counted individually per contract to produce the claims frequency table. For some direct business, summary reports are received, and multiple claims are booked under a single claim code; this is usually done at a programme, policy year, state, country and/or line of business level of detail. This approach may be applied to business which has a high volume of claim counts, but with only minor claims dollars associated with each claim.

Property & Casualty Reinsurance – Property

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	*2 994*	*3 004*	*2 837*	*2 756*	*2 733*	*2 718*	*2 713*	*2 706*	*2 723*	2 724	0
2014		*2 605*	*2 443*	*2 269*	*2 237*	*2 233*	*2 220*	*2 232*	*2 219*	2 220	–1
2015			*2 717*	*2 649*	*2 480*	*2 450*	*2 410*	*2 393*	*2 401*	2 400	–3
2016				*3 732*	*3 477*	*3 191*	*3 182*	*3 157*	*3 180*	3 190	3
2017					*5 886*	*5 774*	*5 539*	*5 510*	*5 488*	5 495	27
2018						*4 313*	*4 682*	*4 448*	*4 374*	4 358	46
2019							*4 783*	*4 735*	*4 563*	4 537	58
2020								*7 010*	*6 695*	6 574	862
2021	*RSI* [1]								*5 804*	5 714	945
2022										6 877	3 944
Total										**44 089**	**5 881**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	*528*	*1 909*	*2 391*	*2 576*	*2 633*	*2 654*	*2 668*	*2 681*	*2 693*	2 697
2014		*449*	*1 621*	*1 980*	*2 101*	*2 143*	*2 157*	*2 176*	*2 179*	2 185
2015			*457*	*1 585*	*2 076*	*2 234*	*2 309*	*2 331*	*2 350*	2 354
2016				*625*	*2 122*	*2 724*	*2 923*	*3 005*	*3 061*	3 078
2017					*961*	*3 578*	*4 622*	*4 950*	*5 102*	5 204
2018						*607*	*3 134*	*3 665*	*3 806*	3 919
2019							*891*	*2 981*	*3 656*	4 002
2020								*1 269*	*3 665*	4 684
2021	*RSI* [1]								*1 104*	3 145
2022										1 245
Total										**32 513**
All liabilities before 2013										228
Liabilities for claims and claim adjustment expenses, net of reinsurance										**11 804**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Property (RSI[1])	*18.6%*	*46.8%*	*16.8%*	*6.0%*	*2.5%*	*1.2%*	*0.7%*	*0.3%*	*0.4%*	*0.1%*

[1] Unaudited

The liability for unpaid claims and claim adjustment expenses for property in Property & Casualty Reinsurance shows positive development on most recent accident years. The 2017 - 2022 accident year claims incurred are higher due to natural catastrophes and 2020 was impacted by COVID-19. The reporting year includes inflation increases where appropriate.

Property & Casualty Reinsurance – Liability, proportional

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	720	743	751	745	750	741	739	742	750	750	59
2014		985	975	988	977	966	1 000	1 008	1 023	1 036	113
2015			1 251	1 299	1 391	1 462	1 535	1 521	1 554	1 570	172
2016				1 691	1 698	1 696	1 797	1 848	1 886	1 942	383
2017					1 946	2 053	2 193	2 373	2 433	2 513	570
2018						1 881	2 057	2 202	2 306	2 483	788
2019							2 627	2 978	3 050	3 213	1 375
2020								2 825	2 974	2 989	1 692
2021	RSI [1]								2 609	2 619	2 043
2022										2 219	2 031
Total										**21 334**	**9 226**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	15	125	230	344	426	501	554	585	607	631
2014		24	155	288	426	561	655	736	795	835
2015			35	207	421	648	898	1 076	1 151	1 247
2016				47	103	395	660	894	1 074	1 251
2017					50	249	537	995	1 239	1 510
2018						52	306	568	844	1 201
2019							83	396	719	1 184
2020								112	328	701
2021	RSI [1]								84	286
2022										82
Total										**8 928**
All liabilities before 2013										983
Liabilities for claims and claim adjustment expenses, net of reinsurance										**13 389**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Liability, proportional (RSI[1])	2.6%	9.3%	12.5%	14.3%	12.7%	10.1%	7.2%	5.3%	3.4%	3.2%

[1] Unaudited

The increase in the incurred losses for accident years 2013 to 2021 is driven by volume increases of business being written. The increases in the incurred losses across accident years in reporting year 2022 are driven by US business and inflation increases where appropriate.

Property & Casualty Reinsurance – Liability, non-proportional

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	thereof IBNR
2013	400	382	347	293	268	248	249	244	239	231	33
2014		426	430	399	357	329	348	348	336	332	64
2015			1 674	1 711	1 683	1 700	1 724	1 702	1 510	1 512	91
2016				574	555	581	627	679	687	716	126
2017					482	500	581	631	728	770	161
2018						441	445	465	444	497	168
2019							2 393	2 369	2 340	2 418	421
2020								818	796	774	569
2021	RSI [1]								583	671	509
2022										572	528
Total										**8 493**	**2 670**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
2013	–2	11	36	59	82	107	131	142	160	168
2014		–2	8	39	70	98	139	164	186	206
2015			0	85	185	308	452	549	612	684
2016				13	201	227	279	339	385	451
2017					–2	18	47	122	216	328
2018						–1	21	71	124	189
2019							209	492	662	905
2020								10	28	67
2021	RSI [1]								4	57
2022										0
Total										**3 055**
All liabilities before 2013										3 415
Liabilities for claims and claim adjustment expenses, net of reinsurance										**8 853**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Liability, non-proportional (RSI[1])	1.0%	7.7%	7.0%	9.3%	10.3%	10.1%	7.8%	5.4%	6.9%	3.5%

[1] Unaudited

The increase in incurred losses for accident year 2015 compared to other years is due to an increase in volume of business written in that year. Accident year 2019 includes an Adverse Development Cover and a Loss Portfolio Transfer written with Corporate Solutions. Liabilities before 2013 include reserves for historic US Asbestos and Environmental losses. The increases in the incurred losses across accident years in reporting year 2022 are driven by inflation increases where appropriate.

Property & Casualty Reinsurance – Accident & Health

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	337	345	332	322	315	313	308	296	292	291	23
2014		296	328	321	310	299	298	283	281	283	38
2015			425	422	401	391	382	363	358	354	33
2016				583	617	613	578	573	554	548	92
2017					726	760	722	713	693	687	122
2018						717	804	800	772	766	95
2019							793	784	771	746	108
2020								882	874	836	150
2021	RSI [1]								797	775	225
2022										938	516
Total										**6 224**	**1 402**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	53	135	175	198	211	219	225	230	235	237
2014		30	99	140	167	185	200	207	212	216
2015			59	131	183	215	234	247	258	264
2016				71	172	264	319	349	366	382
2017					94	229	329	387	422	452
2018						96	308	448	524	566
2019							110	323	450	525
2020								116	362	482
2021	RSI [1]								128	341
2022										121
Total										**3 586**
All liabilities before 2013										2 428
Liabilities for claims and claim adjustment expenses, net of reinsurance										**5 066**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Accident & Health (RSI[1])	14.3%	24.9%	15.5%	9.3%	5.4%	3.8%	2.6%	1.7%	1.6%	0.7%

[1] Unaudited

The increase in incurred losses from accident year 2015 onwards is due to an increase in the volume of workers' compensation written on a proportional basis. The 2012 and prior accident years include the run-off of business written by entities acquired as part of the acquisition of General Electric Insurance Solutions during 2006. This business, which generally had a longer payment pattern, was not renewed. The reporting year 2022 has been adjusted for inflation increases where appropriate.

Property & Casualty Reinsurance – Motor, proportional

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	*1 500*	*1 477*	*1 482*	*1 457*	*1 451*	*1 446*	*1 446*	*1 447*	*1 448*	1 445	4
2014		*1 945*	*1 910*	*1 909*	*1 892*	*1 882*	*1 880*	*1 878*	*1 879*	1 880	−1
2015			*1 862*	*1 854*	*1 857*	*1 860*	*1 860*	*1 866*	*1 870*	1 870	15
2016				*2 384*	*2 498*	*2 543*	*2 545*	*2 549*	*2 559*	2 564	17
2017					*2 294*	*2 311*	*2 297*	*2 307*	*2 316*	2 328	46
2018						*1 978*	*2 011*	*1 988*	*1 983*	1 992	75
2019							*1 974*	*1 950*	*1 980*	1 984	145
2020								*1 804*	*1 851*	1 864	256
2021	*RSI* [1]								*1 858*	1 964	434
2022										1 891	939
Total										**19 782**	**1 930**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	*559*	*1 132*	*1 307*	*1 352*	*1 381*	*1 396*	*1 405*	*1 413*	*1 418*	1 422
2014		*728*	*1 436*	*1 674*	*1 749*	*1 783*	*1 803*	*1 814*	*1 820*	1 823
2015			*777*	*1 393*	*1 627*	*1 726*	*1 769*	*1 793*	*1 808*	1 816
2016				*789*	*1 745*	*2 080*	*2 255*	*2 355*	*2 418*	2 454
2017					*731*	*1 463*	*1 787*	*1 956*	*2 069*	2 144
2018						*599*	*1 287*	*1 525*	*1 665*	1 764
2019							*638*	*1 246*	*1 491*	1 638
2020								*593*	*1 140*	1 379
2021	*RSI* [1]								*630*	1 233
2022										670
Total										**16 343**
All liabilities before 2013										287
Liabilities for claims and claim adjustment expenses, net of reinsurance										**3 726**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Motor, proportional (RSI[1])	*34.3%*	*33.8%*	*12.7%*	*5.8%*	*3.3%*	*1.8%*	*0.9%*	*0.4%*	*0.3%*	*0.3%*

[1] Unaudited

The increase in the incurred losses from accident years 2013 to 2016 is driven by new business volume across all regions. Proportional motor business includes both longer-tailed liability business and shorter-tailed hull business. The increases in the incurred losses in accident year 2021 in reporting year 2022 are driven by US business and inflation increases where appropriate.

Property & Casualty Reinsurance – Motor, non-proportional

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	414	435	438	423	410	415	414	420	421	424	58
2014		392	424	420	418	412	393	390	385	393	49
2015			374	395	429	427	439	438	436	445	64
2016				452	563	529	524	513	498	513	85
2017					556	584	574	583	576	593	115
2018						470	508	515	506	536	119
2019							1 098	1 110	1 095	1 096	161
2020								496	501	513	255
2021	RSI [1]								518	544	313
2022										558	429
Total										**5 615**	**1 648**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	6	81	143	188	213	239	255	269	275	281
2014		4	58	102	141	183	211	230	243	254
2015			-1	33	90	155	200	228	258	280
2016				8	63	124	177	236	266	293
2017					8	58	125	199	236	286
2018						4	35	95	141	187
2019							83	274	444	566
2020								3	41	81
2021	RSI [1]								9	66
2022										2
Total										**2 296**
All liabilities before 2013										2 657
Liabilities for claims and claim adjustment expenses, net of reinsurance										**5 976**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Motor, non-proportional (RSI[1])	1.6%	11.0%	12.0%	11.1%	8.8%	6.8%	5.2%	3.9%	2.1%	1.4%

[1] Unaudited

The increase in incurred losses for accident year 2019 compared to other years is due to an increase in volume of business. Claims development in non-proportional motor business is considered long-tailed as it is dominated by liability exposures leading to bodily injury claims which pay out for the lifetime of the claimant. The increases in the incurred losses across accident years in reporting year 2022 are driven by inflation increases where appropriate.

Property & Casualty Reinsurance – Specialty

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year										
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**
2013	*1 046*	*974*	*937*	*903*	*894*	*872*	*860*	*864*	*863*	863	11
2014		*1 062*	*1 049*	*954*	*929*	*915*	*919*	*901*	*892*	903	14
2015			*1 200*	*1 175*	*1 159*	*1 150*	*1 148*	*1 169*	*1 170*	1 181	24
2016				*1 243*	*1 230*	*1 184*	*1 186*	*1 171*	*1 161*	1 178	42
2017					*1 573*	*1 491*	*1 362*	*1 330*	*1 345*	1 360	67
2018						*1 592*	*1 680*	*1 646*	*1 560*	1 605	100
2019							*1 761*	*1 930*	*2 037*	2 144	292
2020								*1 909*	*1 945*	1 868	463
2021	*RSI* [1]								*1 837*	1 821	825
2022										2 238	1 688
Total										**15 161**	**3 526**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	*138*	*396*	*572*	*678*	*730*	*766*	*788*	*801*	*806*	812
2014		*165*	*389*	*561*	*656*	*712*	*749*	*771*	*780*	794
2015			*129*	*373*	*668*	*825*	*922*	*975*	*1 004*	1 029
2016				*137*	*460*	*698*	*861*	*947*	*992*	1 027
2017					*177*	*564*	*838*	*998*	*1 069*	1 127
2018						*178*	*623*	*926*	*1 077*	1 192
2019							*271*	*705*	*1 046*	1 293
2020								*306*	*707*	1 003
2021	*RSI* [1]								*205*	524
2022										191
Total										**8 992**
All liabilities before 2013										532
Liabilities for claims and claim adjustment expenses, net of reinsurance										**6 701**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Specialty (RSI[1])	*13.0%*	*24.2%*	*19.4%*	*11.8%*	*6.7%*	*4.2%*	*2.6%*	*1.5%*	*1.1%*	*0.7%*

[1] Unaudited

This category contains several individual large losses on marine, aviation and space lines. From 2017 to 2022 accident years, claims incurred is higher due to natural catastrophes. The increases in the incurred losses across accident years in reporting year 2022 are driven by inflation increases where appropriate.

Corporate Solutions

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year											
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**	**Cumulative number of reported claims (in nominals)**
2013	*1 583*	*1 562*	*1 493*	*1 408*	*1 406*	*1 396*	*1 369*	*1 382*	*1 409*	1 407	56	26 646
2014		*1 809*	*1 751*	*1 681*	*1 686*	*1 658*	*1 587*	*1 567*	*1 572*	1 557	104	21 912
2015			*1 865*	*2 035*	*2 100*	*2 071*	*1 888*	*1 852*	*1 884*	1 858	98	18 989
2016				*1 985*	*2 071*	*2 111*	*2 099*	*2 093*	*2 101*	2 130	172	18 332
2017					*2 981*	*3 207*	*2 958*	*2 980*	*2 943*	2 927	193	21 314
2018						*2 652*	*2 567*	*2 600*	*2 573*	2 601	294	27 044
2019							*2 746*	*2 593*	*2 579*	2 598	365	22 750
2020								*3 307*	*2 796*	2 708	622	18 106
2021	*RSI* [1]								*2 576*	2 473	610	14 369
2022										2 838	1 455	10 232
Total										**23 097**	**3 969**	**199 694**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	*270*	*663*	*928*	*1 082*	*1 150*	*1 225*	*1 272*	*1 299*	*1 317*	1 321
2014		*268*	*817*	*1 104*	*1 245*	*1 335*	*1 432*	*1 451*	*1 481*	1 497
2015			*348*	*894*	*1 285*	*1 482*	*1 616*	*1 704*	*1 726*	1 734
2016				*366*	*1 123*	*1 371*	*1 636*	*1 709*	*1 819*	2 031
2017					*378*	*1 491*	*2 093*	*2 346*	*2 523*	2 604
2018						*409*	*1 398*	*1 866*	*2 056*	2 322
2019							*518*	*1 208*	*1 479*	1 698
2020								*568*	*1 244*	1 595
2021	*RSI* [1]								*325*	1 042
2022										362
Total										**16 206**
All liabilities before 2013										455
Liabilities for claims and claim adjustment expenses, net of reinsurance										**7 346**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Corporate Solutions (RSI[1])	*16.8%*	*31.6%*	*16.5%*	*9.6%*	*6.3%*	*4.8%*	*3.9%*	*1.4%*	*1.2%*	*0.3%*

[1] Unaudited

Reserves on the US liability line of business on accident years 2012-2019 were reduced by a Loss Portfolio Transfer to P&C Reinsurance of USD 1.2 billion in the financial year 2019. In addition, the impact of unfavourable development across all lines of business for accident years 2012-2018 was reduced by recoveries under an Adverse Development Cover with P&C Reinsurance in place since the second half of the financial year 2019. For the financial year 2022, there were movements under both the Loss Portfolio Transfer and the Adverse Development Cover mainly in casualty and other specialty lines of business.

P&C Reinsurance reports both the Adverse Development Cover and the Loss Portfolio Transfer under accident year 2019 (see ''Property & Casualty Reinsurance – Liability, non-proportional'' on page 236). There were immaterial movements under both the Loss Portfolio Transfer and the Adverse Development Cover.

Life & Health Reinsurance, long tail

Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year											
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**	**thereof IBNR**	**Cumulative number of reported claims (in nominals)**
2013	450	442	441	407	406	408	430	430	423	428	11	13 519
2014		441	402	383	384	406	428	435	432	438	14	15 387
2015			377	407	394	395	423	432	425	432	13	17 855
2016				395	409	396	424	438	429	433	41	15 664
2017					403	409	429	450	429	429	46	18 793
2018						374	405	419	414	408	76	19 049
2019							348	425	377	369	92	16 723
2020								162	130	136	39	8 184
2021	RSI [1]								177	184	99	8 343
2022										1 302	629	2 036
Total										**4 559**	**1 060**	**135 553**

[1] Unaudited

Cumulative claims paid and allocated claim adjustment expenses, net of reinsurance

USD millions	Reporting year									
Accident year	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
2013	34	113	172	228	265	290	310	329	343	355
2014		30	100	183	240	274	300	324	343	356
2015			33	98	174	220	255	288	310	327
2016				12	80	147	196	236	264	285
2017					11	69	150	216	254	281
2018						11	69	150	198	226
2019							11	73	138	178
2020								4	30	68
2021	RSI [1]								4	35
2022										4
Total										**2 115**
All liabilities before 2013										321
Liabilities for claims and claim adjustment expenses, net of reinsurance										**2 765**

[1] Unaudited

Average annual percentage payout of incurred claims by age, net of reinsurance

Years	1	2	3	4	5	6	7	8	9	10
Life & Health Reinsurance, long tail (RSI[1])	3.9%	16.2%	18.8%	12.3%	8.2%	6.4%	5.0%	4.2%	3.1%	2.8%

[1] Unaudited

The decrease in incurred losses from accident year 2019 is due to decrease in volume of disability business written in Australia. The increase in incurred losses in accident year 2022 is due to acquisition of in-force group disability business in Continental Europe.

Reconciliation of gross liability for unpaid claims and claim adjustment expenses

The following table reconciles the Group's net outstanding liabilities to the gross liabilities for unpaid claims and claim adjustment expenses. For details on consolidation please refer to Note 2 "Information on business segments".

The net outstanding liabilities correspond to the total liabilities for unpaid claims and claim adjustment expenses, net of reinsurance for each disaggregation category.

Other short duration contract lines include reserves for business that is not material to the Group and where accident year information is not available. For Life & Health Reinsurance, in certain markets, cedents do not provide sufficient information to reinsurers to split claims incurred and claims paid by accident year. This is based on existing market practice. For these markets, an assessment of available information from other sources was made along with investigating approximations that could be used to provide claims development information by accident year. However, these alternate sources and estimates, based on currently available data and methods, could not be used to generate meaningful and representative accident year information and therefore have been excluded from disclosure. Other short duration contract lines also contain other treaties from Property & Casualty Reinsurance and Corporate Solutions which could not be allocated on a consistent basis to disaggregation categories or specific accident years.

As of 31 December

USD millions	2022
Net outstanding liabilities	
Property & Casualty Reinsurance	
Property	11 804
Liability, proportional	13 389
Liability, non-proportional	8 853
Accident & Health	5 066
Motor, proportional	3 726
Motor, non-proportional	5 976
Specialty	6 701
Corporate Solutions	7 346
Life & Health Reinsurance, long tail	2 765
Total net undiscounted outstanding liabilities excluding other short duration contract lines and before unallocated reinsurance recoverable	65 626
Discounting impact on (Life & Health Reinsurance) short duration contracts	–266
Impact of acquisition accounting	–340
Total net discounted outstanding liabilities excluding other short duration contract lines and before unallocated reinsurance recoverable	65 020
Other short duration contract lines	3 456
Total net discounted outstanding short duration liabilities	**68 476**
Allocated reinsurance recoverables on unpaid claims:	
Property & Casualty Reinsurance	
Property	931
Liability, proportional	241
Liability, non-proportional	194
Accident & Health	203
Motor, proportional	54
Motor, non-proportional	183
Specialty	99
Corporate Solutions	4 928
Consolidation	–3 930
Impact of acquisition accounting	–56
Other short duration contract lines	554
Total short duration reinsurance recoverable on outstanding liabilities	**3 401**
Exclusions:	
Unallocated claim adjustment expenses	1 216
Long duration contracts	12 325
Total other reconciling items	**13 541**
Total unpaid claims and claim adjustment expenses	**85 418**

Discounting information

The following disclosure covers the discounting impact for the disaggregation categories included in the claims development information. Discounting information for Life & Health Reinsurance long tail as of 31 December was as follows:

USD millions	2021	**2022**
Carrying amount of discounted claims	1 103	1 562
Aggregate amount of the discount	–249	–266
Interest accretion[1]	29	27
Range of interest rates	3.1–3.2%	0.5–3.3%

[1] Interest accretion is shown as part of "Life and health benefits" in the income statement.

Please refer to Note 1 ''Organisation and summary of significant accounting policies'' for more details about the Group's discounting approach for unpaid claims and claim adjustment expenses.

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

As of 31 December, the DAC were as follows:

2021 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Corporate Solutions	Group items	Total
Opening balance as of 1 January	2 576	4 901	426	327	8 230
Deferred	5 367	543	738	208	6 856
Effect of acquisitions/disposals and retrocessions		–38			–38
Amortisation	–5 359	–538	–679	–122	–6 698
Effect of foreign currency translation and other changes	–46	–150	–5	–7	–208
Closing balance	2 538	4 718	480	406	8 142

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**

Retroceded DAC arise on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation.

As of 31 December, the PVFP for Life & Health Reinsurance was as follows:

USD millions	2021	**2022**
Opening balance as of 1 January	928	836
Effect of acquisitions/disposals and retrocessions	–7	0
Amortisation	–131	–100
Interest accrued on unamortised PVFP	42	38
Effect of change in unrealised gains/losses	5	29
Effect of foreign currency translation	–1	–9
Closing balance	836	**794**

Retroceded PVFP arises on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation.

The percentage of PVFP which is expected to be amortised in each of the next five years is 12%, 12%, 11%, 10% and 9%.

7 Investments

Investment income
Net investment income by source (excluding unit-linked business) was as follows:

USD millions	2021	2022
Fixed income securities	1 787	1 951
Equity securities	133	57
Policy loans, mortgages and other loans	132	183
Investment real estate	246	251
Short-term investments	19	106
Other current investments	141	136
Share in earnings of equity-accounted investees	806	–44
Cash and cash equivalents		42
Net result from deposit-accounted contracts	20	102
Deposits with ceding companies	482	472
Gross investment income	3 766	**3 256**
Investment expenses	–391	–381
Interest charged for funds held	–2	–6
Net investment income – non-participating business	3 373	**2 869**

Dividends received from investments accounted for using the equity method were USD 236 million and USD 214 million for 2021 and 2022, respectively.

Share in earnings of equity-accounted investees included impairments of the carrying amount of equity-accounted investees of nil and USD 18 million for 2021 and 2022, respectively.

Realised gains and losses
Realised gains and losses for fixed income securities, equity securities and other investments (excluding unit-linked business) were as follows:

USD millions	2021	2022
Fixed income securities available-for-sale:		
Gross realised gains	599	222
Gross realised losses	–271	–204
Other-than-temporary impairments	–1	–60
Net realised investment gains/losses on equity securities	47	–347
Change in net unrealised investment gains/losses on equity securities	–33	–271
Net realised investment gains/losses on trading securities	–53	–208
Change in net unrealised investment gains/losses on trading securities	–102	–67
Net realised/unrealised gains/losses on other investments	365	705
Net realised/unrealised gains/losses on insurance-related activities	20	132
Foreign exchange gains/losses	–34	95
Net realised investment gains/losses – non-participating business	537	**–3**

Net realised/unrealised gains/losses on insurance-related activities included impairments of USD 9 million and USD 10 million for 2021 and 2022, 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 gains of USD 63 million and to losses of USD 43 million for 31 December 2021 and 2022, respectively, originating from equity securities.

Impairment on fixed income securities related to credit losses
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.

A reconciliation of other-than-temporary impairments related to credit losses recognised in earnings was as follows:

USD millions	2021	**2022**
Balance as of 1 January	46	44
Credit losses for which an other-than-temporary impairment was not previously recognised	5	54
Reductions for securities sold during the period	–10	–46
Increase of credit losses for which an other-than-temporary impairment has been recognised previously, when the Group does not intend to sell, or more likely than not will not be required to sell before recovery	5	10
Impact of increase in cash flows expected to be collected	–1	–1
Impact of foreign exchange movements	–1	–1
Balance as of 31 December	44	**60**

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 were as follows:

2021 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Other-than-temporary impairments recognised in other comprehensive income	Estimated fair value
Debt securities issued by governments and government agencies:					
US Treasury and other US government corporations and agencies	14 969	360	–98		15 231
US Agency securitised products	2 981	46	–25		3 002
States of the United States and political subdivisions of the states	1 306	203			1 509
Canada	2 874	120	–12		2 982
United Kingdom	4 158	367	–62		4 463
Germany	2 758	275	–23		3 010
France	2 403	205	–49		2 559
China	2 286	26			2 312
Other	10 603	376	–114		10 865
Total	44 338	1 978	–383		45 933
Corporate debt securities	33 952	2 019	–220	–1	35 750
Mortgage- and asset-backed securities	3 940	91	–22	–7	4 002
Fixed income securities available-for-sale	82 230	4 088	–625	–8	85 685

2022 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Other-than-temporary impairments recognised in other comprehensive income	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
Canada	2 443	17	–129		2 331
United Kingdom	3 451	4	–1 149		2 306
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

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.

Unrealised losses on securities available-for-sale

The following table shows the fair value and unrealised losses of the Group's 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:

2021 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	9 635	74	582	24	10 217	98
US Agency securitised products	1 325	24	36	1	1 361	25
States of the United States and political subdivisions of the states	20	0			20	0
Canada	1 633	10	40	2	1 673	12
United Kingdom	830	25	388	37	1 218	62
Germany	766	20	39	3	805	23
France	1 130	45	48	4	1 178	49
China	20	0	39	0	59	0
Other	4 612	66	636	48	5 248	114
Total	19 971	264	1 808	119	21 779	383
Corporate debt securities	12 181	188	701	33	12 882	221
Mortgage- and asset-backed securities	1 349	16	70	13	1 419	29
Total	33 501	468	2 579	165	36 080	633

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
Canada	734	32	1 481	97	2 215	129
United Kingdom	1 171	462	1 128	687	2 299	1 149
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**

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 2021 and 2022, USD 25 004 million and USD 25 231 million, respectively, of fixed income securities available-for-sale were callable.

USD millions	2021 Amortised cost or cost	2021 Estimated fair value	2022 Amortised cost or cost	2022 Estimated fair value
Due in one year or less	6 119	6 142	13 324	13 079
Due after one year through five years	34 770	35 028	28 616	26 979
Due after five years through ten years	13 612	14 171	13 691	12 195
Due after ten years	24 668	27 216	23 725	18 769
Mortgage- and asset-backed securities with no fixed maturity	3 061	3 128	3 282	3 067
Total fixed income securities available-for-sale	82 230	85 685	**82 638**	**74 089**

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 were as follows:

USD millions	2021	**2022**
Debt securities issued by governments and government agencies	1 272	462
Mortgage- and asset-backed securities	28	22
Fixed income securities trading – non-participating business	1 300	**484**
Equity securities at fair value through earnings – non-participating business	3 978	**2 114**

Investments held for unit-linked business

As of 31 December 2021 and 31 December 2022, the carrying amounts of investments held for unit-linked business consist of equity securities at fair value through earnings of USD 468 million and USD 330 million, respectively.

Mortgage, policy and other loans, and investment real estate

As of 31 December, 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	2021 Carrying value	2021 Fair value	2022 Carrying value	2022 Fair value
Policy loans	34	34	32	32
Mortgage loans	1 645	1 672	1 712	1 569
Other loans	2 264	2 302	2 599	2 443
Investment real estate	2 871	5 544	2 931	5 738

Depreciation expense related to investment real estate was USD 63 million and USD 79 million for 2021 and 2022, respectively. Accumulated depreciation on investment real estate totalled USD 786 million and USD 829 million as of 31 December 2021 and 2022, 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, land or the underlying policies. The loans are spread across numerous counterparties largely based in the US and UK with no specific high risk regarding credit concentration.

Maturity of lessor cash flows

As of 31 December 2022, the total undiscounted cash flows to be received from operating leases of investment real estate for the next five years and thereafter were as follows:

USD millions	Operating leases
Less than one year	214
Between one year and two years	194
Between two years and three years	166
Between three years and four years	138
Between four years and five years	115
After five years	436
Total cash flows	1 263

The Group manages risk associated with the residual value of its leased properties through careful property selection as well as diversification by geographical region and property type. Lease contracts for residential real estate in Switzerland and Germany are usually open-ended. Cash flows for such contracts have been projected taking into consideration the average turnover rate in the region. Lease contracts for residential real estate in the US with a lease term of one year or less have been excluded from the projected cash flows in the table above. Rental income for those leases for the year ended 31 December 2021 and 2022 was USD 25 million and USD 21 million, respectively.

Other financial assets and liabilities by measurement category

As of 31 December 2021 and 2022, "Other invested assets" and "Accrued expenses and other liabilities" by measurement category were as follows:

2021 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	164					164
Reverse repurchase agreements			2 336			2 336
Securities lending/borrowing	1 333		122			1 455
Equity-accounted investments	398			2 717		3 115
Other	376	1 470	963			2 809
Other invested assets	2 271	1 470	3 421	2 717	0	9 879
Accrued expenses and other liabilities						
Derivative financial instruments	435					435
Repurchase agreements			11			11
Securities lending	1 334		86			1 420
Securities sold short	1 032					1 032
Other			1 512		2 390	3 902
Accrued expenses and other liabilities	2 801	0	1 609	0	2 390	6 800

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**

[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 was as follows:

2021 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	1 371	–1 207	164		164
Reverse repurchase agreements	4 398	–2 062	2 336	–2 336	0
Securities borrowing	260	–138	122	–122	0
Total	6 029	–3 407	2 622	–2 458	164

2021 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	–1 550	1 115	–435	181	–254
Repurchase agreements	–1 778	1 767	–11	11	0
Securities lending	–1 853	433	–1 420	1 351	–69
Total	–5 181	3 315	–1 866	1 543	–323

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**

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 2021 and 2022, investments with a carrying value of USD 5 974 million and USD 4 492 million, respectively, were on deposit with regulatory agencies in accordance with local requirements, of which USD 244 million and USD 469 million, respectively, were cash and cash equivalents. As of 31 December 2021 and 2022, investments with a carrying value of USD 15 006 million and USD 14 361 million, respectively, were placed on deposit or pledged to secure certain reinsurance liabilities, including pledged investments in subsidiaries, of which USD 119 million and USD 50 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 2021 and 2022, investments with a carrying value of USD 463 million and USD 482 million, respectively, were placed on deposit or pledged to secure certain derivative and debt liabilities.

As of 31 December 2021 and 2022, securities of USD 16 775 million and USD 14 396 million, respectively, were transferred to third parties under securities lending transactions and repurchase agreements on a fully collateralised basis. Corresponding liabilities of USD 1 431 million and USD 1 260 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 2021 and 2022, a real estate portfolio with a carrying value of USD 190 million and USD 187 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 2021 and 2022, the fair value of the equity securities, government and corporate debt securities received as collateral was USD 5 494 million and USD 4 527 million, respectively. Of this, the amount that was sold or repledged as of 31 December 2021 and 2022 was USD 1 002 million and USD 1 281 million, respectively. The sources of the collateral are securities borrowing, reverse repurchase agreements and derivative transactions.

Recognised gross liability for the obligation to return collateral (from repurchase agreements and securities lending)
As of 31 December 2021 and 2022, 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.

2021 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	2	1 614			1 616
Corporate debt securities	2	160			162
Total repurchase agreements	4	1 774	0	0	1 778
Securities lending					
Debt securities issued by governments and government agencies	794		445	402	1 641
Corporate debt securities	73	139			212
Total securities lending	867	139	445	402	1 853
Gross amount of recognised liabilities for repurchase agreements and securities lending					3 631

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**

The programme is structured in a conservative manner with 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 2022, 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, 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 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 includes 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, the fair values of assets and liabilities measured on a recurring basis by level of input were as follows:

2021 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	14 998	70 675	1 312		86 985
Debt securities issued by US government and government agencies	14 998	1 939			16 937
US Agency securitised products		3 100			3 100
Debt securities issued by non-US governments and government agencies		27 168			27 168
Corporate debt securities		34 438	1 312		35 750
Mortgage- and asset-backed securities		4 030			4 030
Equity securities held for proprietary investment purposes	3 358	620			3 978
Equity securities backing unit-linked business	468				468
Short-term investments held for proprietary investment purposes	2 495	5 967			8 462
Derivative financial instruments	12	1 273	86	–1 207	164
Interest rate contracts	1	433			434
Foreign exchange contracts		331			331
Equity contracts	9	504	60		573
Credit contracts		5			5
Other contracts	2		26		28
Other invested assets	1 114	486	507		2 107
Funds held by ceding companies		172			172
Total assets at fair value	22 445	79 193	1 905	–1 207	102 336
Liabilities					
Derivative financial instruments	–3	–1 275	–272	1 115	–435
Interest rate contracts		–459	–2		–461
Foreign exchange contracts		–421			–421
Equity contracts	–1	–302	–9		–312
Credit contracts		–93			–93
Other contracts	–2		–261		–263
Liabilities for life and health policy benefits			–83		–83
Accrued expenses and other liabilities	–1 080	–1 285			–2 365
Total liabilities at fair value	–1 083	–2 560	–355	1 115	–2 883

[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.

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.

Assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3)

As of 31 December, the reconciliations of the fair values of assets and liabilities measured on a recurring basis using significant unobservable inputs were as follows:

2021 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	1 183	232	588	2 003	−341	−98	−439
Realised/unrealised gains/losses:							
Included in net income[1]	1	−93	−7	−99	121	16	137
Included in other comprehensive income[2]	−42			−42		−1	−1
Purchases	202	3	81	286			0
Issuances				0	−86		−86
Sales	−2	−3	−147	−152	1		1
Settlements	−20	−53		−73	33		33
Transfers into level 3				0			0
Transfers out of level 3			−8	−8			0
Impact of foreign exchange movements	−10			−10			0
Closing balance as of 31 December	1 312	86	507	1 905	−272	−83	−355

[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".

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	**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".

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 years ended 31 December were as follows:

USD millions	2021	2022
Gains/losses included in net income for the period	38	240
Whereof change in unrealised gains/losses relating to assets and liabilities still held at the reporting date	–12	108

Quantitative information about level 3 fair value measurements

Unobservable inputs for major level 3 assets and liabilities as of 31 December were as follows:

USD millions	2021 Fair value	2022 Fair value	Valuation technique	Unobservable input	Range (weighted average[1])
Assets					
Corporate debt securities	1 312	**1 205**			
Infrastructure loans	779	802	Discounted cash flow model	Valuation spread	84—530 bps (220 bps)
Private placement corporate debt	491	367	Corporate spread matrix	Credit spread	54—289 bps (148 bps)
Private placement credit tenant leases	36	29	Discounted cash flow model	Illiquidity premium	125—150 bps (146 bps)
Derivative equity contracts	60	0			
OTC equity option referencing correlated equity indices	60				
Other derivative contracts	26	**55**			
Weather contracts	8	41	Proprietary option model	Risk margin	14–22% (16.9%)
				Correlation	–14 to –13% (–13.2%)
				Volatility (power/gas)	130–135% (130.6%)
				Volatility (temperature)	3–131 (26) HDD/CDD/CAT[2]
				Index value (temperature)	10–1 792 (274) HDD/CDD/CAT[2]
Liabilities					
Derivative equity contracts	–9	**0**			
OTC equity option referencing correlated equity indices	–9				
Other derivative contracts and liabilities for life and health policy benefits	–344	**–247**			
Variable annuity and fair valued GMDB contracts	–261	–187	Discounted cash flow model	Risk margin	4% (n/a)
				Volatility	16.1%–61.8%
				Lapse	1–10%
				Mortality improvement	0–1.5%
				Withdrawal rate (GMDB contracts)	20–97%
Weather contracts	–66	–41	Proprietary option model	Risk margin	6–22% (14.1%)
				Correlation	–39 to –7% (–11.6%)
				Volatility (power/gas)	77–140% (127.5%)
				Volatility (temperature)	0–247 (59) HDD/CDD/CAT[2]
				Index value (temperature)	1–3 093 (902) HDD/CDD/CAT[2]

[1] Unobservable inputs were weighted by the relative fair value of the instruments. For Derivative equity contracts, the weighted average correlation is derived by computing an absolute piecewise correlation impact and is not weighted by the relative fair value.
[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 input used in the fair value measurement of the Group's OTC equity option referencing correlated equity indices is correlation. Where the Group is long correlation risk, a significant increase (decrease) in this input in isolation would have resulted in a significantly higher (lower) fair value measurement. Where the Group is short correlation risk, 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 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.

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.

Other invested assets measured at net asset value
Other invested assets measured at net asset value as of 31 December were as follows:

USD millions	2021 Fair value	2022 Fair value	Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Private equity funds	1 302	1 489	607	non-redeemable	n/a
Real estate funds	2	1	15	non-redeemable	n/a
Private equity direct	165	249	90	non-redeemable	n/a
Hedge funds	1	1		redeemable[1]	90 days[2]
Total	1 470	**1 740**	**712**		

[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 on 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 were as follows:

USD millions	2021	**2022**
Assets		
Other invested assets	9 879	8 794
of which at fair value pursuant to the fair value option	398	435
Funds held by ceding companies	12 532	13 929
of which at fair value pursuant to the fair value option	172	164
Liabilities		
Liabilities for life and health policy benefits	–22 196	–20 925
of which at fair value pursuant to the fair value option	–83	–69

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 years ended 31 December were as follows:

USD millions	2021	**2022**
Other invested assets	54	54
Funds held by ceding companies		–8
Liabilities for life and health policy benefits	16	15
Total	70	**61**

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 were as follows:

2021 USD millions	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Total
Assets			
Policy loans		34	34
Mortgage loans		1 672	1 672
Other loans		2 302	2 302
Investment real estate		5 544	5 544
Total assets	0	9 552	9 552
Liabilities			
Debt	–10 058	–3 407	–13 465
Total liabilities	–10 058	–3 407	–13 465

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**

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 over-the-counter 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, the fair values and notional amounts of the derivatives outstanding were as follows:

2021 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	24 144	433	–408	25
Foreign exchange contracts	29 157	304	–222	82
Equity contracts	16 067	573	–312	261
Credit contracts	9 007	5	–93	–88
Other contracts	9 091	28	–263	–235
Total	87 466	1 343	–1 298	45
Derivatives designated as hedging instruments				
Interest rate contracts	3 730	1	–53	–52
Foreign exchange contracts	19 057	27	–199	–172
Total	22 787	28	–252	–224
Total derivative financial instruments	110 253	1 371	–1 550	–179
Amount offset				
Where a right of set-off exists		–788	788	
Due to cash collateral		–419	327	
Total net amount of derivative financial instruments		164	–435	–271

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**

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 "Investments for unit-linked business". 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 2021 and 2022.

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" and "Net investment result — unit-linked business" in the income statement.

For the years ended 31 December, the gains and losses of derivative financial instruments not designated as hedging instruments were as follows:

USD millions	2021	**2022**
Derivatives not designated as hedging instruments		
Interest rate contracts	52	–20
Foreign exchange contracts	–907	–1 047
Equity contracts	–209	71
Credit contracts	–43	15
Other contracts	162	220
Total gains/losses recognised in income	–945	**–761**

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 31 December 2021 and 2022, 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 years ended 31 December, the gains and losses attributable to the hedged risks were as follows:

		2021		**2022**
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	537	–571	–3	–570
Foreign exchange contracts				
Gains/losses on derivatives	678		1 137	
Gains/losses on hedged items	–678		–1 137	
Amounts excluded from the effectiveness assessment				
Interest rate contracts				
Gains/losses on derivatives		–64		–306
Gains/losses on hedged items		65		292

As of 31 December, 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:

		2021		**2022**
USD millions	Carrying value	Cumulative basis adjustment	Carrying value	Cumulative basis adjustment
Assets				
Fixed income securities available-for-sale	15 248		15 970	
Liabilities				
Short-term debt	–562	1	–783	16
Long-term debt	–3 090	54	–1 852	331

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 2021 and 2022, the Group recorded an accumulated net unrealised foreign currency remeasurement gain of USD 594 million and USD 1 260 million, respectively, in "Other comprehensive income – Foreign currency translation". These offset translation gains and losses on the hedged net investment.

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 2021 and 2022 was approximately USD 583 million and USD 484 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 63 million and USD 54 million as of 31 December 2021 and 2022, respectively. For derivative financial instruments containing credit risk-related contingent features, the Group posted collateral of USD 36 million and USD 34 million as of 31 December 2021 and 2022, respectively. In the event of a reduction of the Group's credit rating to below investment grade, a fair value of USD 19 million additional collateral would have had to be posted as of 31 December 2022. The total equals the amount needed to settle the instruments immediately as of 31 December 2022.

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 and contingent capital instruments

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 was as follows:

USD millions	2021	2022
Senior financial debt	300	784
Senior operational debt		2
Subordinated financial debt	562	
Short-term debt	862	**786**
Senior financial debt	2 578	1 336
Senior operational debt	99	100
Subordinated financial debt	5 290	6 730
Subordinated operational debt	1 859	1 588
Contingent capital instruments classified as financial debt	497	498
Long-term debt	10 323	**10 252**
Total carrying value	11 185	**11 038**
Total fair value	13 465	**11 090**

As of 31 December 2021 and 2022, operational debt, ie debt related to operational leverage, amounted to USD 2 billion (thereof USD 1.9 billion limited- or non-recourse) and USD 1.7 billion (thereof USD 1.6 billion limited- or non-recourse), respectively. Operational leverage is subject to asset/liability matching and is excluded from rating agency financial leverage calculations.

Maturity of long-term debt

As of 31 December, long-term debt as reported above had the following maturities:

USD millions	2021	2022
Due in 2023	851	
Due in 2024	2 264	2 254
Due in 2025	1 083	1 673
Due in 2026	461	333
Due in 2027	271	1 015
Due after 2027	5 393	4 977
Total carrying value	10 323	**10 252**

Senior long-term debt

Maturity	Instrument	Issued in	Currency	Nominal in millions	Interest rate	Book value in USD millions
2024	EMTN	2014	CHF	250	1.00%	258
2026	Senior notes[1]	1996	USD	291	7.00%	321
2027	EMTN	2015	CHF	250	0.75%	246
2030	Senior notes[1]	2000	USD	156	7.75%	195
2042	Senior notes	2012	USD	322	4.25%	316
Various	Payment undertaking agreements	Various	USD	92	Various	100
Total senior long-term debt as of 31 December 2022						**1 436**
Total senior long-term debt as of 31 December 2021						2 677

[1] Assumed in the acquisition of GE Insurance Solutions.

Subordinated long-term debt

Maturity	Instrument	Issued in	Currency	Nominal in millions	Interest rate	First call in	Book value in USD millions
2035	Subordinated fixed rate resettable callable loan note	2020	SGD	350	3.13%	2025	260
2044	Subordinated fixed rate resettable callable loan note	2014	USD	500	4.50%	2024	499
2049	Subordinated fixed rate reset step-up callable loan note	2019	USD	1000	5.00%	2029	993
2050	Subordinated fixed rate reset step-up callable loan note	2019	EUR	750	2.53%	2030	796
2050	Subordinated fixed-to-floating rate non step-up callable loan note	2022	USD	700	5.75%	2025	698
2052	Subordinated fixed rate reset step-up callable loan note	2020	EUR	800	2.71%	2032	635
2052	Subordinated fixed-to-floating rate non step-up callable note	2022	USD	800	5.63%	2027	769
2056	Subordinated fixed rate non step-up callable loan note	2022	USD	400	6.05%	2031	371
2057	Subordinated private placement (amortising, limited recourse)	2007	GBP	1 320	6.39%		1 588
Perpetual	Perpetual subordinated fixed-to-floating rate callable loan note	2015	EUR	750	2.60%	2025	712
Perpetual	Perpetual subordinated fixed spread callable note	2019	USD	1000	4.25%	2024	997
Total subordinated long-term debt as of 31 December 2022							**8 318**
Total subordinated long-term debt as of 31 December 2021							7 149

Contingent capital instruments classified as long-term debt

Maturity	Instrument	Issued in	Currency	Nominal in millions	Interest rate	Book value in USD millions
2024	Senior unsecured exchangeable instrument with issuer stock settlement	2018	USD	500	3.25%	498
Total contingent capital instruments classified as long-term debt as of 31 December 2022						**498**
Total contingent capital instruments classified as long-term debt as of 31 December 2021						497

Interest expense on long-term debt and contingent capital instruments

Interest expense on long-term debt for the years ended 31 December was as follows:

USD millions	2021	**2022**
Senior financial debt	88	48[1]
Senior operational debt	3	3
Subordinated financial debt	227	340
Subordinated operational debt	119	105
Contingent capital instruments classified as financial debt	17	18
Total	454	**514**

[1] Includes a gain on debt extinguishment of USD 22 million.

The Group hedges the interest rate risk on some of its long-term debt positions. The net impact of the change in the fair value of the debt and interest rate swap 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".

Convertible debt

In June 2018, SRL issued six-year senior unsecured exchangeable notes with issuer stock settlement. The notes have a face value of USD 500 million, with a fixed coupon of 3.25% per annum, payable semi-annually in arrear until the maturity date (13 June 2024). Subject to the conditions of the notes, noteholders may exchange their notes for ordinary shares of SRL at an exchange price of USD 102.2844 (adjusted from the initial exchange price of USD 115.2593). The exchange price is subject to further adjustment in certain circumstances described in the conditions of the notes. The issuer may elect to settle a noteholder-initiated exchange in cash or SRL shares. To economically offset the settlement of a noteholder-initiated exchange, SRL purchased matching call options on SRL shares with a portion of the proceeds. Consequently, no new SRL shares will be issued upon a noteholder-initiated exchange. Assuming that all of the notes are exchanged at the request of noteholders, and subject to further adjustments to the exchange price as described in the conditions of the notes, 4 888 331 registered shares of SRL would have to be delivered to noteholders. Both the noteholder-initiated exchange option and the matching call options are accounted as equity within these financial statements.

Long-term debt issued in 2022

In May 2022, Swiss Re Ltd issued subordinated fixed-to-floating rate non step-up callable loan notes with an aggregate face value of USD 700 million by fully drawing on the subordinated debt facility established in November 2015. The notes have a scheduled maturity date on 15 August 2050 and a first optional redemption date on 15 August 2025. Swiss Re Ltd pays a fixed coupon of 5.75% per annum until the first optional redemption date.

In May 2022, Swiss Re Ltd issued subordinated fixed rate non step-up callable loan notes with an aggregate face value of USD 400 million by fully drawing on the subordinated debt facility established in April 2016. The notes have a scheduled maturity date on 15 February 2056 and a first optional redemption date on 15 February 2031. Swiss Re Ltd pays a fixed coupon of 6.05% per annum.

In May 2022, Swiss Re Ltd issued subordinated fixed-to-floating rate non step-up callable notes with an aggregate face value of USD 800 million by fully drawing on the subordinated debt facility established in June 2016. The notes have a scheduled maturity date on 15 August 2052 and a first optional redemption date on 15 August 2027. Swiss Re Ltd pays a fixed coupon of 5.625% per annum until the first optional redemption date.

12 Leases

As part of its normal business operations, the Group as a lessee enters into a number of lease agreements mainly for office space. Certain lease agreements include rental payments adjusted periodically for inflation. Renewal or termination options that are reasonably certain of exercise by the lessee are included in the lease term. The lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Lease liabilities and right-of-use assets
Lease liabilities and right-of-use assets for operating leases as of 31 December were as follows:

USD millions	2021	**2022**
Operating lease right-of-use assets	426	396
Operating lease liabilities	478	441

Operating lease right-of-use assets are included in "Other assets" and operating lease liabilities are included in "Accrued expenses and other liabilities" on the balance sheet.

Maturity of lease liabilities
As of 31 December, the total undiscounted cash flows due to operating leases for the next five years and thereafter were as follows:

USD millions	2021	**2022**
Less than one year	86	71
Between one year and two years	74	65
Between two years and three years	66	55
Between three years and four years	53	52
Between four years and five years	48	46
After five years	209	227
Total undiscounted cash flows	536	**516**
Less imputed interest	–58	–75
Total lease liability	478	**441**

As of 31 December 2022, undiscounted sublease cash flows over the next nine years were USD 45 million.

The discount rates used to determine the lease liability reflect the collateralised borrowing rates for the Group, where the underlying collateral is assumed to be real estate.

The weighted average discount rate for operating leases as of 31 December 2021 and 2022 was 2.1% and 2.8%, respectively. The weighted average remaining lease term for operating leases as of 31 December 2021 and 2022 was 9.9 years and 10.7 years, respectively.

Lease cost
The composition of total lease cost for all operating leases for the year ended 31 December was as follows:

USD millions	2021	**2022**
Fixed operating lease cost	85	80
Other lease cost[1]	5	5
Total operating lease cost	90	**85**
Less sublease income from operating leases	–6	–4
Total lease cost	84	**81**

[1] "Other lease cost" includes variable lease cost.

Other information
For the year ended 31 December 2021 and 2022, cash paid for amounts included in the measurement of operating lease liabilities was USD 89 million and USD 82 million, respectively. Right-of-use assets obtained in exchange for new operating lease liabilities in 2021 and 2022 were USD 51 million and USD 72 million, respectively.

13 Earnings per share

Earnings per share for the years ended 31 December were as follows:

USD millions (except share data)	2021	2022
Basic earnings per share		
Net income	1 437	480
Non-controlling interests		–8
Net income attributable to common shareholders	1 437	**472**
Weighted average common shares outstanding	288 952 702	289 001 080
Net income per share in USD	4.97	**1.63**
Net income per share in CHF[1]	4.52	**1.63**
Effect of dilutive securities		
Change in income available to common shares due to convertible debt	14	14
Change in average number of shares due to convertible debt	14 072 893	13 763 879
Change in average number of shares due to employee options	506 107	323 651
Diluted earnings per share		
Net income assuming debt conversion and exercise of options	1 451	**486**
Weighted average common shares outstanding	303 531 702	303 088 610
Net income per share in USD	4.78	**1.60**
Net income per share in CHF[1]	4.35	**1.60**

[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 are declared in Swiss francs. During the years ended 31 December 2021 and 2022, the parent company of the Group (Swiss Re Ltd) paid dividends per share of CHF 5.90, respectively.

14 Income taxes

The Group is generally subject to corporate income taxes based on the taxable net income in various jurisdictions in which it operates. The components of the income tax expense were:

USD millions	2021	2022
Current taxes	268	372
Deferred taxes	126	–201
Income tax expense	394	**171**

Tax rate reconciliation

The following table reconciles the expected tax expense at the Swiss statutory tax rate to the actual tax expense in the accompanying income statement:

USD millions	2021	2022
Income tax at the Swiss statutory tax rate of 19.7%	361	128
Increase (decrease) in the income tax charge resulting from:		
Foreign income taxed at different rates	81	24
Impact of foreign exchange movements	–45	–33
Tax exempt income/dividends received deduction	29	6
Change in valuation allowance	–42	21
Non-deductible expenses	42	36
Change in statutory rate	–10	–1
Other income based taxes	13	–1
Change in liability for unrecognised tax benefits including interest and penalties	–3	21
Basis differences in subsidiaries	–25	13
Intra-entity transfers	–12	–2
Other, net[1]	5	–41
Total	394	**171**

[1] Other, net includes tax return to tax provision and other prior year adjustments from various jurisdictions in 2021 and 2022 of USD –2 million and USD –73 million, respectively.

For the year ended 31 December 2022, the Group reported a tax expense of USD 171 million on a pre-tax income of USD 651 million, compared to an expense of USD 394 million on a pre-tax income of USD 1 831 million for 2021. This translates into an effective tax rate in the current and prior-year reporting periods of 26.3% and 21.5%, respectively.

For the year ended 31 December 2022, the rate was driven by profits earned in higher tax jurisdictions, tax charges from non-deductible expenses, increases on valuation allowance on deferred tax assets and increases in unrecognised tax benefit liabilities, partially offset by tax benefits from foreign currency translation differences and prior year adjustments. The tax rate in the year ended 31 December 2021 was largely driven by profits earned in higher tax jurisdictions and tax charges from non-deductible expenses, partially offset by tax benefits from the release of valuation allowance on deferred tax assets and foreign currency translation differences between statutory and US GAAP accounts.

Deferred and other non-current taxes

The components of deferred and other non-current taxes were as follows:

USD millions	2021	2022
Deferred tax assets		
Benefit on loss carryforwards	3 155	3 091
Technical provisions	1 001	1 281
Unearned premium reserves	375	378
Deferred acquisition costs	106	134
Present value of future profits	149	133
Investment valuations in income	257	475
Unrealised gains in income	121	
Unrealised gains on investments	15	1 825
Income accrued/deferred	156	198
Fixed assets	143	149
Pension provisions	221	182
Currency translation adjustments	436	463
Other	411	342
Gross deferred tax asset	6 546	8 651
Valuation allowance	–388	–361
Unrecognised tax benefits offsetting benefits on loss carryforwards	–27	–6
Total deferred tax assets	6 131	**8 284**
Deferred tax liabilities		
Technical provisions	–2 029	–1 366
Unearned premium reserves	–164	–143
Deferred acquisition costs	–1 115	–1 155
Present value of future profits	–146	–140
Investment valuations in income	–448	–987
Unrealised gains in income	–12	–340
Unrealised gains on investments	–736	–7
Income accrued/deferred	–169	–164
Pension provisions	–179	–191
Foreign exchange provisions	–667	–679
Currency translation adjustments	–216	–260
Other	–349	–396
Total deferred tax liabilities	–6 230	**–5 828**
Liability for unrecognised tax benefits including interest and penalties	–154	–183
Total deferred and other non-current tax liabilities	–6 384	**–6 011**

The Group has not recognised deferred tax liabilities or additional foreign withholding tax liabilities for undistributed earnings of its foreign subsidiaries that arose in 2022 and prior where there are current plans to indefinitely reinvest those earnings. The Group has the intent and ability to control all distributions from foreign subsidiaries in a tax efficient manner. Deferred tax liabilities or additional foreign withholding tax liabilities will be recognised if the Group can no longer demonstrate that it plans to indefinitely reinvest the undistributed earnings. As of 31 December 2022, the US GAAP undistributed earnings of these subsidiaries was USD 5.6 billion. Due to the differences in US GAAP and local tax basis of undistributed earnings, it is not practicable to estimate the amount of additional tax liability if these earnings were not indefinitely reinvested.

In 2022, USD 2 million was distributed from subsidiaries where the earnings were planned to be permanently reinvested. No foreign tax withholding liability arose from this distribution and minimal shareholder tax liability resulted due to the participation tax exemption rules.

As of 31 December 2022, the Group had USD 14 761 million net operating tax loss carryforwards, expiring as follows: USD 6 million in 2023, USD 796 million in 2024, USD 378 million in 2025, USD 736 million in 2026, USD 7 877 million in 2027 and beyond and USD 4 968 million never expire.

As of 31 December 2022, the Group had capital loss carryforwards of USD 551 million, expiring as follows: USD 12 million in 2025, USD 2 million in 2027 and beyond and USD 537 million that never expire.

For the year ended 31 December 2022, net operating tax losses of USD 3 142 million and net capital tax losses of USD 95 million were utilised.

The valuation allowance for deferred tax assets as of 31 December 2021 and 2022 was USD 388 million and USD 361 million, respectively. The net change in the valuation allowance for the year ended 31 December 2022 was a decrease of USD 27 million, with a USD 17 million decrease driven by balance sheet translation recorded in equity, a USD 21 million net increase included as a tax charge in income tax from operations and a USD 31 million decrease from entities disposed in 2022 and included in the net assets sold.

The valuation allowance as of 31 December 2022 was primarily related to loss carryforwards and intangible assets that, in the judgment of management, are not more likely than not to be realised. In assessing the realisability of deferred tax assets, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realised. The ultimate realisation of deferred tax assets depends on the generation of future taxable income during the periods in which those temporary differences are deductible.

Management considers projections of future taxable income and tax planning strategies in making this assessment. Based on the level of historical taxable income and projections of future taxable income over the periods for which the deferred tax assets are deductible, management believes that is more likely than not that the Group will realise the benefits of these deductible differences, net of the existing valuation allowance as of 31 December 2022. The amount of the deferred tax asset considered realisable, however, could be reduced in the near term if estimates of future taxable income during the carryforward periods are reduced.

Subsequently recognised tax benefits related to the valuation allowance for deferred tax assets as of 31 December 2022 will be allocated entirely to income tax from operations.

Income taxes paid in 2021 and 2022 were USD 258 million and USD 419 million, respectively.

Unrecognised tax benefits
A reconciliation of the opening and closing amount of gross unrecognised tax benefits (excluding interest and penalties) is as follows:

USD millions	2021	**2022**
Balance as of 1 January	150	143
Additions based on tax positions related to current year	11	14
Additions based on tax positions related to prior years	14	14
Reductions for tax positions of current year	–2	–2
Reductions for tax positions of prior years	–20	–5
Statute expiration	–2	
Settlements	–1	–7
Other (including foreign currency translation)	–7	–5
Balance as of 31 December	143	**152**

As of 31 December 2021 and 2022, the amount of gross unrecognised tax benefits within the tabular reconciliation that, if recognised, would affect the effective tax rate were approximately USD 143 million and USD 152 million, respectively.

Interest and penalties related to unrecognised tax benefits are recorded in income tax expense/benefit. For the years ended 31 December 2021 and 2022, such expenses were USD 1 million and USD 4 million respectively, offset with a USD 5 million payment in 2022. For the years ended 31 December 2021 and 2022, USD 38 million and USD 37 million, respectively, were accrued for the payment of interest (net of tax benefits) and penalties. The accrued interest balance as of 31 December 2022 is included within the deferred and other non-current taxes section reflected above and in the balance sheet.

The balance of gross unrecognised tax benefits as of 31 December 2022 presented in the table above excludes accrued interest and penalties (USD 37 million).

During the year, certain tax positions and audits in Canada, Malaysia, Singapore and Switzerland were effectively settled.

The Group continually evaluates proposed adjustments by taxing authorities. The Group believes that it is reasonably possible (more than remote and less than likely) that the balance of unrecognised tax benefits could decrease by USD 108 million over the next 12 months due to settlements or expiration of statutes. It is also reasonably possible that balance could increase as a result of proposed adjustments by taxing authorities. Quantification of an estimated range of increases cannot be made at this time.

The following table summarises jurisdictions and tax years that remain subject to examination:

Australia	2017–2022	Korea	2017–2022
Brazil	2014; 2017–2022	Luxembourg	2017–2022
Canada	2016–2022	Malaysia	2021–2022
China	2012–2022	Mexico	2017–2022
Colombia	2017–2022	Netherlands	2016–2022
Denmark	2018–2022	New Zealand	2016–2022
France	2019–2022	Nigeria	2020–2022
Germany	2017–2022	Singapore	2017–2022
Hong Kong	2016–2022	Slovakia	2017–2022
India	2004; 2010–2022	South Africa	2016–2022
Ireland	2016–2022	Spain	2018–2022
Israel	2017–2022	Switzerland	2017–2022
Italy	2017–2022	United Kingdom	2020–2022
Japan	2016–2022	United States	2017–2022

15 Benefit plans

Defined benefit pension plans and post-retirement benefits
The Group sponsors various funded defined benefit pension plans. Employer contributions to the plans are charged to income on a basis which recognises the costs of pensions over the expected service lives of employees covered by the plans. The Group's funding policy for these plans is to contribute annually at a rate that is intended to maintain a level percentage of compensation for the employees covered. A full valuation is prepared at least every three years.

The Group also provides certain healthcare and life insurance benefits for retired employees and their dependants. Generally employees become eligible for these benefits when they become eligible for pension benefits.

The measurement date of these plans is 31 December for each year presented.

2021 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Benefit obligation as of 1 January	4 750	2 234	360	7 344
Service cost	136	7	4	147
Interest cost		35	4	39
Amendments				0
Actuarial gains/losses	2	–76	–20	–94
Benefits paid	–40	–79	–17	–136
Employee contribution	38			38
Effect of settlement, curtailment and termination	–146			–146
Effect of foreign currency translation	–142	–49	–6	–197
Benefit obligation as of 31 December	4 598	2 072	325	6 995
Fair value of plan assets as of 1 January	4 702	2 316	0	7 018
Actual return on plan assets	346	–31		315
Company contribution	112	15	17	144
Benefits paid	–40	–79	–17	–136
Employee contribution	38			38
Effect of settlement, curtailment and termination	–146			–146
Effect of foreign currency translation	–140	–40		–180
Fair value of plan assets as of 31 December	4 872	2 181	0	7 053
Funded status	274	109	–325	58

2022 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Benefit obligation as of 1 January	4 598	2 072	325	6 995
Service cost	122	6	3	131
Interest cost	9	41	5	55
Amendments	4			4
Actuarial gains/losses	–706	–528	–65	–1 299
Benefits paid	–172	–73	–16	–261
Employee contribution	38			38
Effect of settlement, curtailment and termination	1	–77		–76
Effect of foreign currency translation	–93	–115	–5	–213
Benefit obligation as of 31 December	**3 801**	**1 326**	**247**	**5 374**
Fair value of plan assets as of 1 January	4 872	2 181	0	7 053
Actual return on plan assets	–461	–570		–1 031
Company contribution	112	14	16	142
Benefits paid	–172	–73	–16	–261
Employee contribution	38			38
Effect of settlement, curtailment and termination	1	–77		–76
Effect of foreign currency translation	–90	–131		–221
Fair value of plan assets as of 31 December	**4 300**	**1 344**	**0**	**5 644**
Funded status	**499**	**18**	**–247**	**270**

Amounts recognised in "Other assets" and "Accrued expenses and other liabilities" in the Group's balance sheet as of 31 December were as follows:

2021 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Non-current assets	274	263		537
Current liabilities		–2	–18	–20
Non-current liabilities		–152	–307	–459
Net amount recognised	274	109	–325	58

2022 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Non-current assets	499	164		663
Current liabilities		–3	–18	–21
Non-current liabilities		–143	–229	–372
Net amount recognised	**499**	**18**	**–247**	**270**

Amounts recognised in accumulated other comprehensive income, gross of tax, as of 31 December were as follows:

2021 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Net gain/loss	528	263	2	793
Prior service cost/credit	–55	2	–20	–73
Total	473	265	–18	720

2022 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Net gain/loss	366	316	–64	618
Prior service cost/credit	–38	2	–5	–41
Total	**328**	**318**	**–69**	**577**

Components of net periodic benefit cost

The components of pension and post-retirement cost for the years ended 31 December were as follows:

2021 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Service cost (net of participant contributions)	136	7	4	147
Interest cost		35	4	39
Expected return on assets	–118	–47		–165
Amortisation of:				
Net gain/loss	65	20	1	86
Prior service cost	–15		–15	–30
Effect of settlement, curtailment and termination	14			14
Net periodic benefit cost	82	15	–6	91

2022 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Service cost (net of participant contributions)	122	6	3	131
Interest cost	9	41	5	55
Expected return on assets	–109	–54		–163
Amortisation of:				
Net gain/loss	26	9	1	36
Prior service cost	–13		–15	–28
Effect of settlement, curtailment and termination		17		17
Net periodic benefit cost	**35**	**19**	**–6**	**48**

Other changes in plan assets and benefit obligations recognised in other comprehensive income for the years ended 31 December were as follows:

2021 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Net gain/loss	–226	2	–20	–244
Prior service cost/credit				0
Amortisation of:				
Net gain/loss	–65	–20	–1	–86
Prior service cost	15		15	30
Effect of settlement, curtailment and termination	–13			–13
Exchange rate gain/loss recognised during the year		–16		–16
Total recognised in other comprehensive income, gross of tax	–289	–34	–6	–329
Total recognised in net periodic benefit cost and other comprehensive income, gross of tax	–207	–19	–12	–238

2022 USD millions	Swiss plan	Foreign plans	Other benefits	Total
Net gain/loss	–136	96	–65	–105
Prior service cost/credit	4			4
Amortisation of:				
Net gain/loss	–26	–9	–1	–36
Prior service cost	13		15	28
Effect of settlement, curtailment and termination		–17		–17
Exchange rate gain/loss recognised during the year		–17		–17
Total recognised in other comprehensive income, gross of tax	**–145**	**53**	**–51**	**–143**
Total recognised in net periodic benefit cost and other comprehensive income, gross of tax	**–110**	**72**	**–57**	**–95**

The accumulated benefit obligation (the current value of accrued benefits excluding future salary increases) for pension benefits was USD 6 631 million and USD 5 108 million as of 31 December 2021 and 2022, respectively.

Pension plans with a projected benefit obligation and an accumulated benefit obligation in excess of plan assets as of 31 December were as follows:

USD millions	2021	**2022**
Projected benefit obligation	523	805
Fair value of plan assets	368	659

USD millions	2021	**2022**
Accumulated benefit obligation	517	798
Fair value of plan assets	367	656

Principal actuarial assumptions

	Swiss plan		Foreign plans weighted average		Other benefits weighted average	
	2021	**2022**	2021	**2022**	2021	**2022**
Assumptions used to determine obligations at the end of the year						
Discount rate	0.2%	2.1%	2.1%	4.7%	1.5%	3.5%
Rate of compensation increase	1.8%	2.0%	2.9%	3.1%	2.1%	3.0%
Interest crediting rate	1.5%	2.8%				
Assumptions used to determine net periodic pension costs for the year ended						
Discount rate	0.0%	0.2%	1.6%	2.1%	1.1%	1.5%
Expected long-term return on plan assets	2.8%	2.5%	2.2%	2.6%		
Rate of compensation increase	1.8%	1.8%	2.6%	2.9%	2.1%	2.1%
Interest crediting rate	1.8%	1.5%				
Assumed medical trend rates at year end						
Medical trend – initial rate					4.4%	4.8%
Medical trend – ultimate rate					3.7%	3.7%
Year that the rate reaches the ultimate trend rate					2024	2025

The expected long-term rates of return on plan assets are based on long-term expected inflation, interest rates, risk premiums and targeted asset category allocations. The estimates take into consideration historical asset category returns.

Plan asset allocation by asset category

The actual asset allocation by major asset category for defined benefit pension plans as of the respective measurement dates in 2021 and 2022 was as follows:

	Swiss plan allocation			Foreign plans allocation		
	2021	**2022**	**Target allocation**	2021	**2022**	**Target allocation**
Asset category						
Equity securities	28%	25%	23%	5%	5%	5%
Fixed income securities	36%	36%	45%	68%	64%	85%
Real estate	18%	22%	24%	0%	1%	1%
Other	18%	17%	8%	27%	30%	9%
Total	100%	**100%**	**100%**	100%	**100%**	**100%**

Actual asset allocation is determined by a variety of current economic and market conditions and considers specific asset class risks.

Equity securities include Swiss Re shares of USD 3 million (0.04% of total plan assets) and USD 2 million (0.04% of total plan assets) as of 31 December 2021 and 2022, respectively.

The Group's pension plan investment strategy is to match the maturity profiles of the assets and liabilities in order to reduce the future volatility of pension expense and funding status of the plans. Tactical allocation decisions that reflect this strategy are made on a quarterly basis, including balancing the investment portfolios between equity and fixed income securities.

Assets measured at fair value

For a description of the different fair value levels and valuation techniques see Note 8 "Fair value disclosures".

Certain items reported as pension plan assets at fair value in the following table are not within the scope of Note 8, namely two positions: real estate and an insurance contract.

Real estate positions classified as level 1 and level 2 are exchange-traded real estate funds where a market valuation is readily available. Real estate reported on level 3 is property owned by the pension funds. These positions are accounted for at the capitalised income value. The capitalisation based on sustainable recoverable earnings is conducted at interest rates that are determined individually for each property, based on the property's location, age and condition. If properties are intended for disposal, the estimated selling costs and taxes are recognised in provisions. Sales gains or losses are allocated to income from real estate when the contract is concluded.

The fair value of the insurance contract is based on the fair value of the assets backing the contract.

As of 31 December, the fair values of pension plan assets were as follows:

2021 USD millions	Fair value Quoted prices in active markets for identical assets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Investments measured at net asset value as practical expedient	Total
Assets					
Fixed income securities:					
Government debt securities	93	1 346			1 439
Corporate debt securities		1 635	9		1 644
RMBS/CMBS/ABS		132			132
Equity securities	1 347	111			1 458
Real estate	25		882		907
Other assets		106		1 248	1 354
Cash and cash equivalents	119				119
Total plan assets	1 584	3 330	891	1 248	7 053

2022 USD millions	Fair value Quoted prices in active markets for identical assets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Investments measured at net asset value as practical expedient	Total
Assets					
Fixed income securities:					
Government debt securities	119	833			952
Corporate debt securities		1 478	6		1 484
RMBS/CMBS/ABS		6			6
Equity securities	1 076	73			1 149
Real estate	11	9	919		939
Other assets		71		965	1 036
Cash and cash equivalents	78				78
Total plan assets	**1 284**	**2 470**	**925**	**965**	**5 644**

Assets measured at fair value using significant unobservable inputs (level 3)

For the years ended 31 December, the reconciliation of fair value of pension plan assets using significant unobservable inputs were as follows:

2021 USD millions	Real estate	Other assets	Total
Balance as of 1 January	861	11	872
Realised/unrealised gains/losses:			
Relating to assets still held at the reporting date	33	–1	32
Relating to assets sold during the period			0
Purchases, issuances and settlements	13		13
Transfers in and/or out of level 3			0
Impact of foreign exchange movements	–25	–1	–26
Closing balance as of 31 December	882	9	891

2022 USD millions	Real estate	Other assets	Total
Balance as of 1 January	882	9	891
Realised/unrealised gains/losses:			
Relating to assets still held at the reporting date	6	–2	4
Relating to assets sold during the period			0
Purchases, issuances and settlements	6		6
Transfers in and/or out of level 3			0
Impact of foreign exchange movements	25	–1	24
Closing balance as of 31 December	**919**	**6**	**925**

Expected contributions and estimated future benefit payments

The employer contributions expected to be made in 2023 to the defined benefit pension plans are USD 133 million and to the post-retirement benefit plans are USD 17 million.

As of 31 December 2022, the projected benefit payments, which reflect expected future service, not adjusted for transfers in and for employees' voluntary contributions, are as follows:

USD millions	Swiss plan	Foreign plans	Other benefits	Total
2023	297	88	17	402
2024	282	79	18	379
2025	276	81	18	375
2026	268	82	18	368
2027	256	83	17	356
Years 2028–2032	1 162	424	84	1 670

Defined contribution pension plans

The Group sponsors a number of defined contribution plans to which employees and the Group make contributions. The accumulated balances are paid as a lump sum at the earlier of retirement, termination, disability or death. The amount expensed in 2021 and 2022 was USD 87 million and USD 88 million, respectively.

16 Share-based payments

As of 31 December 2021 and 2022, the Group had the share-based compensation plans as described below.

The total compensation cost for share-based compensation plans recognised in net income was USD 61 million and USD 59 million in 2021 and 2022, respectively. The related tax benefit was USD 12 million and USD 12 million, respectively.

Restricted shares
The Group granted 74 018 and 37 704 restricted shares to selected employees in 2021 and 2022, respectively. In addition, 45 315 and 41 855 shares were delivered to members of the Board of Directors during 2021 and 2022, respectively, which are generally not subject to forfeiture risk.

A summary of the movements in shares relating to outstanding awards granted under the restricted share plans for the year ended 31 December 2022 is as follows:

	Weighted average grant date fair value in CHF[1]	Number of shares
Non-vested at 1 January	85	279 161
Granted	83	79 559
Forfeited	88	–1 353
Vested	89	–97 900
Outstanding as of 31 December	**83**	**259 467**

[1] Equal to the market price of the shares at grant.

Leadership Performance Plan/Leadership Share Plan
The Leadership Performance Plan (LPP)/Leadership Share Plan (LSP) awards are expected to be settled in shares, and the requisite service as well as the maximum contractual term are three years. For LPP 2019, LPP 2020, LSP 2021 and LSP 2022 awards, an additional two-year holding period applies for all members of the Group EC and other key executives. At grant date, LPP 2019 awards were split equally into two underlying components of Performance Share Units (PSUs). The ROE PSUs are measured against a return on equity performance condition and will vest within a range of 0-100%. The TSR PSUs are based on relative total shareholder return, measured against a pre-defined group of peers and will vest within a range of 0-200%. At grant date, LPP 2020 was split equally into three underlying components of PSUs. The ENW PSUs, being the third component, are measured against ENW growth performance and will vest within a range of 0-100%. As of 2021, the LSP succeeded the LPP, whereby depending on the corporate band of the participant, the plan consists of either non-performance based components in the form of Share Units (SUs), three separate performance-based components in the form of PSUs, similar to LPP 2020, each vesting within a range of 0-150%, or a mix of both non-performance and performance based components. Each SU is entitled to a dividend equivalent (equal value to actual Swiss Re dividends), accrued annually and settled in shares at the end of the vesting period. The fair values of all components are determined separately, based on stochastic models.

The fair value assumptions in the grant valuations include market estimates for dividends for all LPP and LSP awards, and the risk-free rate based on the average of the 10-year US Treasury bond taken monthly over each year in the performance period for LPP 2019, LSP 2020 and LSP 2021. Risk-free rates range between 1.5% and 2.2%.

For the year ended 31 December 2022, the outstanding units were as follows:

ROE PSU	LPP 2019	LPP 2020	LSP 2021	LSP 2022
Non-vested at 1 January	286 158	200 391	118 032	
Granted				127 489
Forfeited	–4 987	–4 638	–2 049	–1 344
Vested	–281 171	–423	–1 455	–1 790
Outstanding as of 31 December	**0**	**195 330**	**114 528**	**124 355**
Grant date fair value in CHF	**78.22**	**78.81**	**74.20**	**69.44**

TSR PSU				
Non-vested at 1 January	275 596	328 153	213 007	
Granted				317 526
Forfeited	–4 802	–7 595	–3 698	–3 345
Vested	–270 794	–693	–2 625	–4 460
Outstanding as of 31 December	**0**	**319 865**	**206 684**	**309 721**
Grant date fair value in CHF	**81.25**	**48.12**	**53.67**	**67.57**

ENW PSU				
Non-vested at 1 January		185 545	114 611	
Granted				141 283
Forfeited		–4 293	–1 991	–1 490
Vested		–392	–1 413	–1 984
Outstanding as of 31 December		**180 860**	**111 207**	**137 809**
Grant date fair value in CHF		**85.17**	**74.20**	**69.44**

SU				
Non-vested at 1 January			307 779	
Granted			20 456	407 596
Forfeited			–12 423	–11 162
Vested				
Outstanding as of 31 December			**315 812**	**396 434**
Grant date fair value in CHF			**93.50**	**87.90**

Unrecognised compensation cost
As of 31 December 2022, the total unrecognised compensation cost (net of forfeitures) related to non-vested, share-based compensation awards was USD 85 million and the weighted average period over which that cost is expected to be recognised is 1.9 years.

The number of shares authorised for the Group's share-based payments to employees was 3 711 203 and 4 173 139 as of 31 December 2021 and 2022, respectively. The Group's policy is to ensure that sufficient treasury shares are available at all times to settle future share-based compensation plans.

Global Share Participation Plan
Swiss Re has a Global Share Participation Plan, which is a share purchase plan available to employees of companies within the Group. Swiss Re makes a financial contribution to participants in the plan, by matching the commitment that they make during the plan cycle with additional Swiss Re shares.

If the employee is still employed by Swiss Re at the end of a plan cycle, the employee will receive an additional number of shares equal to 30% of the total number of purchased and dividend shares held at that time. In 2021 and 2022, Swiss Re contributed USD 12 million and USD 15 million to the plans and authorised 199 569 and 228 499 shares as of 31 December 2021 and 2022, respectively.

17 Compensation, participations and loans of members of governing bodies

The disclosure requirements under Swiss law in respect of compensation and loans to the members of the Board of Directors and of the Group Executive Committee, as well as closely related persons, are detailed in the Compensation Report on pages 128–135 of the Financial Report of the Swiss Re Group.

The disclosure requirements under Swiss law in respect of participations of members of the Board of Directors and the Group Executive Committee, as well as closely related persons, are detailed on page 310–311 of the Annual Report of Swiss Re Ltd.

18 Related parties

The Group defines the following as related parties to the Group: subsidiaries of Swiss Re Ltd, entities in which the Group has significant influence, pension plans, members of the Board of Directors (BoD) and the Group Executive Committee (EC) and their close family members, and entities which are directly and indirectly controlled by members of governing bodies of the Group and their close family members.

As part of the consolidation process, transactions between Swiss Re Ltd and subsidiaries are eliminated in consolidation and are not disclosed in the notes.

Contributions made to defined benefit pension plans and post-retirement benefit plans are disclosed in Note 15 "Benefit plans". Plan assets of the defined benefit pension plans include Swiss Re common stock of USD 3 million (0.04% of total plan assets) and USD 2 million (0.03% of total plan assets) as of 31 December 2021 and 2022, respectively.

The total number of shares, options and related instruments held by members of the BoD and the Group EC and persons closely related to, amounts to less than 1% of the shares issued by Swiss Re Ltd.

None of the members of the Board of Directors and the Group EC has any significant business connection with Swiss Re Ltd or any of its Group companies. The Board member Susan L. Wagner is also a board member of BlackRock, Inc., which provides technology and asset management services to Swiss Re. The Board member Joachim Oechslin served on an interim basis as a member of the Executive Board of Credit Suisse Group AG in 2021 and continues to serve as a Senior Advisor to Credit Suisse Group AG. Swiss Re has a business relationship with Credit Suisse. It is also a credit provider, and a named dealer under Swiss Re's Debt Issuance Programme. The Board member Philip K. Ryan was a member of the Smithsonian National Board until October 2022 and is currently a member of the Advisory Board at the Smithsonian Tropical Research Institute. In November 2022, Swiss Re has made a donation of USD 1 million to the Smithsonian American Women's History Museum. The Smithsonian National Board, the Smithsonian Tropical Research Institute and the Smithsonian American Women's History Museum are part of the Smithsonian Institution, a museum, education and research complex.

Share in earnings and dividends received from equity-accounted investees for the years ended 31 December, were as follows:

USD millions	2021	**2022**
Share in earnings of equity-accounted investees	806	–44
Dividends received from equity-accounted investees	236	214

19 Commitments and contingent liabilities

As a participant in limited and other investment partnerships, the Group commits itself to making available certain amounts of investment funding, callable by the partnerships for periods of up to ten years. The total commitments remaining uncalled as of 31 December 2022 were USD 1 962 million.

The Group has entered into various real estate construction contracts. The commitments under the contracts amount to USD 61 million over the next six years.

The Group enters into a number of contracts in the ordinary course of re/insurance and financial services business which, if the Group's credit rating and/or defined statutory measures decline to certain levels, would require the Group to post collateral or obtain guarantees. The contracts typically provide alternatives for recapture of the associated business.

Legal proceedings
In the normal course of business operations, the Group is involved in various claims, lawsuits and regulatory matters. In the opinion of management, the resolution of these matters is not expected to have a material adverse effect on the Group's business, consolidated financial position, results of operations or cash flows.

20 Significant subsidiaries and equity investees

		Share capital (millions)	Affiliation in % as of 31.12.2022	Method of consolidation
Europe				
Germany				
Swiss Re Germany GmbH, Munich	EUR	45	100	f
Jersey				
Swiss Re Finance Holdings (Jersey) Limited, St Helier	GBP	0.0001	100	f
Swiss Re Finance Midco (Jersey) Limited, St Helier	GBP	0.000002	100	f
Liechtenstein				
Elips Versicherungen AG, Vaduz	EUR	4	100	f
Luxembourg				
iptiQ Life S.A., Luxembourg	EUR	6	100	f
Swiss Pillar Investments Europe SARL, Luxembourg	EUR	0.01	100	f
Swiss Re Europe Holdings S.A., Luxembourg	EUR	105	100	f
Swiss Re Europe S.A., Luxembourg	EUR	350	100	f
Swiss Re Finance (Luxembourg) S.A., Luxembourg	EUR	0.2	100	f
Swiss Re Funds (Lux) I, Senningerberg[1]	EUR	17 721	100	f
Swiss Re International SE, Luxembourg	USD	207	100	f
Ares ECSF XI (S) Holdings S.À R.L., Luxembourg	EUR	310	100	f
iptiQ EMEA P&C S.A., Luxembourg	EUR	6	100	f
Swiss Re Capital Markets Europe S.A., Luxembourg	EUR	1	100	f
Netherlands				
Swiss Re Life Capital EMEA Holding B.V., Hoofddorp	EUR	0.0001	100	f
iptiQ EMEA P&C Holding B.V., Hoofddorp	EUR	0.0001	100	f
Switzerland				
Swiss Pillar Investments AG (Swiss Pillar Investments Ltd), Zurich	CHF	0.1	100	f
Swiss Re Direct Investments Company Ltd, Zurich	CHF	0.1	100	f
Swiss Re Investments Company Ltd, Zurich	CHF	0.1	100	f
Swiss Re Investments Ltd, Zurich	CHF	1	100	f
iptiQ Group Holding Ltd, Zurich	CHF	0.1	100	f
Swiss Re Nexus Reinsurance Company Ltd, Zurich	CHF	10	100	f
Swiss Re Management Ltd, Adliswil	CHF	0.1	100	f
Swiss Re Principal Investments Company Ltd, Zurich	CHF	0.1	100	f
Swiss Re Reinsurance Holding Company Ltd, Zurich	CHF	0.1	100	f
Swiss Reinsurance Company Ltd, Zurich	CHF	34	100	f
Swiss Re Investments Holding Company Ltd, Zurich	CHF	0.1	100	f
Swiss Re Corporate Solutions Holding Company Ltd, Zurich	CHF	0.1	100	f
United Kingdom				
Swiss Re Finance (UK) Plc, London	GBP	1	100	f
Swiss Re Services Limited, London	GBP	2	100	f

[1] Net asset value instead of share capital.

		Share capital (millions)	Affiliation in % as of 31.12.2022	Method of consolidation
Americas and Caribbean				
Brazil				
Swiss Re Brasil Resseguros S.A., Sao Paulo	BRL	472	100	f
Swiss Re Corporate Solutions Brasil Seguros S.A., Sao Paulo	BRL	318	60	f
Cayman Islands				
SRE HL PE 1 LP, George Town	EUR	395	99.8	f
SREH HL PE 1 LP, George Town	EUR	567	99.8	f
SRZ HL PE 1 LP, George Town	USD	441	99.8	f
Swiss Pillar Investments UK Limited, George Town	GBP	0.1	100	f
Ares European Credit Strategies Fund XI (S), L.P., George Town	EUR	314	100	f
Colombia				
Compañía Aseguradora de Fianzas S.A. Confianza, Bogota	COP	234 202	51	f
United States				
Swiss Re Corporate Solutions Capacity Insurance Corporation, Jefferson City	USD	5	100	f
iptiQ Americas Inc., Wilmington	USD	0.0001	100	f
Lumico Life Insurance Company, Jefferson City	USD	0	100	f
North American Capacity Insurance Company, Manchester	USD	4	100	f
Swiss Re Corporate Solutions Elite Insurance Corporation, Kansas City	USD	4	100	f
Swiss Re Corporate Solutions America Insurance Corporation, Kansas City	USD	5	100	f
Pillar RE Holdings LLC, Wilmington	USD	0.001	100	f
SR Corporate Solutions America Holding Corporation, Wilmington	USD	0.00001	100	f
SRE HL PE 1 (Master) LP, Wilmington	EUR	393	99.8	f
SREH HL PE 1 (Master) LP, Wilmington	EUR	564	99.8	f
SRZ HL PE 1 (Master) LP, Wilmington	USD	439	99.8	f
Swiss Re America Holding Corporation, Wilmington	USD	0.1	100	f
Swiss Re Corporate Solutions Global Markets Inc., Wilmington	USD	0	100	f
Swiss Re Financial Markets Corporation, Wilmington	USD	0	100	f
Swiss Re Financial Products Corporation, Wilmington	USD	0.00001	100	f
Swiss Re Life & Health America Holding Company, Wilmington	USD	0.001	100	f
Swiss Re Life & Health America Inc., Jefferson City	USD	4	100	f
Swiss Re Management (US) Corporation, Wilmington	USD	0.0001	100	f
Swiss Re Property & Casualty America Inc., Kansas City	USD	1	100	f
Swiss Re Treasury (US) Corporation, Wilmington	USD	0.00001	100	f
Swiss Reinsurance America Corporation, Armonk	USD	10	100	f
Swiss Re Corporate Solutions Premier Insurance Corporation, Kansas City	USD	4	100	f
Westport Insurance Corporation, Jefferson City	USD	6	100	f
Wing Re Inc., Jefferson City	USD	0.3	100	f
Wing Re II Inc., Jefferson City	USD	0.3	100	f
Elips Life Insurance Company, Jefferson City	USD	0	100	f
Bermuda				
1997 Fund Ltd, Hamilton	USD	1 000	100	f
Mexico				
Swiss Re Corporate Solutions México Seguros, S.A. de C.V., Mexico City	MXN	400	100	f

		Share capital (millions)	Affiliation in % as of 31.12.2022	Method of consolidation
Africa				
South Africa				
Swiss Re Africa Limited, Cape Town	ZAR	172	100	f
Asia-Pacific				
Australia				
Swiss Re Australia Ltd, Sydney	AUD	845	100	f
Swiss Re Life & Health Australia Limited, Sydney	AUD	980	100	f
China				
Swiss Re Corporate Solutions Insurance China Ltd, Shanghai	CNY	669	100	f
Singapore				
Swiss Re Asia Holding Pte. Ltd., Singapore	USD	0.1	100	f
Swiss Re Asia Pte. Ltd., Singapore	USD	3 002	100	f
Swiss Re Principal Investments Company Asia Pte. Ltd., Singapore	USD	0.1	100	f
India				
Swiss Re Global Business Solutions India Private Limited, Bangalore	INR	150	100	f

Significance is defined by the total assets of the subsidiaries and the carrying value of the equity investees in relation to the total assets of the Group. The threshold is set at 0.05%.

Subsidiaries with share capital of less than 1 million (local currency) have been disclosed to the nearest decimal place.

Method of consolidation

f full

e equity (no significant equity investees in 2022)

21 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.

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.

Other
The Group did not provide financial or other support to any VIEs during 2022 that it was not previously contractually required to provide.

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:

USD millions	2021	2022
Fixed income securities available-for-sale	3 362	2 006
Short-term investments	42	130
Cash and cash equivalents	77	84
Accrued investment income	29	26
Premiums and other receivables	22	64
Funds held by ceding companies	4	11
Deferred acquisition costs	7	8
Deferred tax assets	126	249
Other assets	19	20
Total assets	3 688	**2 598**
Unpaid claims and claim adjustment expenses	89	139
Unearned premiums	25	25
Funds held under reinsurance treaties	4	14
Reinsurance balances payable	24	21
Deferred and other non-current tax liabilities	109	248
Accrued expenses and other liabilities	7	6
Long-term debt	1 859	1 587
Total liabilities	2 117	**2 040**

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:

USD millions	2021	**2022**
Fixed income securities available-for-sale	1 465	1 671
Equity securities at fair value through earnings	114	64
Policy loans, mortgages and other loans	1 774	1 726
Other invested assets	3 190	3 082
Investments for unit-linked business	142	104
Total assets	6 685	**6 647**
Accrued expenses and other liabilities	35	35
Total liabilities	35	**35**

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:

			2021			**2022**
USD millions	Total assets	Total liabilities	Maximum exposure to loss[1]	Total assets	Total liabilities	Maximum exposure to loss[1]
Insurance-linked securitisations	837		855	893		987
Life and health funding vehicles	16		2 392	15		2 212
Swaps in trusts	60	35	–[2]	82	35	–[2]
Investment vehicles	3 244		3 244	3 049		3 049
Investment vehicles for unit-linked business	142			104		
Senior commercial mortgage and infrastructure loans	2 386		2 386	2 504		2 504
Total	6 685	35	–[2]	**6 647**	**35**	**–[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.

KPMG

Statutory Auditor's Report

To the General Meeting of Swiss Re Ltd, Zurich

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the consolidated financial statements of Swiss Re Ltd and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 31 December 2022, and the related consolidated income statement, statement of comprehensive income, statement of shareholders' equity, and statement of cash flows for the year then ended, and related notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements (pages 190 to 291) present fairly, in all material respects, the financial position of the Group as of 31 December 2022, and the results of its operations and its cash flows for the year then ended in accordance with U.S. generally accepted accounting principles and comply with Swiss law.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and in accordance with Swiss law and Swiss Auditing Standards (SA-CH). Our responsibilities under those provisions and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements" section of our report. We are independent of the Group, and have fulfilled our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit, which include relevant ethical requirements in the United States of America, with the provisions of Swiss law and the requirements of the Swiss audit profession.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

VALUATION OF FIXED INCOME SECURITIES

VALUATION OF LIFE AND HEALTH RESERVES

VALUATION OF PROPERTY AND CASUALTY RESERVES

VALUATION OF DEFERRED TAX ASSETS ON LOSS CARRYFORWARDS

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

VALUATION OF FIXED INCOME SECURITIES

Key Audit Matter

The Group has recorded $74,573 million of fixed income securities as of 31 December 2022. This balance is comprised of debt securities issued by governments and government agencies, corporations, and mortgage- and asset-backed securities. This amount is included in the fixed income securities line item on the consolidated balance sheet.

The determination of the fair value of these investments is based on assumptions, including credit and valuation spreads. The determination of assumptions requires subjectivity and judgment as the assumptions are based on internal estimates. The valuation of fixed income securities has been designated as a key audit matter given changes in the estimate could have a material impact on consolidated balance sheet. Auditing this balance involved an increased extent of audit effort, including the involvement of specialized skills and knowledge, due to the estimate uncertainty associated with the assumptions.

Our response

As part of our audit, we gained an understanding of the process related to the valuation of fixed income securities.

We tested the completeness, and accuracy of the data used in the fair value estimation by reconciling to source information.

We involved our valuation specialists with specialized skills and knowledge, as applicable, who assisted the audit team in:

- Assessing the pricing methodologies with reference to relevant accounting standards, and industry practice.
- Developing an independent estimate for a selection of securities, and comparison of the independent estimate to the Group's fair value estimate.

For further information on the Valuation of Fixed Income Securities refer to the following:

- Note 1
- Note 7
- Note 8

VALUATION OF LIFE AND HEALTH RESERVES

Key Audit Matter

The Group has recorded life and health reserves of $42,903 million as of 31 December 2022. Life, and health reserves are included in the life and health related unpaid claims and claim adjustment expenses, liabilities for life and health policy benefits, and policyholder account balances line items on the consolidated balance sheet (collectively, life and health reserves).

The determination or revision of assumptions requires subjectivity and judgment as these assumptions are generally not based on observable market inputs. These assumptions include mortality, morbidity, withdrawals, persistency (lapse), benefit termination rates and lag factors. Additional uncertainties related to the mortality assumption have arisen due to the on-going Coronavirus pandemic.

The valuation of life and health reserves has been designated as a key audit matter given the material nature of the balance and the significant estimation uncertainty and complexity of the mortality, morbidity,

Our response

As part of our audit, we gained an understanding of the process related to the valuation of life and health reserves. Further, we tested the design and implementation of certain key controls within the process, including the independent actuarial peer review and reserving committee level reviews.

We tested the completeness, and accuracy of the underlying policyholder contract data by reconciling to source information.

We involved our actuarial specialists with specialized skills, and knowledge, as applicable, who assisted the audit team in:

- Evaluating the methods applied to select the mortality, morbidity, persistency (lapse), benefit termination rates and lag factor assumptions by comparing them to generally accepted actuarial techniques;

withdrawals, persistency (lapse), benefit termination rates and lag factors. Auditing the estimate involved a high degree of auditor judgment and increased extent of audit effort, including the involvement of specialists with specialized skills and knowledge.	- Challenging the selected mortality, morbidity, persistency (lapse), benefit termination rates and lag factor assumptions where deviations from Group or industry experience were observed; - Recalculating the liabilities for a risk-based sample and comparing the results of the recalculations to the Group's estimates.

For further information on the Valuation of Life and Health Reserves refer to the following:

- Note 1
- Note 5

VALUATION OF PROPERTY AND CASUALTY RESERVES

Key Audit Matter

The Group has recorded property and casualty reserves of $68,290 million as of 31 December 2022. Property and casualty reserves is included in the property and casualty related unpaid claims and claim adjustment expenses line item on the consolidated balance sheet.

The determination of assumptions used to develop the estimate requires subjectivity and judgment as these assumptions are generally not based on observable market inputs. Among the most significant assumptions are the initial estimates of loss ratios, which are used to estimate liabilities in the most recent accident years. Other assumptions include but are not limited to changes in exposure, inflation trends, claims emergence trends, and other legal or regulatory decisions. Additional uncertainties related to these assumptions have arisen due to the on-going Coronavirus pandemic. This includes legal interpretations of event aggregation clauses as well as terms and conditions, risks related to claims reporting, and social inflation.

Property and casualty reserves associated with long-tail lines of business, such as Liability, Asbestos and Environmental and Motor, generally require more subjectivity, and judgment due to the length of the claim reporting period resulting in increased volatility of claims frequency, and severity trends.

The valuation of property and casualty reserves has been designated as a key audit matter given the material nature of the balance and the significant estimation uncertainty and complexity of the actuarial assumptions. Auditing the estimate involved a high degree of auditor judgment and increased extent of audit effort, including the involvement of specialists with specialized skills and knowledge.

Our response:

As part of our audit, we gained an understanding of the process related to the valuation of property and casualty reserves. Further, we tested the design, and implementation of certain key controls within the process, including the independent peer review and committee level reviews.

We tested the completeness, and accuracy of the underlying data by reconciling to source information, and validating the appropriateness of claims triangles.

We involved our actuarial specialists with specialized skills, and knowledge, as applicable, who assisted the audit team in:

- Evaluating the methods applied to select the actuarial assumptions by comparing them to generally accepted actuarial techniques;
- Evaluating the Group's estimates by performing independent calculations of property and casualty reserves for certain lines of business;
- For certain lines of business where we performed independent calculations, developing a range of reserve estimates, and assessing the position of the Group's recorded reserve relative to the range;
- Assessing the Group's internally prepared actuarial analyses in comparison to internal experience, and related industry trends for certain lines of business.

For further information on the Valuation of Property and Casualty Reserves refer to the following:

- Note 1
- Note 5

VALUATION OF DEFERRED TAX ASSETS ON LOSS CARRYFORWARDS

Key Audit Matter

The Group has recorded deferred tax assets of $8,651 million (net of a valuation allowance of $361 million) as of 31 December 2022.

The recoverability of deferred tax assets, resulting from net operating losses, and temporary differences, is based on assumptions, including future profitability and tax planning measures. The determination of assumptions requires subjectivity and judgment as the assumptions are based on internal estimates.

The valuation of deferred tax assets has been designated as a key audit matter given changes in the estimate could have a material impact on net income (through income tax expense). Auditing the estimate involved an increased extent of audit effort, including the involvement of specialized skills and knowledge, due to the estimation uncertainty associated with the assumptions.

Our response:

As part of our audit, we gained an understanding of the process related to the valuation of deferred tax assets. Further, we tested the design, and implementation of certain key controls within the process, including independent review of items for valuation and recognition.

We tested the completeness, and accuracy of the underlying data by reconciling to source information.

We involved our tax specialists with specialized skills, and knowledge, as applicable, who assisted the audit team in:

- Assessing the future profitability assumption by performing sensitivity analyses, and the feasibility of the tax planning measures.

For further information on the Valuation of Deferred Tax Assets on Loss Carryforwards refer to the following:

- Note 1
- Note 14

Board of Directors' Responsibilities for the Consolidated Financial Statements

The Board of Directors is responsible for the preparation and the fair presentation of the consolidated financial statements in accordance with U.S. generally accepted accounting principles and the provisions of Swiss law, and for the design, implementation, and maintenance of internal control as the Board of Directors determines is necessary to enable the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Group's ability to continue as a going concern for one year after the date that the consolidated financial statements are available to be issued; to disclose, as applicable, matters related to going concern; and to use the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS, Swiss Law and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error, and the risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment or economic decisions made by a reasonable user based on these consolidated financial statements.

In performing an audit in accordance with GAAS, Swiss Law and SA-CH, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Group's ability to continue as a going concern for a reasonable period of time.
- Conclude on the appropriateness of the Board of Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities withing the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit of the Group. We remain solely responsible for our audit opinion.

We are required to communicate with the Board of Directors regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters, including any significant deficiencies, that we identified during our audit.

We also provide the Board of Directors or its relevant committee with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Board of Directors or its relevant committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report, unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

KPMG

Other Information in the Annual Report

The Board of Directors is responsible for the other information included in the annual report. The other information comprises the information included in the annual report, but does not include the consolidated financial statements, the stand-alone financial statements of the company, the compensation report, and our auditor's report thereon. Our opinion on the consolidated financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether a material inconsistency exists between the other information and the consolidated financial statements, or our knowledge obtained in the audit or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report. We have nothing to report in this regard.

Report on Other Legal and Regulatory Requirements

In accordance with article 728a para. 1 item 3 CO and PS-CH 890, we confirm that an internal control system exists, which has been designed for the preparation of the consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

KPMG AG

Frank Pfaffenzeller

Dr. Frank Pfaffenzeller
Licensed Audit Expert
Auditor in charge

Eric James Elman

Eric James Elman

Zurich, 15 March 2023

Group financial years 2013–2022

USD millions	2013	2014	2015
Income statement			
Revenues			
Premiums earned	28 276	30 756	29 751
Fee income	542	506	463
Net investment income	4 735	4 992	4 236
Net realised investment gains/losses	3 325	1 059	1 220
Other revenues	24	34	44
Total revenues	36 902	37 347	35 714
Expenses			
Claims and claim adjustment expenses	−9 655	−10 577	−9 848
Life and health benefits	−9 581	−10 611	−9 080
Return credited to policyholders	−3 678	−1 541	−1 166
Acquisition costs	−4 895	−6 515	−6 419
Other operating costs and expenses	−4 268	−3 876	−3 882
Total expenses	−32 077	−33 120	−30 395
Income/loss before income tax expense/benefit	4 825	4 227	5 319
Income tax expense/benefit	−312	−658	−651
Net income/loss before attribution of non-controlling interests	4 513	3 569	4 668
Income/loss attributable to non-controlling interests	−2		−3
Net income/loss after attribution of non-controlling interests	4 511	3 569	4 665
Interest on contingent capital instruments, net of tax	−67	−69	−68
Net income/loss attributable to common shareholders	4 444	3 500	4 597
Balance sheet			
Assets			
Investments	150 075	143 987	137 810
Other assets	63 445	60 474	58 325
Assets held for sale			
Total assets	213 520	204 461	196 135
Liabilities			
Unpaid claims and claim adjustment expenses	61 484	57 954	55 518
Liabilities for life and health policy benefits	36 033	33 605	30 131
Unearned premiums	10 334	10 576	10 869
Other liabilities	57 970	53 670	55 033
Long-term debt	14 722	12 615	10 978
Liabilities held for sale			
Total liabilities	180 543	168 420	162 529
Shareholders' equity	32 952	35 930	33 517
Non-controlling interests	25	111	89
Total equity	32 977	36 041	33 606
Earnings per share in USD	12.97	10.23	13.44
Earnings per share in CHF	12.04	9.33	12.93

2016	2017	2018	2019	2020	2021	**2022**
32 691	33 119	33 875	37 974	40 321	42 467	**42 868**
540	586	586	620	449	259	**250**
4 740	4 702	5 077	5 175	3 503	3 395	**2 890**
5 787	4 048	–2 530	5 515	–972	578	**–67**
28	32	39	30	37	40	**57**
43 786	42 487	37 047	49 314	43 338	46 739	**45 998**
–12 564	–16 730	–14 855	–18 683	–19 838	–17 181	**–19 271**
–10 859	–11 083	–11 769	–13 087	–13 929	–14 992	**–14 057**
–5 099	–3 298	1 033	–4 633	1 760	–431	**–280**
–6 928	–6 977	–6 919	–7 834	–8 236	–8 228	**–7 800**
–3 964	–3 874	–3 987	–4 168	–4 185	–4 076	**–3 939**
–39 414	–41 962	–36 497	–48 405	–44 428	–44 908	**–45 347**
4 372	525	550	909	–1 090	1 831	**651**
–749	–132	–69	–140	266	–394	**–171**
3 623	393	481	769	–824	1 437	**480**
3	5	–19	–42	–54		**–8**
3 626	398	462	727	–878	1 437	**472**
–68	–67	–41				
3 558	331	421	727	–878	1 437	**472**
155 016	161 897	147 302	103 746	120 693	116 586	**101 992**
60 049	60 629	60 268	60 382	61 929	64 981	**68 684**
			74 439			
215 065	222 526	207 570	238 567	182 622	181 567	**170 676**
57 355	66 795	67 446	72 373	81 258	84 096	**85 418**
41 176	42 561	39 593	19 836	22 456	22 196	**20 925**
11 629	11 769	11 721	13 365	13 309	14 134	**14 747**
59 402	56 959	51 581	23 232	26 757	27 140	**26 525**
9 787	10 148	8 502	10 138	11 584	10 323	**10 252**
			68 586			
179 349	188 232	178 843	207 530	155 364	157 889	**157 867**
35 634	34 124	27 930	29 251	27 135	23 568	**12 699**
82	170	797	1 786	123	110	**110**
35 716	34 294	28 727	31 037	27 258	23 678	**12 809**
10.72	1.03	1.37	2.46	–3.04	4.97	**1.63**
10.55	1.02	1.34	2.46	–2.97	4.52	**1.63**

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, including the coronavirus ("COVID-19"), 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;
- 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.

This communication is not intended to be a recommendation to buy, sell or hold securities and does not constitute an offer for the sale of, or the solicitation of an offer to buy, securities in any jurisdiction, including the United States. Any such offer will only be made by means of a prospectus or offering memorandum, and in compliance with applicable securities laws.

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