ZURICH

Risk review

Annual results 2020

Zurich Insurance Group

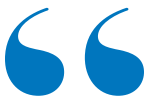
Message from our Group Chief Risk Officer

Risk management, an integral part of the solution

In 2020, we truly saw risk management at work. We navigated through a global pandemic that fundamentally impacted every part of the world: from how we live and work to the broader economic and market environment in which we and our customers operate. Zurich was able to leverage its approach to risk management and prove its resilience by remaining operationally robust and retaining a strong financial and solvency position.

We were able to quickly and seamlessly shift the majority of our operations from the office to remote home office and apply our expertise and tools, such as dynamic scenario and sensitivity analyses, to assess and pro-actively manage the potential impact of the unprecedented conditions experienced this year. The Group's focus on high-priority matters allowed us to deal with the unexpected. In our analyses, we identify plausible threat scenarios and quantify their potential impact on our businesses, solvency and financial performance. Depending on what the scenario assessments tell us, we develop, implement and monitor the actions that will give the optimal outcome for our customers, shareholders and other stakeholders.

Risk management at work.



2020 was about dealing with the unexpected.

Peter Giger
Group Chief Risk Officer

Message from our Group Chief Risk Officer

Risk management gives our business leaders the support necessary to actively take risk with the right level of information and discipline and within the Group's risk appetite and tolerance. Through our extensive and diverse experience, we are driving an inclusive culture where risk-reward trade-offs are transparent and understood, and risks are appropriately managed.

Our integrated risk management framework enables the achievement of the Group's strategy by supporting effective risk identification and assessment that help protect our capital, liquidity, earnings, and reputation.

By effectively managing our risks, we maintain our resilience and make sure we are there when our customers need us. Zurich's risk review describes our major risks and how we manage them.

Sustainability

Our well-established Total Risk Profiling™ methodology supports us in delivering risk insights and enhances Zurich's capabilities in managing risks for our customers and ourselves.

The Group's commitment to sustainability, including managing the risks posed by climate change, continues to be an integral part of Zurich's risk management approach. The Group promotes best practices by managing the interconnectivity of environmental, social and governance (ESG) risks by engaging with its customers and investees.

By making risk management a strategic priority, we can equip our people with the tools, capabilities, and skills to support changing trends and ensure professional success.

We remain resilient and deliver on the promises we have made under Zurich's data commitment. In determining the Group's exposure to risks resulting from digital transformation, the Group assesses risks in cyber, information technology, data security and risks arising from emerging technologies and innovation. Zurich is committed to strengthening the link between digitalization and sustainability for the Group and our customers.

Resilient financial strength in a turbulent year

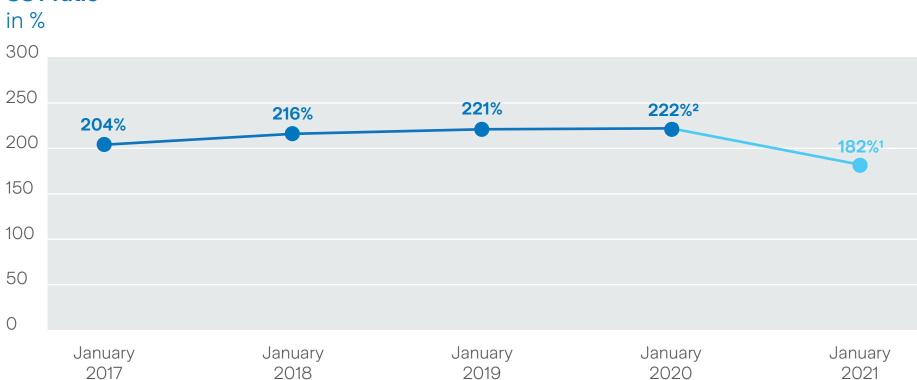
Our balance sheet remained strong throughout the year, despite facing challenges from the global health crisis and subsequent financial market turbulence. This strength reconfirms our ability to support our customers when they need us most. Swiss Solvency Test results can be found on pages ten to twelve.

Peter Giger
Group Chief Risk Officer

Development of Swiss Solvency Test ratio

The Group Swiss Solvency Test (SST) ratio decreased to 182 percent[1] as of January 1, 2021 from 222 percent [2] as of January 1, 2020. The development of the SST ratio in 2020 reflects a deteriorating economic environment, in particular lower interest rates and elevated financial market volatility.

SST ratio
in %



1 The SST results as of January 1, 2021 are estimated and may differ from the final SST results, which will be presented in the Financial Condition Report at the end of April 2021.
2 Based on Swiss Financial Supervisory Authority (FINMA) interest rate curves.

Analysis of Group total risk capital
in %, as of January 1, 2021

Risk type	%
Insurance risk	31%
Market risk, including investment credit risk	68%
Other credit risk	1%

Highlights by risk type

Insurance risk

The Group's insurance risk is diversified by geography, line of business, product and customer, supported by our centralized purchase of reinsurance which led to solid insurance outcomes in 2020 in the face of COVID-19 and natural catastrophes.

Read more:
Pages 13–19

Market risk

Despite heightened market volatility the portfolio remained within the Group tolerance and continues to be well diversified. Additional measures were taken to reduce interest rate risk across the balance sheet.

Read more:
Pages 20–26

Other credit risk

In the face of the pandemic the Group's credit risk exposures continuously remained at high credit quality.

Read more:
Pages 26–27

Operational risk

Zurich's operational risk management approach enables the Group to focus on high-priority matters under demanding circumstances.

Read more:
Page 28

Risk review

Contents

Risk management	**5**
Objectives of risk management	5
Risk management framework	5
Risk governance and risk management organization	7
Capital management	**8**
Objectives of capital management	8
Capital management framework	8
Capital management program	8
Risk and solvency assessment	**9**
Regulatory capital adequacy	9
Regulatory solvency regimes	9
Swiss Solvency Test ratio	10
Insurance financial strength rating	12
Analysis by risk type	**13**
Insurance risk	13
Market risk, including investment credit risk	20
Other credit risk	26
Operational risk	28
Liquidity risk	29
Strategic risk and risks to the Group's reputation	30
Sustainability risk	30
Digital and resilience risk	31
Disclaimer and cautionary statement	**33**

The risk review information marked 'audited' is an integral part of the consolidated financial statements.

Risk review (continued)

Audited

This 'audited' symbol indicates that the information contained within the shaded panel is audited and forms an integral part of the consolidated financial statements.

Audited

Risk management

Objectives of risk management

Taking and managing risk is an integral part of the insurance business. Zurich takes and manages risks in an informed and disciplined manner and within a pre-determined risk appetite and tolerance.

The major risk management objectives at Zurich Insurance Group (Zurich, or the Group) are to:

- Support achievement of the Group's strategy and protect capital, liquidity, earnings and reputation by monitoring that risks are taken within the Group's risk tolerance
- Enhance value creation by embedding disciplined risk-taking in the company culture and contributing to an optimal risk-return profile where risk-reward trade-offs are transparent, understood, and risks are appropriately rewarded
- Efficiently and effectively diversify risk and avoid or mitigate unrewarded risks
- Encourage openness and transparency to enable effective risk management
- Support decision-making processes by providing consistent, reliable and timely risk information
- Protect Zurich's reputation and brand by promoting a sound culture of risk awareness, and disciplined and informed risk-taking

Risk management framework

The risk management framework is based on a governance process that sets forth clear responsibilities for taking, managing, monitoring and reporting risks.

The Zurich Risk Policy is the Group's main risk governance document. It sets standards for effective risk management throughout the Group. The policy describes the Group's risk management framework, provides a standardized set of risk types and defines the Group's appetite for risks at Group level. Risk-specific policy manuals provide guidelines and procedures to implement the principles in the Zurich Risk Policy. Ongoing assessments verify that requirements are met.

The Group regularly reports on its risk profile at local and Group levels. The Group has procedures to refer risk topics to senior management and the Board of Directors in a timely manner. To foster transparency about risk, the Board receives quarterly risk reports and risk updates. In 2020, additional dynamic reporting of COVID-19 risk scenarios took place.

The Group identifies, assesses, manages, monitors and reports risks that have an impact on the achievement of its strategic objectives by applying its proprietary Total Risk Profiling™ methodology. The methodology allows Zurich to assess risks in terms of severity and probability and supports the definition and implementation of mitigating actions. At Group level, this is an annual process, followed by regular reviews and updates by management.

Risk review (continued)

Audited

The Group's risk appetite and tolerance reflects Zurich's willingness and capacity to take risks in pursuit of value creation and sets boundaries within which the businesses act. Zurich protects its capital, liquidity, earnings and reputation by monitoring that risks are taken within agreed risk appetite levels and tolerance limits. The Group regularly assesses and, to the extent possible, quantifies material risks to which it is exposed.

Starting as of 2020, the Group's solvency position will be disclosed on the basis of the Swiss Solvency Test (SST) ratio to be more aligned with reporting by the Group's Swiss and European peers. The Group's SST internal model has been fully approved by the Swiss Financial Supervisory Authority (FINMA). Zurich's goal is to maintain capital consistent with a 'AA' financial strength rating for the Group, which translates into an SST ratio target of 160 percent or above.

The Group continues to apply the Zurich Economic Capital Model (Z-ECM) as an internal metric. Z-ECM provides a key input into the Group's planning process as an assessment of the Group's economic risk profile.

Risk-based remuneration

Based on the Group's remuneration rules, the Board of Directors designs and structures remuneration arrangements that support the achievement of strategic and financial objectives and do not encourage inappropriate risk-taking. Group Risk Management's role in respect to remuneration and its interaction with Board committees is described in the remuneration report.

Risk review (continued)

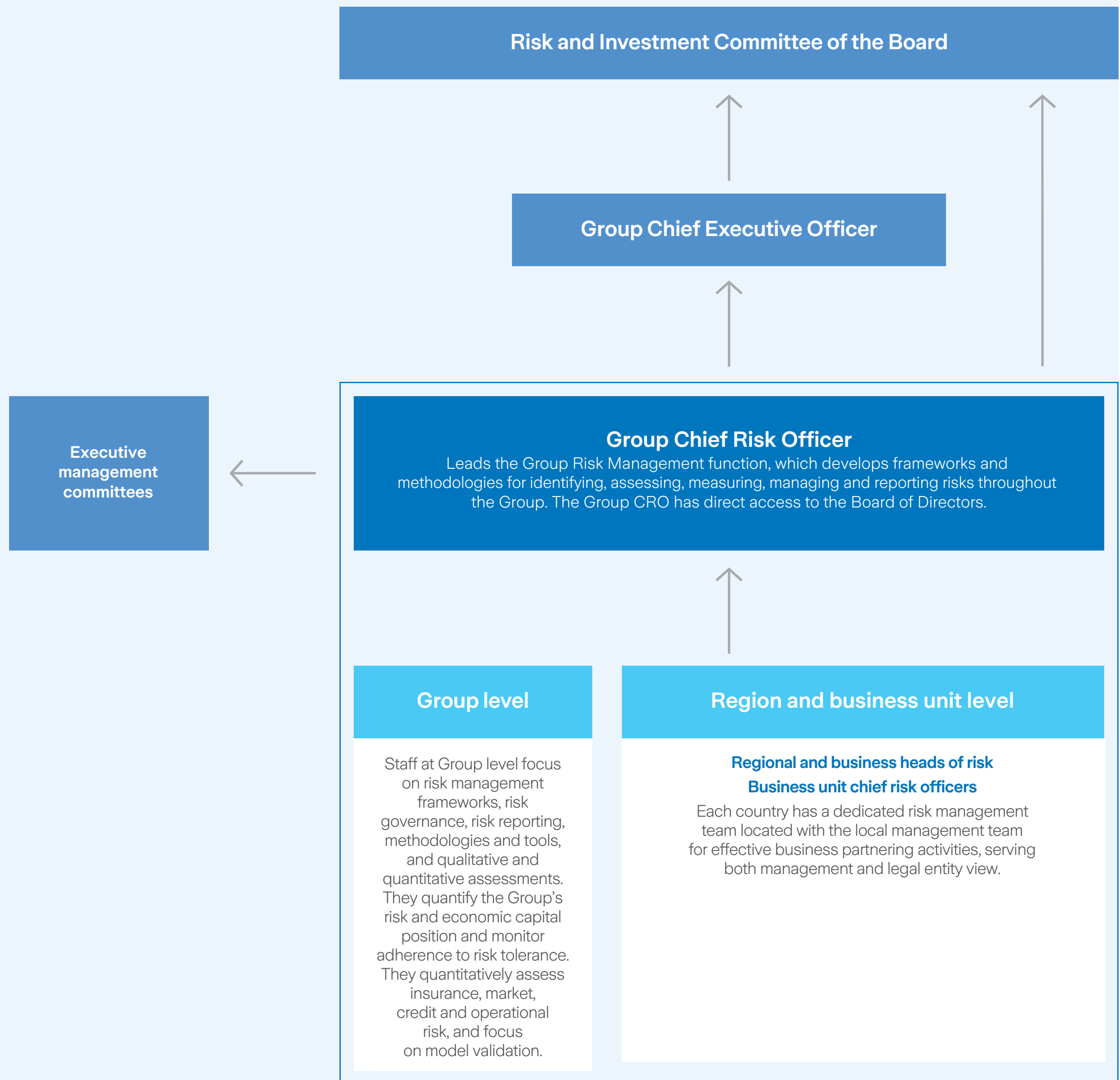
Audited

Risk governance and risk management organization

For information on the Group's overall governance, including the Board of Directors and Group executive level, see the corporate governance report (unaudited).

Risk management organization

The Group Risk Management function is a global function, led by the Group Chief Risk Officer (CRO).



The risk function is independent of the business by being a vertically integrated function where, unless otherwise required by local laws or regulations, global risk employees report directly into the Group CRO, except for Farmers' Chief Risk Officer who has a matrix reporting line to the Group CRO. Risk officers are embedded in the business, positioning them to support and advise on, and independently challenge, business decisions from a risk perspective. As business advisers on risk matters, the risk officers, equipped with technical risk skills as well as business skills, help foster a risk-aware culture in the business.

Risk review (continued)

Audited

Capital management

Objectives of capital management

The Group manages capital to maximize long-term value while maintaining financial strength within its 'AA' target range, and meeting regulatory, solvency and rating agency requirements.

As of December 31, 2020, International Financial Reporting Standards (IFRS) shareholders' equity of USD 38.3 billion and subordinated debt of USD 8.3 billion were part of the capital available in the Group's SST available financial resources (AFR). Further adjustments usually include items such as intangible assets, deferred tax assets and liabilities, allowing for discounting of liabilities and the value of in-force business, and market-consistent valuation of external debt according to the methodology under SST.

Zurich strives to simplify the Group's legal entity structure to reduce complexity and increase fungibility of capital.

Capital management framework

The Group's capital management framework forms the basis for actively managing capital within Zurich. The Group uses a number of different capital models, taking into account economic, regulatory, and rating agency constraints. The Group's capital and solvency position is monitored and regularly reported to the Executive Committee (ExCo) and Board of Directors.

Zurich's policy is to allocate capital to businesses earning the highest risk-adjusted returns, and to pool risks and capital as much as possible to operationalize its risk diversification.

The Group's executive management determines the capital management strategy and sets the principles, standards and policies to execute the strategy. Group Treasury and Capital Management executes the strategy.

Capital management program

The Group's capital management program comprises various actions to optimize shareholders' total return and to meet capital needs, while enabling Zurich to take advantage of growth opportunities. Such actions include paying and receiving dividends, capital repayments, share buy-backs, issuance of shares, issuance of senior and hybrid debt, securitization and purchase of reinsurance.

The Group seeks to maintain a balance between higher returns for shareholders on equity held and the security that a sound capital position provides, also for our customers. Dividends, share buy-backs, and issuances and redemption of debt have a significant influence on capital levels. In 2020, the Group paid a dividend out of retained earnings, issued shares out of contingent capital to fund vesting of shares in 2020, bought own shares to reduce future dilution from share-based employee plans and issued senior and hybrid debt to finance redemptions and investments in the Group's development.

The Swiss Code of Obligations stipulates that dividends may only be paid out of freely distributable reserves or retained earnings. Apart from what is specified by the Swiss Code of Obligations, Zurich Insurance Group Ltd faces no legal restrictions on dividends it may pay to its shareholders. As of December 31, 2020, the amount of the statutory general legal reserve was more than 40 times the paid-in share capital. The ability of the Group's subsidiaries to pay dividends may be restricted or indirectly influenced by minimum capital and solvency requirements imposed by insurance and other regulators in the countries in which the subsidiaries operate. Other limitations or considerations include foreign exchange control restrictions in some countries, and rating agencies' methodologies.

For details on issuances and redemptions of debt, see note 18 of the consolidated financial statements.

For details on the share buy-back program, see note 19 of the consolidated financial statements.

Audited

Risk and solvency assessment

Regulatory capital adequacy

The Group endeavors to manage its capital so that its regulated entities meet local regulatory capital requirements. In each country in which the Group operates, the local regulator specifies the minimum amount and type of capital that each of the regulated entities must hold in addition to their liabilities. In addition to the minimum capital required to comply with the solvency requirements, the Group aims to hold an adequate buffer under local solvency requirements to ensure regulated subsidiaries can absorb a level of volatility and meet local capital requirements.

Regulatory solvency regimes

Regulatory requirements in Switzerland

The Swiss Solvency Test (SST) adopts a risk-based and total balance sheet approach. Insurance companies are required to provide a market-consistent assessment of the value of their assets and liabilities. Possible changes to these balance sheet positions are modelled over a one-year period to arrive at the total required capital.

Under the SST, insurance companies and insurance groups can apply to use company-specific internal models to calculate risk-bearing and target capital, as well as the SST ratio. The SST ratio must be calculated as per January 1 and submitted to the Swiss Financial Market Supervisory Authority (FINMA). Zurich filed with FINMA an SST ratio of 198 percent (unaudited) as of January 1, 2020.

In 2020, Zurich applied for the use of the FINMA interest rate curves. FINMA agreed to the use of standard yield curves for the main currencies to calculate the SST, starting end of Q1 2020. The ratio as of January 1, 2020 has been re-calculated on the same basis for disclosure purposes in order to allow better comparison. The SST ratio as of January 1, 2020, based on the FINMA interest rate curves, is 222 percent (unaudited). Zurich met the regulatory solvency requirements in Switzerland throughout 2020.

The estimated SST ratio as of January 1, 2021 stands at 182 percent (unaudited). The final SST ratio as of January 1 will be filed with FINMA by the end of April 2021 and is subject to review by FINMA.

Regulatory requirements in the European Economic Area (EEA)

The main regulatory framework governing the Group's subsidiaries in the EEA is Solvency II. This is a risk-based capital framework which covers capital requirements (pillar 1), governance and risk management (pillar 2) and reporting (pillar 3). All EEA-based legal entities of the Group use the Solvency II standard formula for their pillar 1 requirements with the exception of Zurich Insurance plc (Ireland) that applies an approved internal model.

Regulatory requirements in the UK

The United Kingdom left the EU and the EEA on January 31, 2020 and the transition period ended on December 31, 2020, meaning that UK regulations can diverge from Solvency II regulatory requirements.

Regulatory requirements in the U.S.

In the U.S., required capital is determined to be 'company action level risk-based capital' calculated using the National Association of Insurance Commissioners' risk-based capital model. This method, which builds on statutory accounts, measures the minimum amount of the capital for an insurance company to support its overall business operations by taking into account its size and risk profile.

Regulatory requirements in other jurisdictions

Every country has a capital standard for insurance companies. Several jurisdictions (e.g., Brazil and Mexico) have implemented approaches similar to Solvency II.

Risk review (continued)

Swiss Solvency Test ratio

The SST ratio is calculated as Group's SST available financial resources (AFR) minus market value margin (MVM) divided by the net of SST target capital (TC) and MVM. Market value margin, also known as risk margin, is the cost of future regulatory risk capital stemming from the present portfolio of assets and liabilities. Throughout the document, the January 1, 2020 Group SST ratio and its components are shown based on the updated SST model, which is based on FINMA interest rate curves.

In 2020, the solvency of the Group remained strong with an estimated SST ratio of 182 percent as of January 1, 2021, above the Group's SST ratio target of 160 percent. The main drivers of the Group's SST ratio reduction in 2020 were falling interest rates and higher market volatility as a result of the COVID-19 pandemic.

SST available financial resources

The Group's AFR are derived from the SST net asset value (NAV). The NAV represents the difference between the market-consistent value of assets and liabilities according to the market-consistent valuation methodology under SST.

During 2020, the Group's AFR increased by USD 3.8 billion to USD 52.1 billion as of January 1, 2021, compared to USD 48.3 billion as of January 1, 2020. The main drivers of the AFR increase in 2020 were the depreciation of U.S. dollar, positive equity market development, new net issuance of subordinated debt eligible as capital and Life model updates.

SST target capital

The Group uses an internal risk model to determine the required TC.

The Group's TC as of January 1, 2021 amounted to USD 31.3 billion, an increase of USD 6.7 billion compared to USD 24.6 billion as of January 1, 2020, primarily due to an increase in market risk. While equity markets and credit spreads at the end of 2020 tracked closely with year-end 2019 levels, elevated market volatility had a profound impact on the market risk.

Table 0

Group SST ratio and underlying components

in USD billions	**January 1, 2021[1]**	January 1, 2020[2]
Total risk capital	26.9	21.2
Other effects on TC[3]	(1.4)	(1.7)
MVM	5.8	5.1
TC	31.3	24.6
TC minus MVM	**25.5**	**19.5**
AFR	52.1	48.3
AFR minus MVM	**46.3**	**43.2**
Group SST ratio	**182%**	**222%**

1 The SST results as of January 1, 2021 are estimated and may differ from the final SST results, which will be presented in the Financial Condition Report at the end of April 2021.
2 Based on FINMA interest rate curves.
3 Other effects are expected business development over the forecasting horizon, additional business costs and FINMA requirements.

Risk review (continued)

Total risk capital by risk type

The chart below shows the total risk capital, split by risk type, as of January 1, 2021 and as of January 1, 2020. As of January 1, 2021, the largest components of total risk are market risk and premium & reserve risk, comprising 68 percent and 14 percent of the total risk capital, respectively.

The increase in total risk capital as of January 1, 2021 compared to January 1, 2020, reflects an increase in market risk, mainly as a result of a falling interest rate environment, U.S. dollar depreciation against major currencies, and elevated market volatilities. Other risk types saw smaller movements as of January 1, 2021 compared to January 1, 2020, predominantly impacted by the changes in the economic environment.

Total risk capital, split by risk type

January 1, 2021
in %

Risk type	%
Market risk	68%
Premium & reserve risk	14%
Business risk	9%
Life insurance risk	4%
Natural catastrophe risk	4%
Other credit risk	1%

January 1, 2020
in %

Risk type	%
Market risk	62%
Premium & reserve risk	17%
Business risk	10%
Life insurance risk	5%
Natural catastrophe risk	5%
Other credit risk	1%

Sensitivity and scenario analysis

The Group evaluates sensitivities to, and stress scenarios on, the SST ratio, and assesses results relative to Zurich's risk appetite and tolerance. The sensitivities and stress scenarios in the chart below capture two key risks to the Group: market risk and insurance risk.

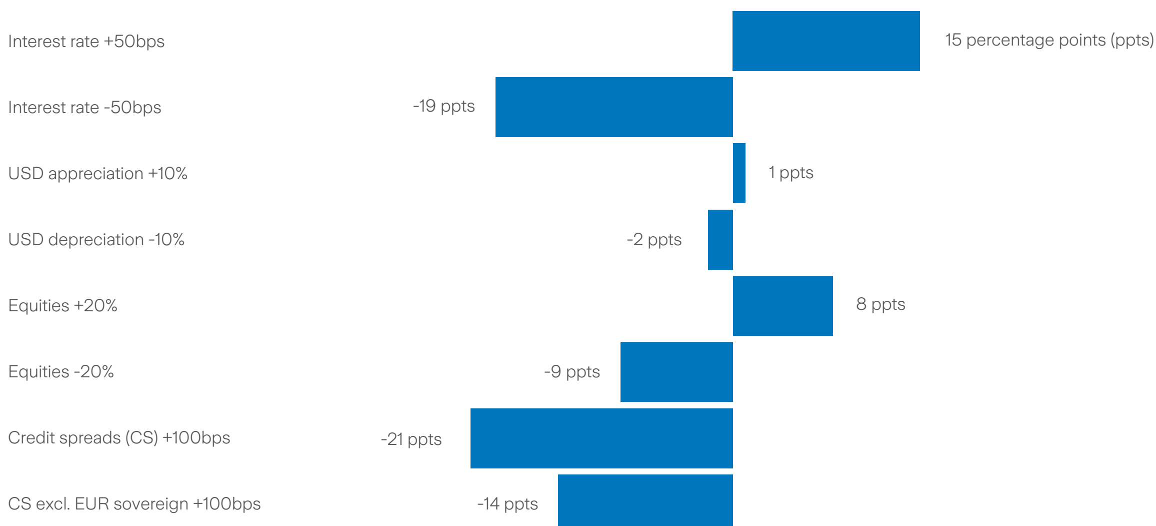
Market risk sensitivities show the estimated impact on the Group's SST ratio of a half-percentage-point (50 basis points or bps) increase or decrease in yield curves, a 10 percent appreciation or depreciation in the U.S. dollar, a 20 percent rise or decline in all stock markets, and a 100 bps increase in credit spreads, with and without euro-denominated sovereign bonds. The sensitivities are considered as separate but instantaneous shocks. They are a best estimate and non-linear, for example, a change to the size of the market movement could result in disproportionally higher (or lower) impact on the SST ratio depending on the prevailing market conditions at the time.

For insurance risk, the chart shows the three largest natural catastrophe events to which the Group is exposed. Insurance risk scenarios are defined as events that have a small probability of occurring but could, if realized, negatively affect the Group's AFR. The impact of insurance-specific scenarios on the target capital is not taken into account.

Risk review (continued)

SST sensitivities and scenarios
as of October 1, 2020

Impact on the SST ratio from sensitivities to financial market conditions:[1]



Impact on the SST ratio due to property and casualty risk-specific scenarios:[2]

1 Sensitivities are best estimate and reflect the impact on the pension plans in the UK. For the interest rate sensitivities, shocks are applied to the liquid and non-liquid part of the yield curve. Credit spreads (CS) include mortgages, including and excluding euro sovereign spreads. CS sensitivities include changes to the volatility adjustment applied to the interest rates curves.
2 The insurance risk-specific scenarios relate to natural catastrophe events that are estimated on a modeled 250-year net aggregate loss (equivalent to a 99.6 percent probability of non-exceedance).

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Insurance financial strength rating

The Group has interactive relationships with three global rating agencies: S&P Global Ratings, Moody's, and AM Best. The insurance financial strength rating (IFSR) of the Group's main operating entity, Zurich Insurance Company Ltd, is an important element of Zurich's competitive position, while the Group's credit ratings also affect the cost of debt capital.

The insurance financial strength ratings remained unchanged in 2020 despite the impact of COVID-19 on earnings, balance sheet and capital. The three rating agencies affirmed the Group's IFSR, with S&P maintaining its "positive" outlook on the rating, based on their view of the Group's solid solvency position, strong competitive position, diversified sources of earnings and limited net underwriting losses related to COVID-19.

The planned acquisition by Zurich's subsidiary Farmers Group, Inc (FGI) and Farmers Exchanges of the U.S. Property & Casualty division of MetLife and its financing was seen as a credit positive for Zurich Group by Moody's and further supported the Group's positive outlook by S&P. The agencies consider that the acquisition will increase the contribution of Farmers Management fees to the profits, while the Group maintains a strong capitalization and high financial flexibility.

As of December 31, 2020, the IFSR of Zurich Insurance Company Ltd, the main operating entity of the Group, was 'AA–/Positive' by S&P Global Ratings, 'Aa3/Stable' by Moody's, and 'A+ (Superior)/Stable' by AM Best.

Risk review (continued)

Audited

Analysis by risk type

Insurance risk

Insurance risk is the inherent uncertainty regarding the occurrence, amount or timing of insurance cash flows. The profitability of insurance business is also susceptible to business risk in the form of unexpected changes in expenses, policyholders' behavior, and fluctuations in new business volumes. Zurich manages insurance risk through:

- Specific underwriting and claims standards and controls
- Robust reserving processes
- External reinsurance

Property and casualty insurance risk

Property and casualty insurance risk arises from coverage provided for motor, property, liability, special lines and worker injury. It comprises premium and reserve risk, catastrophe risk, and business risk. Premium and reserve risk covers uncertainties in the frequency of the occurrence of the insured events as well as in the severity of the resulting claims. Catastrophe risk predominantly relates to uncertainty around natural catastrophes. Business risk for property and casualty predominantly relates to unexpected increases in the expenses relating to claims handling, underwriting, and administration.

Management of Property & Casualty business insurance risk

The Group's underwriting strategy takes advantage of the diversification of Property & Casualty (P&C) risks across lines of business, customers and geographic regions. Zurich defines Group-wide governance for insurance risk including for new products. Underwriting discipline is a fundamental part of managing insurance risk. The Group sets limits on underwriting capacity and delegates authority to individuals based on their specific expertise and sets appropriate underwriting and pricing guidelines. Technical reviews assure that underwriters perform within authorities and adhere to underwriting policies.

Property & Casualty insurance reserves are regularly estimated, reviewed and monitored by qualified and experienced actuaries at local, regional and Group levels. To arrive at their reserve estimates, the actuaries take into consideration, among other things, the latest available facts, trends and patterns of loss payments. Inflation is monitored with insights feeding into actuarial reserving models and Zurich's underwriting processes and pricing.

To ensure a common understanding of business insights and new trends for reserve analysis, financial plans, underwriting and pricing decisions, the Group has established a culture of continuous cross-functional collaboration. For this, underwriting, actuarial (pricing and reserving), claims, finance, sales and distribution, risk engineering and risk management contribute to quarterly meetings at local and Group level.

Zurich's Emerging Risk Committee, with cross-functional expertise from core insurance functions such as underwriting, claims and risk management, identifies, assesses and recommends actions for emerging risks.

Governance is in place to ensure appropriate focus on top-line targets and profitability. Reinsurance is deployed to help manage insurance risk. Group Risk Management also provides independent assurance through risk reviews.

The Group is exposed to losses that could arise from natural and man-made catastrophes. The main concentrations of risks arising from such potential catastrophes are regularly reported to executive management. The most important peril regions for natural catastrophes continue to be U.S. and Caribbean hurricane, California earthquake and Europe wind.

Risk review (continued)

Audited

Natural catastrophes

The Group uses third-party models (adjusted to Zurich's view) to manage its underwriting, ensure accumulations stay within intended exposure limits and assess the capital requirement due to natural catastrophes. Consistent with this view on natural catastrophes, Zurich performs profitability assessments and strategic capacity allocations, and chooses the type and quantity of reinsurance it buys.

To ensure global consistency, exposures to natural catastrophes are modeled in a dedicated Group function. Potential losses from property policies with material exposure in hazard-prone geographical areas and from worker injury policies with material exposure in U.S. seismic zones are probabilistically modeled. Losses for other lines of business are estimated based on adjustments to these modeled results. Risk modeling mainly addresses weather-induced perils such as wind, flood, tornado, and hail, and geological-induced perils such as earthquake.

Zurich regularly reviews and expands the scope and sophistication of its modeling and strives to improve data quality. Zurich has invested in expanding its catastrophe research and development capabilities to increase the focus on the risks from a changing climate, communicable diseases, and an increasing reliance on information and communications technology.

Zurich supplements internal know-how with external knowledge (e.g., the Advisory Council for Catastrophes) and is a shareholder of PERILS AG, Switzerland, a catastrophe exposure and loss data aggregation and estimation firm. Zurich is also a member of the open-source initiative Oasis Loss Modelling Framework.

COVID-19 pandemic

In 2020, scenario modeling capabilities for the COVID-19 pandemic were developed and refined based on claims data. The scope in terms of lines of business includes primarily property, travel, accident and health, and credit and surety. The scenario modeling helped to inform the Group about the financial impact of COVID-19 and understand the main sensitivities. The data and risk insights gained from COVID-19 were used to build a model to better assess the risk in the P&C portfolio from pandemics.

Man-made catastrophes

Man-made catastrophes include events such as industrial accidents, terrorism and cyber attacks.

For terrorism, worker injury and property risk exposures are analyzed to identify areas with significant risk concentration. Other lines of business are assessed, although the potential exposure is not as significant. A vendor-provided catastrophe model is used to evaluate potential exposures in every major U.S. city. The Group's analysis for the P&C business has shown that its exposures outside of North America are lower, in a large part due to government-provided pools. Outside the modeled areas, exposure concentrations are identified in Zurich's Risk Exposure Data Store (REDS). Exposure concentrations for location-based man-made scenarios, other than terrorism, are also identified in REDS, for example, industrial explosions at global ports.

The Group uses third-party models to manage its underwriting and accumulations for cyber and casualty catastrophe risks. The Group actively monitors and manages its cyber exposure and continues to refine products to ensure their appropriateness. Improving modeling capabilities and data capture for cyber and casualty catastrophe risks are key focus areas.

Concentration of Property & Casualty business insurance risk

The Group defines concentration risk in the P&C business as the risk of exposure to increased losses associated with inadequately diversified portfolios. Concentration risk for a property and casualty insurer may arise due to a concentration of business written within a geographical area or of underlying risks covered.

Tables 1.a and 1.b show the Group's concentration of risk within the P&C business by region and line of business based on direct written premiums before reinsurance. P&C premiums ceded to reinsurers (including retrocessions) amounted to USD 8.6 billion and USD 7.8 billion for the years ended December 31, 2020 and 2019, respectively. Reinsurance programs are managed on a global basis, and therefore, the net premium after reinsurance is monitored on an aggregated basis.

Risk review (continued)

Audited

Property & Casualty business – Direct written premiums and policy fees by line of business – current period

Table 1.a

in USD millions, for the year ended December 31, 2020	Motor	Property	Liability	Special lines	Worker injury	Total
Europe, Middle East & Africa	4,162	4,842	2,278	2,154	344	13,781
North America	1,565	5,933	2,914	2,276	2,496	15,185
Other regions	1,683	1,462	420	1,256	141	4,961
Total	**7,409**	**12,237**	**5,612**	**5,686**	**2,981**	**33,926**

Property & Casualty business – Direct written premiums and policy fees by line of business – prior period

Table 1.b

in USD millions, for the year ended December 31, 2019	Motor	Property	Liability	Special lines	Worker injury	Total
Europe, Middle East & Africa	4,050	4,328	2,005	2,009	329	12,722
North America	1,499	5,126	2,719	2,361	2,684	14,389
Other regions	1,673	1,573	386	1,865	144	5,641
Total	**7,222**	**11,027**	**5,110**	**6,236**	**3,158**	**32,752**

Analysis of sensitivities for Property & Casualty business risks

Tables 2.a and 2.b show the sensitivity of net income before tax and the sensitivity of net assets, using the Group effective income tax rate, as a result of adverse development in the net loss ratio by one percentage point. The sensitivities do not indicate a probability of such an event and do not consider any non-linear effects of reinsurance. Based on the assumptions applied in the sensitivity analysis in tables 2.a and 2.b, each additional percentage-point increase in the loss ratio would have a linear impact on net income before tax and net assets. The Group also monitors insurance risk by evaluating extreme scenarios, taking into account the non-linear effects of reinsurance contracts.

Insurance risk sensitivity for the Property & Casualty business – current period

Table 2.a

in USD millions, for the year ended December 31, 2020	Europe, Middle East & Africa	North America	Asia Pacific	Latin America	Total
+1% in net loss ratio					
Net income before tax	(123)	(98)	(24)	(18)	(264)
Net assets	(94)	(75)	(19)	(13)	(201)

Insurance risk sensitivity for the Property & Casualty business – prior period

Table 2.b

in USD millions, for the year ended December 31, 2019	Europe, Middle East & Africa	North America	Asia Pacific	Latin America	Total
+1% in net loss ratio					
Net income before tax	(115)	(96)	(24)	(22)	(256)
Net assets	(88)	(73)	(19)	(16)	(196)

Risk review (continued)

Audited

Life insurance risk

The risks associated with life insurance include:

Life liability risk

- Mortality risk – when, on average, the death incidence among policyholders is higher than expected
- Longevity risk – when, on average, annuitants live longer than expected
- Morbidity risk – when, on average, the incidence of sickness or disability among policyholders is higher or recovery rates from disability are lower than expected

Life business risk

- Policyholder behavior risk – on average, policyholders discontinue or reduce contributions, or withdraw benefits prior to the maturity of contracts at a rate that is different from expected
- Expense risk – expenses incurred in acquiring and administering policies are higher than expected
- New business risk – volumes of new business are insufficient to cover fixed acquisition expenses

Market risk

- Market risk – the risk associated with the Group's balance sheet positions where the value or cash flow depends on financial markets, which is analyzed in the 'market risk, including investment credit risk' section

Credit risk

- Credit risk – the risk associated with a loss or potential loss from counterparties failing to fulfill their financial obligations, which is analyzed in the 'market risk, including investment credit risk' and 'other credit risk' sections

Management of Life business insurance risk

The Group's Life underwriting results are based on the assumptions relating to life insurance risks. The actual experience may differ to that expected at the time of writing the business. For example, mortality could be either higher or lower than expected due to an unexpectedly harsh or benign flu season.

To understand the potential impact of experience differing from expected, Zurich uses models to perform sensitivity analyses. The impact of changing the assumptions is considered under different scenarios across the risk types and products. Changes relating to absolute level and trend development in assumptions are considered by product category. For example, Zurich looks at the impact of an increase or decrease in morbidity rates for protection products or changes in the level and trend of longevity for annuity products. These analyses assist in understanding how sensitive the business is to changes in various assumptions and where there are benefits of having a diversified portfolio of risks and products. Changes in the same assumption can have a positive impact on one product and a negative impact on another. For example, people living longer than expected may have a positive impact on policies that offer life cover, as claims are then paid later than expected, but could have a negative impact on annuity products as payments are made for longer than expected. At Zurich, the life liability risks are managed through established processes with minimum requirements described in Group policy manuals. The Group's scenario modeling for COVID-19 also included assessment of the Life insurance risks.

The Group has local product development committees and a Group-level committee to analyze potential new life products that could significantly increase or change the nature of the risks or introduce new risks. The Group regularly reviews the continued suitability and the potential risks of existing life products open to new business to ensure sustainability of the business.

Product pricing involves setting assumptions relating to life insurance risks and policyholder behavior. Local teams have responsibility for the pricing of the products in line with the experience and emerging trends observed in each market. The emerging experience is regularly monitored and compared against expected. Where permitted, premiums are adjusted for factors such as age, gender and smoker status to reflect the corresponding risks. Policy terms and conditions and disclosure requirements are designed to mitigate the risk arising from non-standard and unpredictable risks that could result in severe financial loss.

The underwriting process forms an important part of risk management and risk selection for life insurance risks. This process is supported through setting minimum standards in Group policy manuals and providing support through additional underwriting guidelines.

Risk review (continued)

Audited

Where required and appropriate, life insurance risks are also managed using reinsurance.

Unit-linked products are designed to reduce much of the market and credit risk associated with the Group's traditional business offerings. Risks that are inherent in these products are largely passed on to the policyholder, although a portion of the Group's management fees is linked to the value of funds under management, and hence is at risk if fund values decrease. Contracts may have minimum guaranteed death benefits where the sum at risk depends on the fair value of the underlying investments. Other life insurance liabilities include traditional life insurance products, such as protection and life annuity products.

Protection products (including disability products) provide benefits linked to policyholders' life and health and carry mortality, longevity and morbidity risk, as well as market and credit risk. Changes in medical treatments and lifestyle changes are among the most significant factors that could result in earlier or more claims than expected or customers claiming for longer than expected. Disability, when defined in terms of the ability to perform an occupation, could also be affected by adverse economic conditions. This impact could come through, for example, an increase in claims relating to mental health conditions triggered by an economic downturn.

In the life annuity business, the benefits are often paid to the customer either for a selected number of years or, more often, until they die. Therefore, people living longer than expected can have material impact on these policies. Medical advances and improved social conditions that lead to increased longevity are a significant insurance risk for these products. Annuitant (beneficiary) mortality assumptions include allowance for future mortality improvements. The trends in mortality improvements are monitored to ensure that changes in experience are considered. The exposure to longevity risk at a Group level is measured regularly and compared against the limit set by the Group.

The Group is exposed to risks posed by policyholder behavior and fluctuating expenses. These are mitigated by designing products that, as closely as possible, match revenue and expenses associated with the contract.

The Group is also exposed to investment and surrender risks related to bank-owned life insurance contracts sold in the U.S. These risks have reduced significantly in recent years as several have switched into less risky investment divisions. See heading 'other contracts' in note 7 of the consolidated financial statements for additional information.

Lower interest rates have led to an increase in both Life business risks and Life liability risks (especially longevity risk).

Furthermore, interest rate guarantees (with concentration in traditional, guaranteed business in Germany, Switzerland and Italy and variable annuity business in the U.S. containing minimum guaranteed death benefits) expose Zurich to financial losses that may arise as a result of adverse movements in interest rates. These guarantees are managed through a combination of asset-liability management and hedging.

The Group has a dynamic hedging strategy to reduce the investment risk associated with the closed book of variable annuitants written by its U.S. subsidiary Zurich American Life Insurance Company. This exposure has fallen substantially as a result of several policy buy-back programs since 2015.

Diversification across regions and businesses between unit-linked and other business, including protection and life annuity products, as shown in table 3 below, contributes to reducing the impacts of the risks associated with the Life business described above.

Concentration of Life business insurance risk

The Group defines concentration risk in the life business as the risk of exposure to increased losses associated with inadequately diversified portfolios of assets or obligations. Concentration risk for a life insurer may arise with respect to investments in a geographical area, economic sector, or individual issuers, or due to a concentration of business written within a geographical area, of a policy type, or of underlying risks covered.

Observing best-estimate assumptions on cash flows related to benefits of insurance contracts gives some indication of the size of the exposure to risks and the extent of risk concentration. Table 3 shows the Group's concentration of risk within Life by region and line of business based on reserves for life insurance on a net of reinsurance basis. The life insurance reserves also include policyholder surplus reserves with a loss absorbing capacity[1], predominantly in Germany in the amount of USD 12.0 billion in 2020 (2019: USD 9.4 billion) and in the UK in the amount of USD 0.6 billion in 2020 (2019: USD 0.5 billion). The Group's exposure to life insurance risks varies significantly by geographic region and line of business and may change over time. See note 8 of the consolidated financial statements for additional information on reserves for insurance contracts.

1 Policyholder surplus reserves with loss-absorbing capacity refer to funds allocated to the policyholders that can be used by the shareholders, which, under certain conditions, may require regulatory approval.

Risk review (continued)

Audited

Reserves, net of reinsurance, by region

Table 3

in USD millions, as of December 31	Unit-linked insurance contracts		Other life insurance liabilities		Total reserves	
	2020	2019	**2020**	2019	**2020**	2019
Life						
Europe, Middle East & Africa	50,476	46,919	90,470	81,372	140,945	128,291
of which:						
United Kingdom	15,934	16,371	4,018	3,786	19,952	20,157
Germany	22,016	19,001	43,235	38,511	65,251	57,512
Switzerland	936	776	18,491	17,456	19,426	18,232
Italy	4,163	2,709	6,859	5,348	11,023	8,057
Ireland	1,315	1,885	2,451	2,235	3,766	4,121
Spain	676	655	12,802	11,773	13,478	12,428
Zurich International	4,982	5,129	352	220	5,334	5,349
Rest of Europe, Middle East & Africa	453	392	2,262	2,043	2,715	2,435
North America	10,983	10,253	1,235	1,035	12,218	11,288
Asia Pacific	697	598	4,740	4,311	5,437	4,908
Latin America	13,740	15,093	5,984	5,826	19,725	20,919
Group Reinsurance	–	–	11	5	11	5
Eliminations	–	–	(15)	(12)	(15)	(12)
Subtotal	75,896	72,863	102,425	92,537	178,321	165,399
Other businesses	**5,261**	**4,821**	**10,371**	**9,940**	**15,632**	**14,761**
Total	**81,157**	**77,684**	**112,796**	**102,477**	**193,953**	**180,160**

Reinsurance for Property & Casualty and Life businesses

The Group's objective in purchasing reinsurance is to provide market-leading capacity for customers while protecting the balance sheet, supporting earnings volatility management, and achieving capital efficiency. The Group follows a centralized reinsurance purchasing strategy for both P&C and Life, and bundles programs, where appropriate, to benefit from diversification and economies of scale. In support of the Group's empowerment-based management model and to align risk-bearing capacities between the Group and individual country operations, internal reinsurance applies to all externally reinsured lines of business. In addition, to actively manage and reduce potential claims-recovery risks on facultative cessions and to support the strategy on operational excellence, the Group started to tailor specific facultative property and casualty reinsurance facilities.

The Group structures and aligns its external reinsurance protection to its capital position to achieve an optimal risk-return ratio. This includes participation in the underlying risks through self-retentions. The Group manages its central reinsurance purchasing according to these principles. The cession rate for P&C was 24.2 percent (14.4 percent excluding captives, unaudited) as of December 31, 2020 and 23.0 percent (13.5 percent excluding captives, unaudited) as of December 31, 2019. The cession rate for Life was 8.8 percent as of December 31, 2020 and 8.0 percent as of December 31, 2019.

The Group uses traditional and collateralized reinsurance markets to protect itself against extreme single events, multiple event occurrences across regions, or increased frequency of events. Specifically, to protect the Group against man-made and natural catastrophe scenarios per event, Zurich arranges an annual aggregate global cover as illustrated in the graph on the next page.

The Group participates in the underlying risks through its retention and through its co-participation in excess layers. The natural catastrophe reinsurance covers are on a loss-occurrence basis except the global aggregate catastrophe cover, which operates on an annual aggregate basis. The in-force natural catastrophe covers renew annually, with the exception of the global catastrophe cover, which renewed on January 1, 2019, for a three-year term.

In addition to these covers, the Group purchases several regional catastrophe covers, entertains a bilateral risk swap, and various line of business-specific risk treaties. These covers are reviewed continuously and are subject to change going forward.

To complement existing treaties, the Group purchases catastrophe reinsurance specific to life insurance for its exposure to natural and man-made catastrophes.

Risk review (continued)

Audited

2020 Group catastrophe reinsurance protection
in USD millions, as of December 31, 2020

1 Europe cat treaty calculated with EUR/USD exchange rate as of July 31, 2020.
2 Franchise deductible of USD 25 million, i.e., losses greater than USD 25 million count toward the erosion of the retention (annual aggregate deductible).
3 This USD 200 million cover can be used only once, either for aggregated losses or for an individual occurrence or event.

Risk review (continued)

Audited

Market risk, including investment credit risk

Market risk is the expected loss of value due to changes in financial market conditions given a certain likelihood of these changes. Risk factors include:

- Equity market prices
- Real estate market prices
- Interest rate risk
- Credit and swap spread changes
- Defaults of issuers
- Currency exchange rates

The Group manages the market risk of assets relative to liabilities on an economic total balance sheet basis. This is done to achieve the maximum risk-adjusted excess return on assets relative to the liability benchmark, while taking into account the Group's risk tolerance and local regulatory constraints.

The Group has policies and limits to manage market risk and keep its strategic asset allocation in line with its risk capacity. Zurich centrally manages certain asset classes to control aggregation of risk and provides a consistent approach to constructing portfolios and selecting external asset managers. It diversifies portfolios, investments and asset managers, and regularly measures and manages market risk exposure. The Group has set limits on concentration of investments in single issuers and certain asset classes, as well as by how much asset interest rate sensitivities can deviate from liability interest rate sensitivities. The Group regularly reviews its capacity to hold illiquid investments.

The Asset/Liability Management Investment Committee reviews and monitors the Group strategic asset allocation and tactical boundaries, and monitors Group asset/liability exposure. The Group oversees the activities of local asset/liability management investment committees and regularly assesses market risks at both Group and local business levels. The economic effect of potential extreme market moves is regularly examined and considered when setting the asset allocation.

Risk assessment reviews include the analysis of the management of interest rate risk for each major maturity bucket and adherence to the aggregate positions with risk limits. The Group applies processes to manage market risks and to analyze market risk hotspots. Actions to mitigate risks are taken, if necessary, to manage fluctuations affecting asset/liability mismatch and risk-based capital.

The Group may use derivative financial instruments to mitigate market risks arising from changes in currency exchange rates, interest rates and equity prices, from credit quality of assets, and from commitments to third parties. The Group enters into derivative financial instruments mostly for economic hedging purposes and, in limited circumstances, the instruments may also meet the definition of an effective hedge for accounting purposes.

In compliance with Swiss insurance regulation, the Group's policy prohibits speculative trading in derivatives, meaning a pattern of so-called 'in-and-out trading' activity without any reference to an underlying position. The Group addresses the risks arising from derivatives through a stringent policy that requires approval of a derivative program before transactions are initiated, and by subsequent regular monitoring by Group Risk Management of open positions and annual reviews of derivative programs.

For more information on the Group's investment result, including impairments and the treatment of selected financial instruments, see note 6 of the consolidated financial statements. For more information on derivative financial instruments and hedge accounting, see note 7 of the consolidated financial statements.

Risk review (continued)

Audited

Risk from equity securities and real estate

The Group is exposed to risks from price fluctuations on equity securities and real estate. These could affect the Group's liquidity, reported income, economic surplus and regulatory capital position. Equity risk exposure includes common stocks, including equity unit trusts, private equity, common stock portfolios backing participating-with-profit policyholder contracts, and equities held for employee benefit plans. Exposure to real estate risk includes direct holdings in property and property company shares and funds. Returns on unit-linked contracts, whether classified as insurance or investment contracts, may be exposed to risks from equity and real estate, but these risks are borne by policyholders. However, the Group is indirectly exposed to market movements from unit-linked contracts with respect to both earnings and economic capital. Market movements affect the amount of fee income earned when the fee income level is dependent on the valuation of the asset base. Therefore, the value of in-force business for unit-linked business can be negatively affected by adverse movements in equity and real estate markets.

The Group manages its risks related to equity securities and real estate as part of the overall investment risk management process, and applies limits as expressed in policies and guidelines. Specifically, Zurich limits holdings in equities, real estate and alternative investments. To realize an optimal level of risk diversification, the strategy for equities is defined through a composite of market benchmark indices. The Group has the capability and processes in place to change the exposure to key equity markets through the use of derivatives or purchase or sale of securities within a short time frame.

For additional information on equity securities and investment property, see note 6 of the consolidated financial statements.

Risk from interest rates and credit spreads

Interest rate risk is the risk of an adverse economic impact resulting from changes in interest rates, including changes in the shape of yield curves. Yield curve changes affect the value of interest rate sensitive investments and derivatives as well as the fair value of insurance liabilities. Other balance sheet items such as liability investment contracts, debt issued by the Group, commercial and residential mortgages, employee benefit plans, loans and receivables are also affected.

The Group manages credit spread risk, which describes the sensitivity of the values of assets and liabilities due to changes in the level or the volatility of credit spreads, over the risk-free interest rate yield curves. Movements of credit spreads are driven by several factors including changes in expected default probability, default losses, risk premium, liquidity and other effects.

Returns on unit-linked contracts, whether classified as insurance or investment contracts, are at the risk of the policyholder; however, the Group is exposed to fluctuations in interest rates and credit spreads insofar as they affect the amount of fee income earned if the fee income level is dependent on the valuation of the asset base.

Risk review (continued)

Audited

Analysis of market risk sensitivities for interest rate, equity and credit spread risks

Group investment sensitivities

The gross economic market risk sensitivities of the fair value of IFRS Group investments before tax as of 2020 was a negative USD 13.6 billion (negative USD 10.9 billion as of 2019) for a 100-basis-points (bps) increase in interest rate. For a 100 bps decrease in interest rate, the sensitivity was USD 16.9 billion in 2020 (USD 12.7 billion as of 2019). For a 10 percent decline in equity market, Group investments dropped in value by USD 1.3 billion in 2020 compared with USD 1.3 billion as of 2019. A 100 bps increase in credit spreads resulted in a decrease of USD 6.8 billion in 2020 compared with USD 5.7 billion as of 2019.

The following describes limitations of the Group investment sensitivities. Group sensitivities show the effects of a change of certain risk factors, while other assumptions remain unchanged. The interest rate scenarios assume a parallel shift of all interest rates in the respective currencies. They do not take into account the possibility that interest rate changes might differ by rating class; these are disclosed separately as credit spread risk sensitivities. The sensitivity analysis is based on economic assets, and not on shareholders' equity or net income as set out in the consolidated financial statements. The sensitivities only cover Group investments, not insurance or other liabilities. The equity market scenarios assume a concurrent movement of all stock markets. The sensitivity analysis does not take into account actions that might be taken to mitigate losses. Actions may involve changing the asset allocation, for example through selling and buying assets. The sensitivities do not indicate a probability of such events occurring in the future. They do not necessarily represent the Group's view of expected future market changes.

In addition to the gross sensitivities, management uses sensitivities and stress scenarios to assess the impact of market movements on the Group's net assets. For more information on sensitivities see Group economic net asset sensitivities (unaudited), below.

Group economic net asset sensitivities

The following section presents the sensitivities of Group economic net assets under SST assumptions with respect to certain standard financial market scenarios.

The net asset impact – the difference between the impact on Group investments and liabilities – represents the economic risk related to changes in market risk factors that the Group faces. Tables 4, 5 and 6 show the estimated economic market risk sensitivities of the net asset impact. Positive values represent an increase in the net assets, and values in parentheses represent a decrease. Mismatches in changes in value of assets relative to liabilities represent an economic risk to the Group.

In determining the sensitivities, investments and liabilities are fully re-valued under the given scenarios. Each instrument is re-valued separately, taking the relevant product features into account. Non-linear valuation effects, where they exist, are reflected in the calculations. The sensitivities are shown before tax. They do not include the impact of transactions within the Group.

The basis of the presentation for tables 4, 5, and 6 is an economic valuation represented by the fair value of Group investments. IFRS insurance liabilities are discounted at risk-free market rates to reflect the present value of insurance liability cash flows and other liabilities, for example, own debt. The Group uses FINMA prescribed risk-free curves for discounting and the shocks applied follow the SST conventions. In the sensitivities, own debt does not include subordinated debt, which Zurich considers available to protect policyholders in a worst-case scenario.

The basis of presentation for the Life business to financial market movements uses replicating portfolios calibrated according to the methodology and cashflow models approved by FINMA. The replicating portfolios are portfolios of assets that replicate the cash flows or present values of the life insurance liabilities under stochastic scenarios from the embedded value models. They are calibrated to match dependencies of life insurance liabilities on developments in the financial markets, in respect of interest rates, equity and property. The options and guarantees of the underlying life insurance liabilities are captured through the inclusion of options in the replicating portfolios.

Sensitivities are shown split by segment and for SST core capital net of minority interest. Rest of the business includes Farmers, Group Finance and Operations and Non-Core Businesses.

Risk review (continued)

Analysis of economic sensitivities for interest rate risk

Table 4 shows the estimated net impact before tax of a 100-basis-point (bps) increase or decrease in yield curves after consideration of hedges in place, as of December 31, 2020 and 2019.

Table 4

Economic interest rate sensitivities*

in USD millions, as of December 31	2020	2019**
100 bps increase in the interest rate yield curves		
Property & Casualty	(71)	(76)
Life	(337)	(245)
Rest of the business	(237)	(110)
SST core capital net of minority interest	(579)	(358)
100 bps decrease in the interest rate yield curves		
Property & Casualty	(115)	(136)
Life	(259)	(1,073)
Rest of the business	686	172
SST core capital net of minority interest	278	(1,080)

Analysis of economic sensitivities for equity risk

Table 5 shows the estimated net impact before tax from a 10 percent decline in stock markets, after consideration of hedges in place, as of December 31, 2020 and 2019.

Table 5

Economic equity price sensitivities*

in USD millions, as of December 31	2020	2019**
10% decline in stock markets		
Property & Casualty	(617)	(598)
Life	(668)	(522)
Rest of the business	(119)	(81)
SST core capital net of minority interest	(1,398)	(1,196)

Analysis of economic sensitivities for credit spread risk

Table 6 shows the estimated net impact before tax from a 100 basis point increase in corporate credit spreads, as of December 31, 2020 and 2019. The sensitivities apply to all fixed-income instruments, excluding government, supranational and similar debt securities. For the Life business, the loss-absorbing capacity of liabilities for losses on credit spreads are not included, as they are not modeled in the replicating portfolios.

Table 6

Economic credit spread sensitivities*

in USD millions, as of December 31	2020	2019**
100 bps increase in credit spreads		
Property & Casualty	(1,727)	(1,630)
Life	(4,502)	(3,629)
Rest of the business	(565)	(522)
SST core capital net of minority interest	(6,619)	(5,663)

* Limitations of the economic sensitivities: same limitations apply for Group investment sensitivities, except for the above sensitivities, which are based on economic net assets including liability representation; neither the impact of the UK pension plan nor the volatility adjustment on the insurance liabilities have been considered.
** 2019 figures are restated based on the SST view and FINMA prescribed curves for discounting liabilities.

Risk review (continued)

Audited

Risks from defaults of counterparties

Debt securities

The Group is exposed to credit risk from third-party counterparties where the Group holds securities issued by those entities. The default risk is controlled by Group counterparty-concentration risk limits, keeping the size of potential losses to an acceptable level.

Debt securities by rating of issuer

Table 7

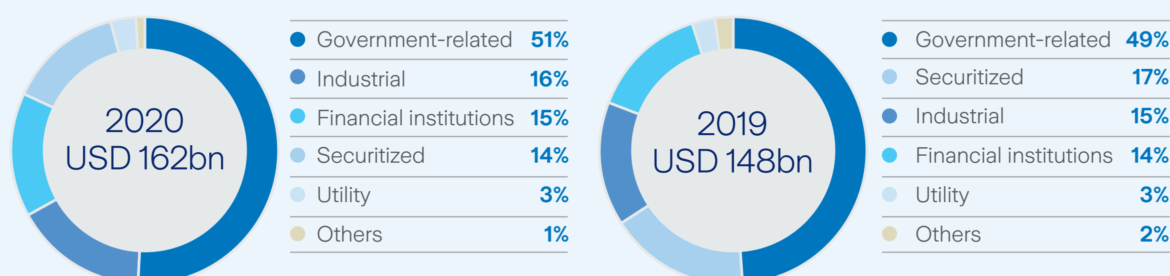
as of December 31	2020		2019	
	USD millions	**% of total**	USD millions	% of total
Rating				
AAA	36,411	22.5%	36,066	24.5%
AA	42,240	26.1%	37,062	25.1%
A	25,084	15.5%	22,812	15.5%
BBB	51,636	31.9%	44,918	30.5%
BB and below	5,802	3.6%	5,342	3.6%
Unrated	536	0.3%	1,308	0.9%
Total	**161,710**	**100.0%**	**147,507**	**100.0%**

Table 7 shows the credit risk exposure of debt securities, by credit rating. As of December 31, 2020, 96.1 percent of the Group's debt securities was investment grade and 22.5 percent was rated 'AAA.' As of December 31, 2019, 95.5 percent of debt securities was investment grade and 24.5 percent was rated 'AAA.'

Exposure level limits are in place and are based on default and recovery rates. Limits tighten progressively for lower-rated exposures. Where the Group identifies investments expected to trigger limit breaches, appropriate mitigating actions are implemented.

The risk-weighted average credit rating of the Group's debt securities portfolio is 'A–' in 2020, unchanged from 2019.

Debt securities – credit risk concentration by industry
in %, as of December 31



As of December 31, 2020, the largest concentration in the Group's debt securities portfolio was government related at 51 percent of all debt securities. In all other categories, a total of USD 29.5 billion (38 percent) was secured. As of December 31, 2019, 49 percent of the Group's debt portfolio was invested in government-related securities. In all other categories, a total of USD 30.2 billion (41 percent) was secured.

The second-largest concentration in the Group's debt securities portfolio is industrial, comprising investments mainly in consumer goods sectors, energy, transportation and capital goods.

In addition to debt exposure, the Group had loan exposures of USD 4.2 billion to the German central government or the German federal states as of December 31, 2020. The equivalent figure for December 31, 2020 was USD 4.1 billion. For more information, see the 'mortgage loans and other loans' section.

Risk review (continued)

Audited

Cash and cash equivalents

To reduce credit concentration, settlement and operational risks, the Group limits the amount of cash that can be deposited with a single counterparty. The Group also maintains an authorized list of acceptable cash counterparties.

Cash and cash equivalents amounted to USD 11.1 billion as of December 31, 2020 and USD 7.9 billion as of December 31, 2019. The risk-weighted average rating of the overall cash portfolio was 'A' as of December 31, 2020 and 'A–' as of December 31, 2019. The ten largest bank exposures represent 75 percent of the total, whose risk-weighted average rating was 'AA-' as of December 31, 2020 and 'A' as of December 31, 2019.

Mortgage loans and other loans

Mortgage loans amounted to USD 5.8 billion as of December 31, 2020 and USD 5.9 billion as of December 31, 2019. The Group's largest mortgage loan portfolios are held in Switzerland (USD 3.2 billion) and in Germany (USD 1.7 billion); these are predominantly secured against residential property but also include mortgages secured by commercial property. The Group invests in mortgages in the U.S. (USD 0.5 billion); these are mainly participations in large mortgage loans secured against commercial property.

The credit risk arising from other loans is assessed and monitored together with the debt securities portfolio. Out of the USD 8.6 billion reported loans as of December 31, 2020, 57 percent are government related, of which 85 percent are to the German central government or the German federal states. As of December 31, 2020, USD 4.1 billion were rated as 'AAA' (48 percent) compared with 4.5 billion as of December 31, 2019; USD 1.8 billion as 'AA' (21 percent) compared with 1.6 billion as of December 31, 2019; USD 1.4 billion as 'A' (16 percent) compared with 0.3 billion as of December 31, 2019; USD 1.0 billion as 'BBB' and below (12 percent) compared with 1.3 billion as of December 31, 2019; and USD 0.3 billion as unrated (3 percent) compared with 0.5 billion as of December 31, 2019.

Derivatives

The replacement value of outstanding derivatives represents a credit risk to the Group. These instruments include interest rate and cross-currency swaps, forward contracts and purchased options. A potential exposure could also arise from possible changes in replacement values. The Group regularly monitors credit risk exposures arising from derivative transactions. Outstanding positions with external counterparties are managed through an approval process embedded in derivative programs.

To limit credit risk, derivative financial instruments are executed with counterparties rated 'BBB' or higher as per Zurich's risk policy manual requirements. The Group's standard practice is to only transact derivatives with those counterparties for which the Group has in place an ISDA Master Agreement, with a Credit Support Annex. This mitigates credit exposures from over-the-counter transactions due to close-out netting and requires the counterparty to post collateral when the derivative position exceeds an agreed threshold. The Group further mitigates credit exposures from derivative transactions by using exchange-traded or centrally cleared instruments whenever possible.

Risk from currency exchange rates

Currency risk is the risk of loss resulting from changes in exchange rates. The Group operates internationally and therefore is exposed to the financial impact of changes in the exchange rates of various currencies. The Group's presentation currency is the U.S. dollar, but its assets, liabilities, income and expenses are denominated in many currencies, with significant amounts in euro, Swiss franc and British pound, and U.S. dollar. On local balance sheets a currency mismatch may cause a balance sheet's net asset value to fluctuate, either through income or directly through equity. The Group manages this risk by matching foreign currency positions on local balance sheets within prescribed limits. Residual local mismatches are reported centrally to make use of the netting effect across the Group. Zurich hedges these residual local mismatches within an established limit through a central balance sheet. For information on net gains/losses on foreign currency transactions included in the consolidated income statements, see note 1 of the consolidated financial statements. The monetary currency risk exposure on local balance sheets is considered immaterial.

Differences arise when functional currencies are translated into the Group's presentation currency, the U.S. dollar. The Group applies net investment hedge accounting to protect against the impact that changes in certain exchange rates might have on selected net investments.

Table 8 shows the total IFRS equity's sensitivity to changes in exchange rates for the main functional currencies to which the Group is exposed. Positive values represent an increase in the value of the Group's total equity. See notes 1, 3 and 7 of the consolidated financial statements for additional information on foreign currency translation and transactions.

Risk review (continued)

Audited

Sensitivity of the Group's total IFRS equity to exchange rate fluctuations

Table 8

in USD millions, as of December 31	**2020**	2019
10% increase in		
EUR/USD rate	363	382
GBP/USD rate	278	270
CHF/USD rate	599	529
BRL/USD rate	138	178
AUD/USD rate	355	308
Other currencies/USD rates	631	510

The sensitivities show the effects of a change of the exchange rates only, while other assumptions remain unchanged. The sensitivity analysis does not take into account management actions that might be taken to mitigate such changes. The sensitivities do not indicate a probability of such events occurring in the future. They do not necessarily represent Zurich's view of expected future market changes. While table 8 shows the effect of a 10 percent increase in currency exchange rates, a decrease of 10 percent would have the converse effect.

Other credit risk

Credit risk is the risk associated with a loss or potential loss from counterparties failing to fulfill their financial obligations. See section 'risks from defaults of counterparties' for market risk-related asset categories. The Group's exposure to other credit risk is derived from the following main categories of assets:

- Reinsurance assets
- Receivables

The Group's objective in managing credit risk exposures is to maintain them within parameters that reflect the Group's strategic objectives, and its risk appetite and tolerance. Sources of credit risk are assessed and monitored, and the Group has policies to manage specific risks within various subcategories of credit risk. To assess counterparty credit risk, the Group uses ratings assigned by external rating agencies, qualified third parties such as asset managers, and internal rating assessments. If external rating agencies' ratings differ, the Group generally applies the lowest, unless other indicators justify an alternative, which may be an internal credit rating.

The Group actively uses collateral to mitigate credit risks. Underlying credit risks are managed independently from the collateral. The Group has limits and quality criteria to identify acceptable letter of credit providers. Letters of credit enable Zurich to limit the risks embedded in reinsurance, captives, deductible programs, trade credit and surety.

The Group has counterparty limits, which are regularly monitored. Exposure to counterparties' parent companies and subsidiaries is aggregated to include reinsurance assets, investments, derivatives, and certain insurance products. Group aggregate concentration limits and relevant exception approvals are monitored in line with risk policy standards.

On-balance sheet exposures are the main source of credit risk. Off-balance sheet credit exposures are related primarily to certain insurance products, reinsurance and collateral used to protect underlying credit exposures on the balance sheet. The Group has no material amount of off-balance sheet exposures related to undrawn loan commitments as of December 31, 2020. See note 22 of the consolidated financial statements for undrawn loan commitments.

Risk review (continued)

Audited

Credit risk related to reinsurance assets

The Group's Corporate Reinsurance Security Committee oversees the credit quality of cessions and reinsurance assets. The Group typically only cedes new business to authorized reinsurers with a minimum rating of 'A–.' Of the exposure ceded to reinsurers that are rated below 'A–' or are not rated, 54 percent and 57 percent were collateralized as of December 31, 2020 and 2019, respectively. Of the exposure ceded to reinsurers that are rated below 'A–' or are not rated, 62 percent was ceded to captive insurance companies in 2020, and 65 percent in 2019.

Reinsurance assets included reinsurance recoverables (the reinsurers' share of reserves for insurance contracts) of USD 25.6 billion and USD 22.8 billion, and receivables arising from ceded reinsurance of USD 1.5 billion and USD 1.5 billion as of December 31, 2020 and 2019, respectively, gross of allowance for impairment. Reserves for potentially uncollectible reinsurance assets amounted to USD 149 million as of December 31, 2020 and USD 119 million as of December 31, 2019. The Group's policy on impairment charges takes into account both specific charges for known situations (e.g., financial distress or litigation) and a general, prudent provision for unanticipated impairments.

Reinsurance assets in table 9 are shown before taking into account collateral such as cash or bank letters of credit and deposits received under ceded reinsurance contracts. Unsecured reinsurance assets shown are after deducting collateral. Bank issuing letters of credit for the benefit of Zurich are on average 'A' rated. The value of the collateral received amounts to USD 10.8 billion and USD 10.3 billion as of December 31, 2020 and 2019, respectively.

Table 9 shows reinsurance assets and unsecured reinsurance assets split by rating.

Table 9

Reinsurance assets and unsecured reinsurance assets by rating of reinsurer and captive

as of December 31	**2020**				2019			
	Reinsurance assets		**Unsecured reinsurance assets**		Reinsurance assets		Unsecured reinsurance assets	
	USD millions	**% of total**	**USD millions**	**% of total**	USD millions	% of total	USD millions	% of total
Rating								
AAA	37	0.1%	37	0.2%	6	–	6	–
AA	8,382	31.1%	7,445	45.9%	7,084	29.3%	6,309	45.7%
A	11,851	43.9%	5,644	34.8%	10,957	45.4%	4,871	35.3%
BBB	3,094	11.5%	1,385	8.5%	2,356	9.8%	1,095	7.9%
BB	411	1.5%	192	1.2%	335	1.4%	195	1.4%
B and below	204	0.8%	45	0.3%	256	1.1%	29	0.2%
Unrated	3,004	11.1%	1,485	9.1%	3,163	13.1%	1,308	9.5%
Total	**26,983**	**100.0%**	**16,233**	**100.0%**	**24,157**	**100.0%**	**13,812**	**100.0%**

Credit risk related to receivables

The largest amount of the Group's credit risk exposure to receivables is related to third-party agents, brokers and other intermediaries. It arises where premiums are collected from customers to be paid to the Group, or to pay claims to customers on behalf of the Group. The Group has policies and standards to manage and monitor credit risk related to intermediaries. The Group requires intermediaries to maintain segregated cash accounts for policyholder money. The Group also requires that intermediaries satisfy minimum requirements of capitalization, reputation and experience, and provide short-dated business credit terms.

Receivables that are past due, but not impaired, are regarded as unsecured; however, some of these receivable positions may be offset by collateral. The Group reports internally on Group past-due receivable balances and strives to keep the balance of past-due positions as low as possible, while taking into account customer satisfaction.

Receivables from ceded reinsurance are part of reinsurance assets and managed accordingly. See notes 15 and 24 of the consolidated financial statements for additional information on receivables.

Audited

Operational risk

Operational risk is the risk of financial loss or gain, adverse reputational, legal or regulatory impact, resulting from inadequate or failed processes, people, systems or from external events, including external fraud, catastrophes, or failure in outsourcing arrangements. Zurich has a framework to identify, assess, manage, monitor, and report operational risk within the Group. Within this framework, the Group:

- Uses a scenario-based approach to assess, model and quantify the capital required for operational risk for business units under extreme circumstances. This approach allows information to be compared across the Group and highlights the main scenarios contributing to the capital required for Zurich's internal model.
- Documents and reviews operational events exceeding a threshold determined by Zurich's risk policy manuals. Remedial action is taken to avoid the recurrence of such operational events.
- Conducts risk assessments where operational risks are identified for key business areas. Risks identified and assessed above a certain threshold must have a risk response. Risk mitigation plans are documented and tracked on an ongoing basis. In the assessments, the Group uses sources of information such as the Total Risk Profiling™ process, internal control assessments, and audit findings, as well as scenario modeling and operational event data.

The Group has specific processes and systems in place to focus on high-priority operational matters such as managing information security and business resilience (see sub-section 'digital and resilience risk'), as well as combating fraud.

Preventing, detecting and responding to fraud are embedded in Zurich's business processes. Both claims and non-claims fraud are included in the common framework for assessing and managing operational risks. For Zurich's internal model calculations, claims fraud is part of insurance risk and non-claims fraud is part of operational risk.

Risk management and internal controls

The Group considers internal controls to be key for managing operational risk. The Board has overall responsibility for the Group's risk management and internal control frameworks. The objectives of the Group's internal control system are to provide reasonable assurance that Zurich's financial statements and disclosures are materially correct, support reliable operations, and to ensure legal and regulatory compliance. The internal control system is designed to mitigate rather than eliminate risks, which could impact the achievement of business objectives. Key controls are assessed for their design and operating effectiveness.

The Group promotes risk awareness and understanding of controls through communication and training. Risk management and internal control systems are designed at Group level and implemented Group-wide.

Management, as the first line of defense, is responsible for identifying, evaluating and managing risk, and designing, implementing and maintaining internal controls. Key processes and controls in the organization are subject to review and challenge by management, Group Risk Management, Group Compliance and Group Audit. Control issues of Group-level significance and associated mitigation actions are reported regularly to the Audit Committee of the Board. The Risk and Investment Committee of the Board reviews the effectiveness of the Group's risk management system, including the Group's risk tolerance and enterprise-wide risk governance framework, in accordance with the charter for each committee.

The Group's Disclosure Committee, chaired by the Head of Group Financial Accounting and Reporting, assesses the content, accuracy and integrity of the disclosures and the effectiveness of the internal controls over financial reporting. The conclusions result in a recommendation to the Group Chief Financial Officer to release the financial disclosures to the Audit Committee of the Board, who may then challenge further. The Board reviews and approves the announcement of the results and the annual report before they are made public.

Group audit and external auditors also regularly report observations, conclusions and recommendations that arise as a result of their independent reviews and testing of internal controls over financial reporting and operations.

Risk review (continued)

Audited

Liquidity risk

Liquidity risk is the risk that an entity within the Group may not have sufficient liquid financial resources to meet its obligations when they fall due or would have to incur excessive costs to do so. Zurich's policy is to maintain adequate liquidity and contingent liquidity to meet its liquidity needs under normal conditions and in times of stress. To achieve this, the Group assesses, monitors and manages its liquidity needs on an ongoing basis.

Group-wide liquidity management policies and specific guidelines govern how local businesses plan, manage and report their local liquidity and include regular stress tests for all major legal entities and branches within the Group. The stress tests use a standardized set of internally defined stress events, and are designed to provide an overview of the potential drain on liquidity if the Group had to recapitalize local balance sheets. Similar guidelines apply at the Group level, and detailed liquidity forecasts are regularly conducted, based on local businesses' input and the Group's forecasts. As part of its liquidity management, the Group maintains sufficient cash and cash equivalents and high-quality, liquid investment portfolios to meet outflows under expected and stressed conditions.

The Group also maintains internal liquidity sources that cover the potential liquidity needs within the Group, including those that might arise in times of stress. The Group takes into account the amount, availability and speed at which these sources can be accessed. The Group has access to diverse funding sources to cover contingencies, including asset sales, external debt issuance and making use of committed borrowing facilities or letters of credit. The Group maintains a range of maturities for external debt securities. A potential source of liquidity risk is the effect of a downgrade of the Group's credit rating. This could affect the Group's commitments and guarantees, potentially increasing liquidity needs. This risk and mitigating actions that might be employed are assessed on an ongoing basis within the Group's liquidity framework.

The Group regularly analyzes the liquidity of the investment assets and ensures that the liquidity of assets stays in line with liquidity requirements. In 2020, the Group's holdings in illiquid assets were within its capacity.

For more information on debt obligation maturities, see note 18 of the consolidated financial statements, and for information on commitments and guarantees, see note 22 of the consolidated financial statements.

The Group's ongoing liquidity monitoring includes regular reporting to the executive management and quarterly reporting to the Risk and Investment Committee of the Board, covering aspects such as the Group's actual and forecast liquidity, possible adverse scenarios that could affect the Group's liquidity and possible liquidity needs from the Group's main subsidiaries, including under conditions of stress.

For more information on the Group's other financial liabilities, see note 16 of the consolidated financial statements. See note 6 of the consolidated financial statements for information on the maturity of debt securities.

The Group has committed to contribute capital to subsidiaries and third parties that engage in making investments in direct private equity and private equity funds. Commitments may be called by the counterparty over the term of the investment (generally three to five years) and must be funded by the Group on a timely basis. See note 22 of the consolidated financial statements.

Risk review (continued)

Audited

Strategic risk and risks to the Group's reputation

Strategic risk

Zurich defines strategy as the long-term plan of action designed to allow the Group to achieve its goals and aspirations based on Zurich's purpose and values.

Strategic risks can arise from:

- Inadequate risk-reward assessment of strategic plans
- Improper execution of strategic plans
- Unexpected changes to underlying assumptions, including on the external environment

The Group works to manage risks associated with strategic business decisions through its risk assessment processes and tools, including the Total Risk Profiling™ (TRP) process. As part of the annual assessment of strategic risks, the Executive Committee (ExCo) assesses potential risks from both external and internal factors, looking at 2020 and beyond. These include potential mid-term implications of the COVID-19 pandemic on the future macroeconomic, financial market, customer and operating environments. The ExCo members define actions to respond as appropriate and review changes to the key risks and their status of actions at least quarterly.

The Group evaluates the risks of merger and acquisition (M&A) transactions both from a quantitative and a qualitative perspective. The Group conducts risk assessments of M&A transactions to evaluate risks specifically related to integrating acquired businesses.

Risks to the Group's reputation

Risks include acts or omissions by the Group or any of its employees that could damage the Group's reputation or lead to a loss of trust among its stakeholders. Every risk type has potential consequences for Zurich's reputation. Effectively managing each risk type supports preventing adverse reputational outcomes.

The Group aims to preserve its reputation by adhering to applicable laws and regulations, by following the core values and principles of the Group's code of conduct that promote integrity and good business practice, and by living up to its sustainability commitments. The Group centrally manages certain aspects of reputation risk, for example, communications, through functions with the appropriate expertise. Potential risks to Zurich's reputation are included in its risk assessment processes and tools, including the TRP process.

Sustainability risk

Zurich's ambition is to be known as one of the most responsible and impactful businesses in the world. Trends like globalization, the mobility of talent and funds, shifting geopolitics, reskilling for a digital workplace, demographics, and climate change all pose immensely complex social issues.

Sustainability means doing business today in a way that safeguards the future of our company and our society. Sustainability risks and opportunities emanate both from effects that environmental, social and governance (ESG) challenges have on the company, as well as from how the company handles its positive or negative impact on ESG issues. To protect against financial and reputational impacts, both perspectives are included in the identification and assessment of sustainability issues.

Climate change, as one of the most complex risks facing society today, is intergenerational, international and interdependent. As a global insurer, Zurich faces risks from climate change and discloses its climate risk in line with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), part of the consolidated non-financial statements.

Sustainability topics associated with ESG challenges are also becoming more complex and interconnected as a result of these trends. Insurers are increasingly becoming agents of change and playing a more impactful role in addressing sustainability risk.

Zurich works with its customers and investee companies to ensure responsible and sustainable business practices while promoting best practices in managing ESG risks. The Group has policies in place that define the sustainability positions for which Zurich has no underwriting or investment appetite. Zurich continuously works to develop relevant products and services that help solve today's most pressing societal and environmental issues.

Sustainability risk framework

To support the Group's businesses in applying its purpose and values as well as mitigating reputational risk impacts, Zurich has established a systematic and integrated approach to identifying, assessing and recommending action on potential risk and opportunity areas from a sustainability perspective across all the Group's activities, in particular in investment management and underwriting.

This is a three-step process:

- Issue identification: Identify relevant issues to be considered within the risk assessment process by monitoring channels such as media, social media, information from non-governmental organizations (NGOs) and Zurich's businesses.
- Risk assessment: Assess issues related to public commitments, the role of insurance underwriting, market exposure and materiality. The Group CEO approves position statements, recommended business actions, and reputational management considerations.
- Implementation: Implement mitigation actions, including managing reputational impacts locally in the businesses. Mobilize expert support available across the Group and escalate as necessary, according to governance procedures.

Zurich applies these steps across portfolios based on stated thresholds and verified data. Wherever possible, for customers that are on the margins of Zurich's thresholds, Zurich engages and works together with customers to ensure responsible and sustainable business practices. This engagement may be short, but in some cases can be for a period of up to two years, depending on which part of the renewal cycle customers are in and the time required for them to demonstrate credible progress on ESG issues.

Clear roles and responsibilities, starting with the Zurich Insurance Group Ltd Board of Directors and including Zurich management, aim to ensure effective oversight and action with respect to climate change and other sustainability risks.

Zurich's Sustainability Leaders Council leads the ongoing implementation of our sustainability objectives and formulates and formalizes the integration of sustainability across businesses and functions. The Council comprises senior executives from across the Group and is chaired by the Group Head of Sustainability (as of January 31, 2021; before that by the Group Head of Public Affairs and Sustainability), reporting into the CEO EMEA and Bank Distribution.

Digital and resilience risk

Digital and technological advances have not only created a wide spectrum of benefits for society but also amplified the associated risks. Organizations are realigning their operations, forging new third-party relationships and putting data at the heart of their decision making and analysis. All of this is happening at a rapid pace and against a backdrop of an increasingly hostile cyber threat landscape. In order to succeed, organizations need to be able to assess and understand the risks inherent in this changing environment and ensure that they are managed appropriately.

Holistic and interdisciplinary approach

By applying a holistic approach to assessing digital trends, the Group provides new risk insights that enable Zurich to achieve a rapid and resilient digital transformation. In order to ensure effective governance and monitoring, ongoing proactive, pragmatic and solution-oriented approaches focus on risk and controls with a strong emphasis on enabling the business while safeguarding the enterprise from risks in the digital space.

Cyber and technology risk

The relevance of technological risks, such as cyber risk, is rapidly increasing across all data-driven industries. Exposure to these risks has grown in lockstep with the significant rise in digital services provided directly to customers and the increasing prevalence of digital ecosystems and cloud solutions in today's interconnected world. On a continuous basis, Zurich assesses and monitors exposure to defined information security and cyber risk scenarios through key risk indicators (KRIs) to effectively focus on actions and adequate resource allocation.

Risk review (continued)

Data risk

The strategic relevance of data as a business asset is rising at a rapid pace and the risks associated with data management are growing more and more prominent. Preventing risks such as data losses and privacy breaches and assessing and monitoring the potential misuse of data and losses triggered by failures in data management remain in focus. Specifically, appropriate governance of data for business purposes and decision-making processes, including automation, machine-learning techniques and other advanced technologies, are a priority. As Zurich strives to inspire confidence in a digital society with its data commitment, assurance on the ethical use of advanced technologies is provided from a risk management perspective for the protection and privacy of data of our customers and all other stakeholders.

Third-party and transformation risk

Outsourcing and the engagement with third parties introduces risks relevant to the delivery of our strategy, such as data loss or disclosure, disruption to critical customer services and regulatory compliance. Digitalization has accelerated the complexity and changes to the Group's third-party ecosystem. Zurich looks to address risks associated with third-party engagements along its supply and value chain. Applying a consistent Group-wide approach to outsourcing governance is among Zurich's key priorities.

Business resilience risk

Zurich, along with the rest of the insurance industry, is going through a period of transformation in order to meet changing customer expectations. In addition, increasing automation of processes, development of advanced analytics capabilities, and fragmented supply chains have contributed to an increasingly complex operating environment. In response to these challenges and to better protect the interests of our stakeholders, Zurich has continued to evolve its business resilience capability through a number of ongoing initiatives in relation to the protection and recovery of critical services and enhancing transparency around any associated risks. Zurich's response to COVID-19 to date has proven to be effective with critical business services maintained throughout the Group. Zurich continues to monitor the situation closely and adapt our response accordingly.

Digital policy – new insights and sustainability

Internal policies for managing digital risk are aligned to Zurich's sustainability strategy and are implemented by the businesses. Zurich aspires both to follow, and influence, public policy discourse on digital transformation and innovation risks. Zurich takes an active role in thought leadership for digital risk management across the industry and is committed to strengthening the link between digitalization and sustainability, supporting digital literacy to enable effective risk management. It is also endorsing the use of advanced technologies to make sure the Group's values are adhered to and observed.

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