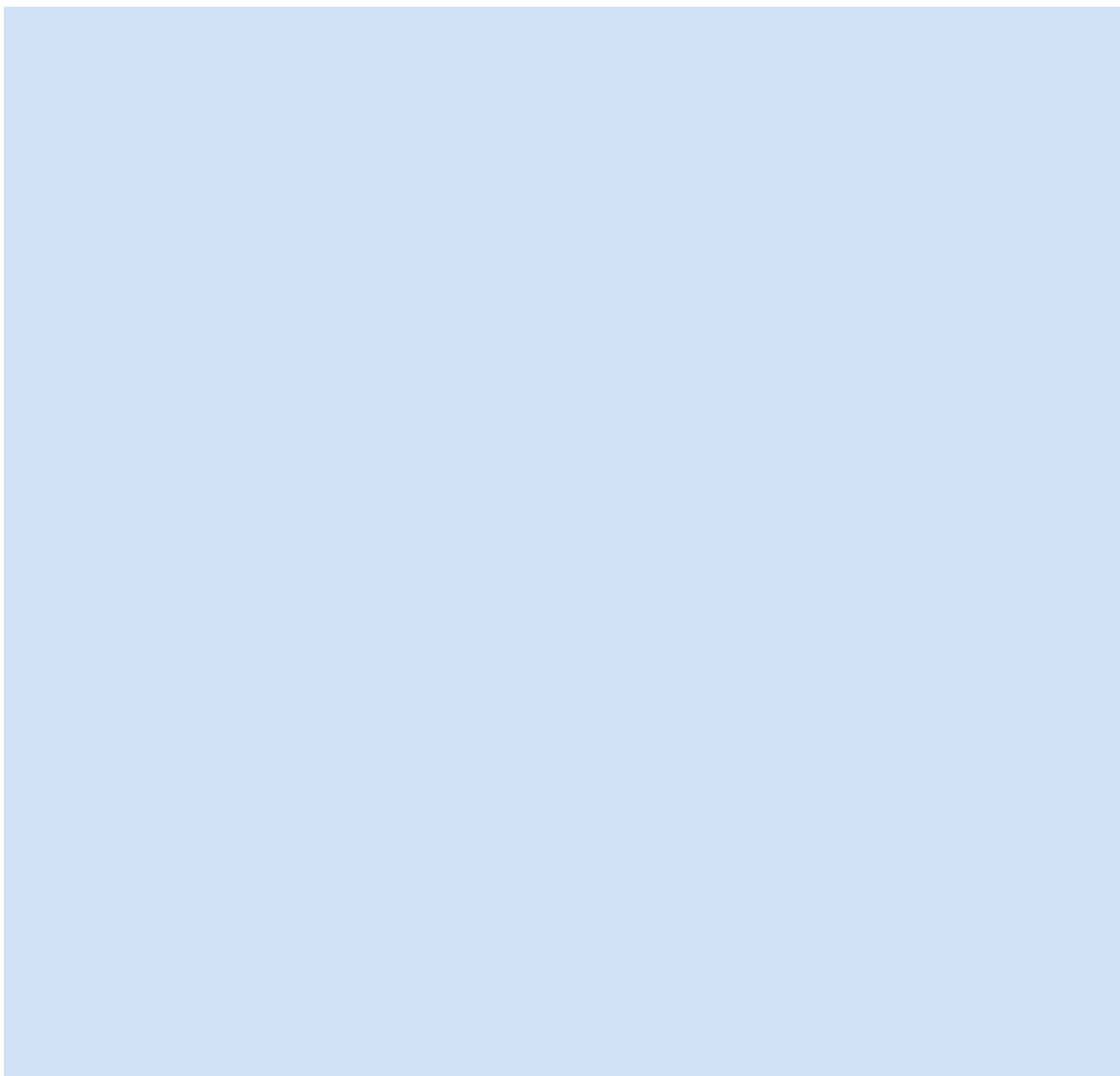


Risk review

Annual results 2017



Risk review

Sound risk management in a changing world

“
Managing risks means keeping
our eye on the here and now,
and on the long term.”

Alison Martin
Group Chief Risk Officer



As an insurer, we help our customers manage their risks and are accountable for managing our own. By effectively managing our risks, we make sure we are there when our customers need us.

Introduction

I became Zurich's Group Chief Risk Officer January 1, 2018, and so it is my great pleasure to introduce the 2017 risk review, which presents Zurich's major risks and describes how we manage them.

I have inherited strong risk management practices, as evidenced by our strong capitalization and Standard and Poor's very strong rating for Enterprise Risk Management. We have a solid and proven foundation of quantitative and qualitative risk assessments, policies, and risk governance.

I am pleased to have joined Zurich for many reasons. One is the Group's commitment to sustainability, including managing the risks posed by climate change. In this regard I am proud that we are committed to the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) and provide in this report our initial disclosure on the risks we face from climate change.

Also, I have a strong belief in our new purpose and values, which align with our customer-focused strategy to deliver on our promises, to all our stakeholders. In my role as Group Chief Risk Officer I want to be sure we manage our risks so that we can all thrive in this era of change.

External and internal challenges

Our risk landscape is as complex and varied as ever, and we know that risks emerge and develop over time. The Group uses our Total Risk Profiling™ process to evaluate internal and external risks, both those that are market-wide and those idiosyncratic to Zurich. In deciding how to respond, we take into account the time horizon for risks to potentially materialize, as well as what we can control and what we cannot.

Of the near-to mid-term risks we have identified, I highlight two risks that have strong technology elements and that reflect the rapidly changing environment in which we operate in. The first is the external risk posed by changes in customer expectations, and the corollary internal risk to our ability to engage and provide service to our customers at the desired level. The second is information security and cyber risk.

Financial condition tested under stressed perspective

We use sensitivity and scenario analyses to assess the potential impact of conditions under stress.

The Group identifies plausible threat scenarios and quantifies their potential impact on financial resources, or capital required, or both. Depending on the outcome, we develop, implement and monitor appropriate actions.

In this report, we present Zurich Economic Capital Model (Z-ECM) ratio sensitivity analysis to seven market- and credit-risk scenarios, and three natural catastrophe scenarios. The Z-ECM ratio remains within the 'AA' range for one scenario, and above for the rest. These stress scenarios demonstrate the Group's capital strength and resilience.



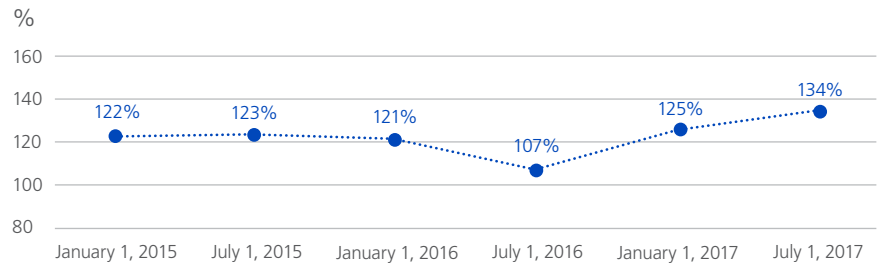
Alison Martin
Group Chief Risk Officer

Economic risk profile

The Group's Z-ECM ratio has increased from 125 percent as of January 1, 2017 to 134 percent as of July 1, 2017. Year-end 2017 estimate is 132 percent (with an error margin of +/- 5 percentage points). The increase was driven mainly by positive financial market performance and economic profit generation.

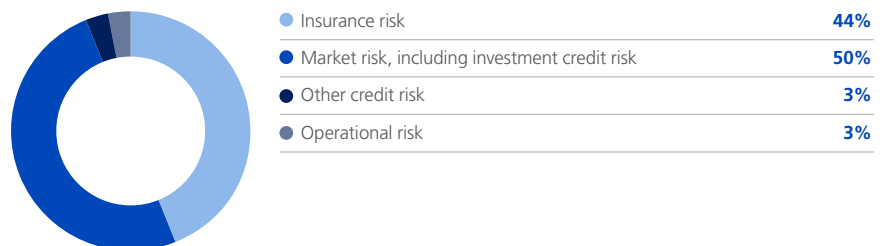
[+ Pages 9 to 12](#)

Z-ECM ratio



Total Z-ECM capital required: USD 30.5 billion

%, as of July 1, 2017



Highlights by risk type

Insurance risk

The Group diversifies its sources of revenue by geography, line of business, product and customer, and therefore is not exposed to concentrations of insurance risk beyond our risk appetite.

[+ Pages 15 to 22](#)

Market risk

Market risk remained broadly stable during 2017 following a period of active de-risking in the second half of 2016.

[+ Pages 23 to 30](#)

Other credit risk

The overall credit quality of the reinsurance assets portfolio remains high and stable.

[+ Pages 31 to 33](#)

Operational risk

The Group uses a scenario-based approach to quantify the capital required for operational risk. The top three risk-scenario clusters relate to regulatory compliance, business conduct and M&A transactions.

[+ Pages 34 to 36](#)

Risk review

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

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 risk is inherent to the insurance business, but such risk-taking needs to be made 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 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 contribute 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 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, identifies Zurich's principal 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 issues to senior management and the Board of Directors in a timely way. To foster transparency about risk, the Board receives quarterly risk reports and risk updates. In 2017, reporting was enhanced with in-depth risk insights into ongoing topics such as information security and cyber risk; insurance market trends; the potential adverse impact that accelerating inflation and expectations about inflation could have on reserves; and the potential effects on Zurich of such topical issues as the Brexit negotiations and geopolitical developments in Asia and Latin America.

The Group assesses risks systematically and from a strategic perspective through its proprietary Total Risk Profiling™ (TRP) process, which allows Zurich to identify and evaluate the probability and severity of a risk scenario. The Group then develops, implements and monitors improvements. The TRP process is integral to how Zurich deals with change, and is particularly suited to evaluate strategic risks, as well as risks to Zurich's reputation. At Group level, this process is ongoing, with regular reviews with senior management.

Risk review (continued)

Audited

The Group's risk appetite statement includes capital, liquidity, earnings volatility and non-financial metrics. The Group regularly measures and quantifies material risks to which it is exposed. Zurich's policy is to maintain capital consistent with an 'AA' financial strength rating for the Group. The Group translates that goal into a quantified risk tolerance. The primary metric used to steer business is the Zurich Economic Capital Model (Z-ECM). The Z-ECM provides a key input into the Group's strategic planning process as an assessment between the Group's risk profile and the Group's risk tolerance. The Z-ECM forms the basis for optimizing the Group's risk-return profile by providing consistent risk measurement across the Group.

Group's Z-ECM overall risk appetite and tolerance

<90%	90–100%	100–120%	120–140%	>140%
Z-ECM ratio below Group risk tolerance level, requiring appropriate remedial actions	Position may be tolerated for a certain length of time depending on the risk environment	'AA' target range No action required as within stated objective and equivalent to 'AA' rating	Consider increased risk taking or remedial actions	Z-ECM ratio indicating over capitalization, requiring implementation of mitigating actions
Z-ECM ratio				

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 ensures they do not encourage inappropriate risk taking. With regard to the latter, the Group Chief Risk Officer (Group CRO) consults with the other assurance, control and governance functions to provide the CEO with a review of risk factors to consider in the annual variable-compensation process. In consultation with these functions, the Group CRO also provides an individual assessment of Group key risk takers as part of their annual individual performance assessment. For more information on Zurich's remuneration system, see the 'remuneration report.'

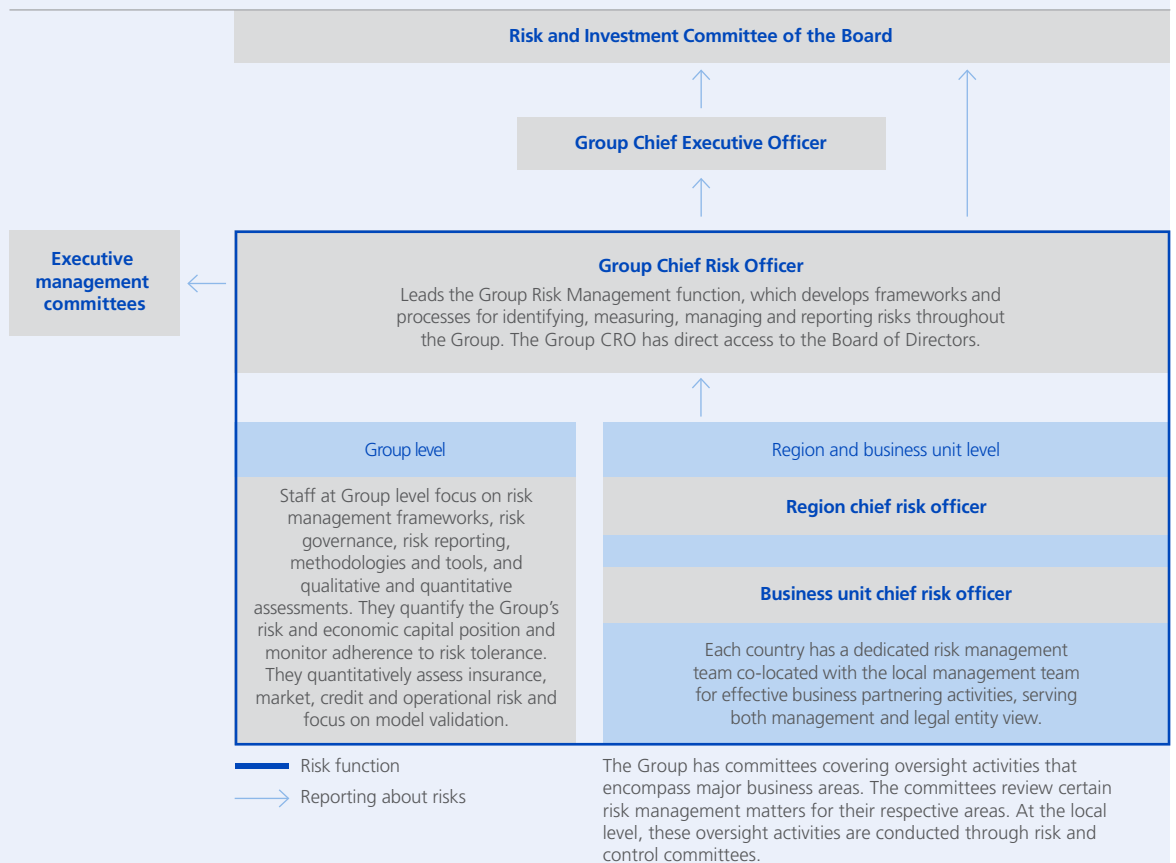
Audited

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 CRO.



The risk function is independent of the business by being a vertically integrated function where all risk employees globally directly report into the Group CRO. Risk officers are embedded in the business, positioning them to support and advise, 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 its capital to maximize long-term shareholder value while maintaining financial strength within its 'AA' target range, and meeting regulatory, solvency and rating agency requirements. In particular, the Group endeavors to manage its shareholders' equity under IFRS to balance maximization of shareholder value and constraints imposed by its economic framework, rating agencies and regulators. As of December 31, 2017, shareholder's equity of USD 33.1 billion, subordinated debts of USD 6.9 billion and senior financial debts not maturing within the next year of USD 2.9 billion were part of the capital available in the Group's economic framework. Further adjustments usually include such items as intangible assets, deferred tax assets and liabilities, or allowing for discounting of liabilities and the value of in-force business. For more information, see 'analysis of the Group's Z-ECM available financial resources (unaudited).

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.

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 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 a sound capital position provides. Dividends, share buy-backs, and issuances and redemption of debt have a significant influence on capital levels. In 2017, the Group paid a dividend out of retained earnings and the capital contribution reserve, redeemed senior debt, and called hybrid debts that had been pre-financed during 2016.

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, 2017, the amount of the general legal reserve exceeded 20 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.

Audited

Risk and solvency assessment

Economic capital adequacy

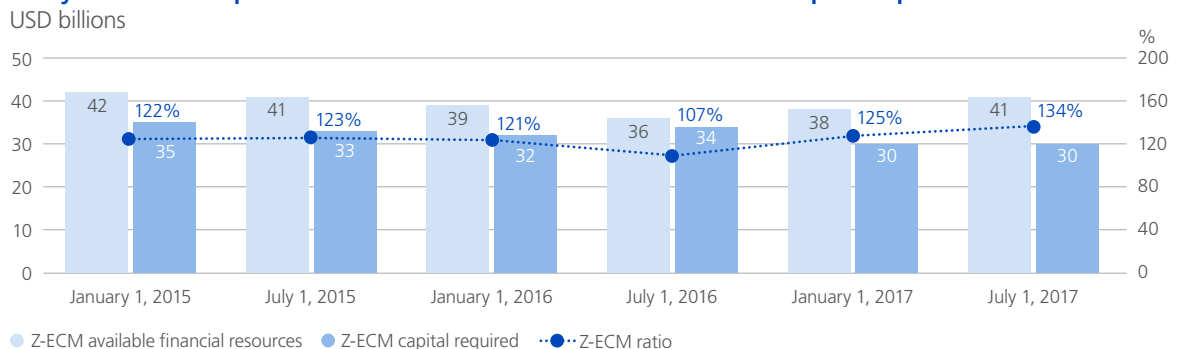
Internally, the Group uses its Zurich Economic Capital Model (Z-ECM), which also forms the basis of the Swiss Solvency Test (SST) model. Z-ECM targets a total capital level that is calibrated to an 'AA' financial strength. Zurich defines the Z-ECM capital required as being the capital required to protect the Group's policyholders in order to meet all of their claims with a confidence level of 99.95 percent over a one-year time horizon.

The Group uses Z-ECM to assess the economic capital consumption of its business on a one-balance-sheet approach. Z-ECM is an integral part of how the Group is managed. It is embedded in the Group's organization and decision-making processes, and is used in capital allocation, business performance management, pricing, and communication. Z-ECM quantifies the capital required for insurance-related risk (including premium and reserve, natural catastrophe, business and life insurance), market risk including investment credit risk, reinsurance credit risk, other credit risk, and operational risk.

At the Group level, Zurich compares Z-ECM capital required to the Z-ECM available financial resources (Z-ECM AFR) to derive an Economic Solvency Ratio (Z-ECM ratio). Z-ECM AFR reflects financial resources available to cover policyholder liabilities in excess of their expected value. It is derived by adjusting the IFRS shareholders' equity to reflect the full economic capital base available to policyholders to absorb any unexpected volatility in the Group's business activities.

The chart below shows the development of the Group's Z-ECM AFR, Z-ECM capital required and Z-ECM ratio over time. As of December 31, 2017, the Z-ECM ratio was estimated at 132%, with an error margin of +/-5 percentage points.

Analysis of the Group's Z-ECM available financial resources and Z-ECM capital required

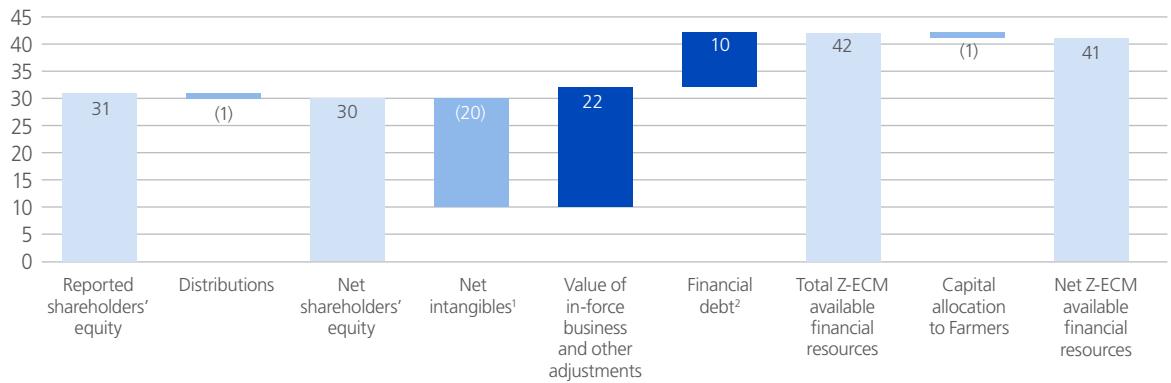


Risk review (continued)

The chart below shows an analysis of the composition of the Group's Z-ECM available financial resources as of July 1, 2017.

Analysis of the Group's Z-ECM available financial resources

USD billions, as of July 1, 2017



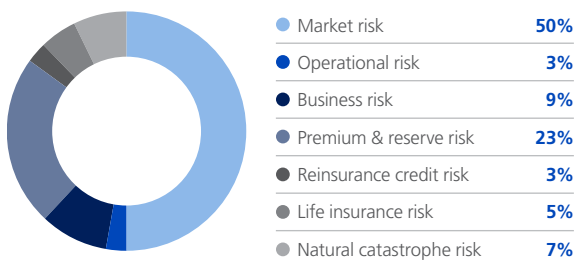
¹ Shareholders' intangible assets including deferred tax assets less deferred front-end fees and deferred tax liabilities
² All debt issues (senior and subordinated) excluding those classified as operational debt or maturing within one year

The chart below shows the Z-ECM capital required, split by risk type as of July 1, 2017 and as of January 1, 2017. As of July 1, 2017, the largest proportion of Z-ECM capital required arose from market risk which comprised 50 percent of the total. Capital required for premium and reserve risk was the second-largest, comprising 23 percent.

Z-ECM capital required, split by risk type

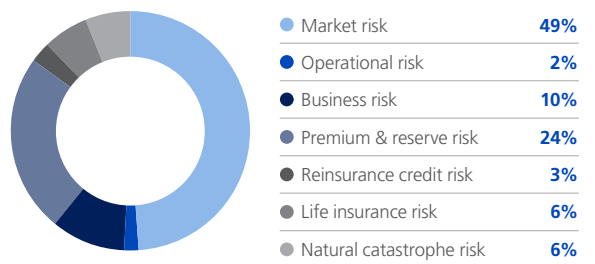
July 1, 2017

Total Z-ECM capital required: USD 30.5 billion



January 1, 2017

Total Z-ECM capital required: USD 30.2 billion

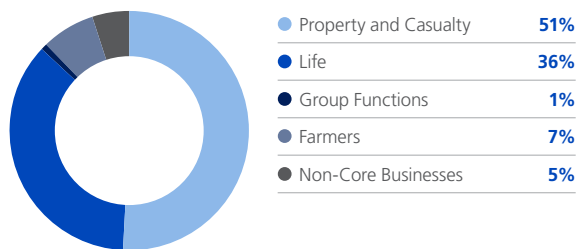


The total allocated capital as of July 1, 2017 equaled USD 30.5 billion Z-ECM capital required plus USD 0.8 billion allocated to Farmers. As of July 1, 2017 the largest proportions of Z-ECM capital required were allocated to Property & Casualty with 51 percent and Life with 36 percent of the total. The following chart shows the Z-ECM capital required allocated to the businesses as of July 1, 2017 and January 1, 2017.

Total capital allocated, by business

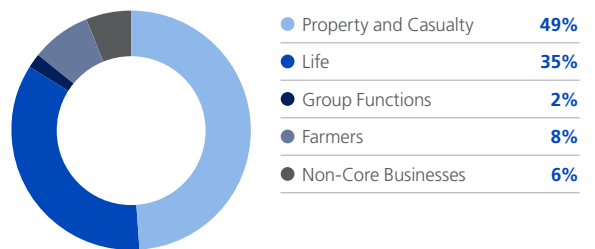
July 1, 2017

Total capital allocated: USD 31.3 billion



January 1, 2017

Total capital allocated: USD 31.1 billion



Sensitivity and scenario analysis

The Group evaluates sensitivities to, and stress scenarios on, the Z-ECM ratio, and presents results relative to Zurich's risk tolerance and appetite. The sensitivities and stress scenarios in the following chart capture two key risks to the Group: market risk and insurance risk. For insurance risk, the chart shows the three largest natural catastrophe events to which the Group is exposed.

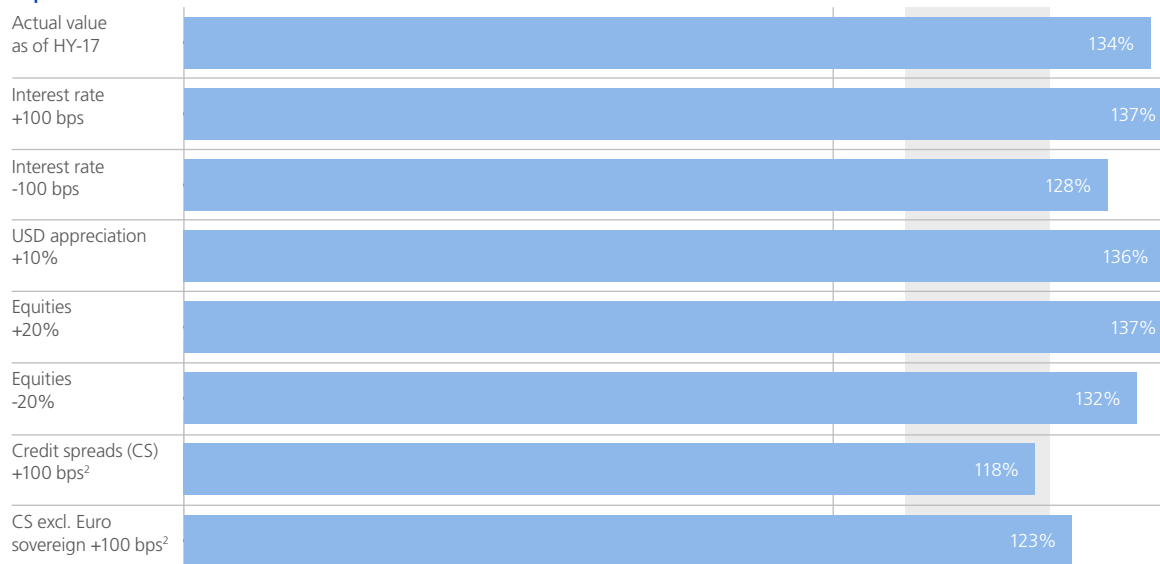
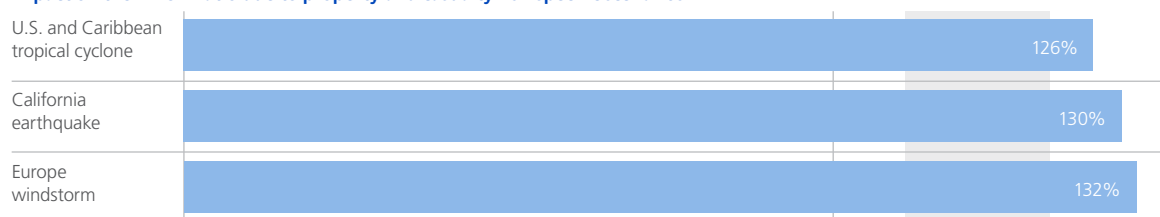
Market risk sensitivities show the estimated impact on the Group's Z-ECM ratio of a one percentage point increase/decrease in yield curves, a 10 percent appreciation in the U.S. dollar, a 20 percent rise/decline in all stock markets, and a one percentage point change in credit spreads, with and without European sovereigns. The sensitivities are considered as separate but instantaneous scenarios. They are a best estimate and non-linear, i.e., a change in the scenario input could result in disproportionately higher (or lower) impact on the Z-ECM ratio depending on the prevailing market conditions at the time.

Scenarios are defined as events that have a very small probability of occurring but that could, if realized, negatively affect the Group's Z-ECM AFR. The impact of insurance-specific scenarios on the required capital is not taken into account.

Risk review (continued)

Z-ECM sensitivities and scenarios¹

as of July 1, 2017

Impact on the Z-ECM ratio from sensitivities to financial market conditions:**Impact on the Z-ECM ratio due to property and casualty risk-specific scenarios:³**

90%
Risk tolerance
level

100–120%
'AA' target
range

¹ Z-ECM is calibrated at 99.95% Value at Risk (equivalent to an 'AA' rating).

² Credit spreads (CS) include mortgages and incl./excl. Euro sovereign spreads. Sensitivity is net of profit sharing with policyholders.

³ 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% probability of non-exceedance).

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Insurance financial strength rating

The Group has interactive relationships with three global rating agencies: Standard & Poor's, Moody's, and AM Best. The Insurance Financial Strength Rating (IFSR) of the Group's main operating entity is an important element of Zurich's competitive position. The Group's credit ratings derived from the financial strength ratings also affect the cost of capital.

The Group maintained its strong rating level in 2017. On Dec 8, 2017, AM Best modified the rating outlook from negative to stable while reaffirming the A+ (Superior) Financial Strength Rating (FSR) and aa- Issuer Credit Rating (ICR) of the Group and of its subsidiaries rated by AM Best. With this, AM Best recognized "the positive impact of the strong corrective actions management has taken on the Group's Property & Casualty (P&C) operations." This change is also based on the recognition of the Group's diversified sources of earnings in terms of businesses and geographies, as well as the strength of the balance sheet.

Standard & Poor's sees Zurich's ERM as 'very strong,' based on a positive view of our risk management culture, risk controls, emerging risk management, risk models and strategic risk assessment.

As of December 31, 2017, the IFSR of Zurich Insurance Company Ltd (ZIC), the main operating entity of the Group, was 'AA-/Stable' by Standard and Poor's, 'Aa3/Stable' by Moody's, and 'A+ (Superior) /Stable' by A.M. Best.

Regulatory capital adequacy

The Group endeavors to manage its capital so that all of its regulated entities meet local regulatory capital requirements at all times.

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 to ensure regulated subsidiaries meet local capital requirements.

Regulatory requirements in Switzerland

Under the Swiss Solvency Test (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 has to be calculated as per January 1 and must be submitted to the Swiss Financial Market Supervisory Authority (FINMA). Zurich filed with FINMA an SST ratio of 227% (unaudited) as of January 1, 2017.

In 2017, Zurich enhanced its internal model and submitted it to FINMA for approval. Enhancements include changes that were necessary to meet evolving FINMA requirements. The changes are expected to reduce the Group's SST ratio by 10 to 25 percentage points (unaudited).

Risk review (continued)

Audited

Regulatory requirements in other countries**Regulatory requirements in the European Economic Area (EEA)**

The complete Solvency II framework was introduced on January 1, 2016. Solvency II is more risk-sensitive and sophisticated in its approach than Solvency I. Solvency II capital requirements also take into account all material risks and how these interact.

Zurich Insurance plc (Ireland) applies the internal model, which aligns the Solvency II approach with that used for Z-ECM, and has received approval from the Central Bank of Ireland accordingly. Other EEA subsidiaries use the Solvency II standard formula.

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 regulatory 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 Asia Pacific, Latin America, and Middle East and Africa

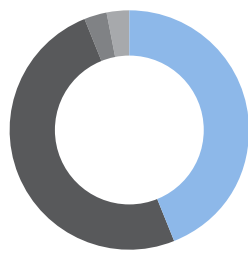
Every country has a capital standard for insurance companies. Several jurisdictions (e.g., Chile, Brazil, Mexico and Japan) have taken approaches similar to Solvency II.

Analysis by risk type

Insurance risk

Section highlights

Total Z-ECM capital required: USD 30.5 billion
%, as of July 1, 2017



● Insurance risk	44%
● Market risk, including investment credit risk	50%
● Other credit risk	3%
● Operational risk	3%

Key risk and capital indicators

Z-ECM, in USD billions

	Q2 2015	Q2 2016	Q2 2017
Business risk	2.6	3.4	2.8
Life liability risk	1.6	1.9	1.6
Premium & reserve risk	7.6	7.2	7.1
Natural catastrophe risk	3.5	1.5	2.0

Audited

Insurance risk is the inherent uncertainty regarding the occurrence, amount or timing of insurance cashflows. 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. The exposure is transferred to Zurich through the underwriting process. Zurich actively seeks to write those risks it understands and that provide a reasonable opportunity to earn an acceptable profit. Zurich manages the customer risks it assumes, and minimizes unintended underwriting risks, through such means as:

- Establishing limits for underwriting authority
- Requiring specific approvals for transactions above established limits or new products
- Using a variety of reserving and modeling methods
- Ceding insurance risk through external proportional or non-proportional reinsurance treaties and facultative single-risk placement. The Group centrally manages reinsurance treaties.

Property and casualty insurance risk

Property and casualty risk 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. Business risk for property & casualty predominantly relates to unexpected increases in the expenses relating to claims handling, underwriting, and administration. The following provides an overview of the Group's main lines of business:

- Motor includes automobile physical damage, loss of the insured vehicle and automobile third-party liability insurance.
- Property includes fire risks (e.g., fire, explosion and business interruption), natural perils (e.g., earthquake, windstorm and flood), engineering lines (e.g., boiler explosion, machinery breakdown and construction) and marine (e.g., cargo and hull).
- Liability includes general/public and product liability, excess and umbrella liability, professional liability including medical malpractice, and errors and omissions liability.
- Special lines include directors and officers, credit and surety, crime and fidelity, travel, accident and health, and crop.
- Worker injury includes workers' compensation and employers' liability.

Risk review (continued)

Audited

The Group's underwriting strategy takes advantage of the diversification of property and casualty risks across lines of business and geographic regions. Zurich's underwriting governance is applicable throughout the Group.

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. The Group sets appropriate underwriting and pricing guidelines, which are monitored regularly. Technical reviews confirm whether underwriters perform within authorities and adhere to underwriting philosophies and policies. The Group has governance procedures to review and approve potential new products, in order to evaluate whether the risks are well understood and justified by the potential rewards.

Actual losses on claims provisions may be higher or lower than anticipated. Property and casualty insurance reserves are therefore regularly estimated, reviewed and monitored. The total loss and loss adjustment expense reserves are based on work performed 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, historical trends and patterns of loss payments, exposure growth, court decisions, economic conditions, inflation, and public attitudes that may affect the ultimate cost of claim settlement. Inflation is monitored on a country basis; the monitoring process relies on both Zurich's economic view on inflation and specific claims activity, and feeds into actuarial 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 on local and Group level.

In most cases, these actuarial analyses are conducted at least twice a year for on-going business according to agreed timetables. Analyses are performed by product line, type and extent of coverage and year of occurrence. As with any projection, claim reserve estimates are inherently uncertain due to the fact that the ultimate liability for claims will be affected by trends as yet unknown, including future changes in the likelihood of claimants bringing suit, the size of court awards, and claimants' attitudes toward settlement of their claims.

The Group monitors potential new emerging risk exposures. Zurich has an Emerging Risk Group, with cross-functional expertise from core insurance functions such as underwriting, claims and risk management to identify, assess and recommend actions for such risks.

In addition to the specific risks insured, 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 and natural catastrophes are U.S. and Caribbean tropical cyclone, Europe windstorm and California earthquake.

Audited

Tables 1.a and 1.b show the Group's concentration of risk within the Property & Casualty business by region and line of business based on direct written premiums before reinsurance. Property & Casualty premiums ceded to reinsurers (including retrocessions) amounted to USD 6.5 billion and USD 7.0 billion for the years ended December 31, 2017 and 2016, respectively. Reinsurance programs are managed on a global basis, and therefore, net premium after reinsurance is monitored on an aggregated basis.

Table 1.a

Property & Casualty – Direct written premiums and policy fees by line of business – current period	in USD millions, for the year ended December 31, 2017					
	Motor	Property	Liability	Special lines	Worker injury	Total
Europe, Middle East & Africa	4,459	3,869	1,927	1,895	335	12,486
North America	1,750	2,691	3,175	3,864	2,934	14,414
Other regions	1,472	1,184	341	1,646	138	4,781
Total	7,681	7,745	5,443	7,405	3,408	31,681

Table 1.b

Property & Casualty – Direct written premiums and policy fees by line of business – prior period	in USD millions, for the year ended December 31, 2016					
	Motor	Property	Liability	Special lines	Worker injury	Total
Europe, Middle East & Africa	4,715	4,045	2,026	1,955	361	13,102
North America	1,689	2,733	3,258	3,819	2,844	14,342
Other regions	1,382	1,196	357	1,249	143	4,326
Total	7,785	7,973	5,641	7,023	3,347	31,770

Analysis of sensitivities for property and casualty 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. Such an increase could develop either due to the insured events happening more frequently or due to resulting claims becoming more severe, or from a combination of frequency and severity. 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.

Table 2.a

Insurance risk sensitivity for the Property & Casualty business – current period	in USD millions, for the year ended December 31, 2017					
	Europe, Middle East & Africa	North America	Asia Pacific	Latin America	Reinsurance	Total
+1% in net loss ratio						
Net income before tax	(119)	(105)	(19)	(19)	1	(260)
Net assets	(79)	(70)	(13)	(13)	1	(174)

Table 2.b

Insurance risk sensitivity for the Property & Casualty business – prior period	in USD millions, for the year ended December 31, 2016					
	Europe, Middle East & Africa	North America	Asia Pacific	Latin America	Reinsurance	Total
+1% in net loss ratio						
Net income before tax	(128)	(100)	(19)	(16)	2	(261)
Net assets	(89)	(69)	(13)	(11)	2	(181)

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 the 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 the policyholders is higher or recovery rates from disability are lower than expected

Business risk

- Policyholder behavior risk – on average, the 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 – 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 – 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

A more diversified portfolio of risks is less likely than an undiversified portfolio to be affected across the board by a change in any subset of the risks. As a result, the offsetting effects between unit-linked and traditional business reduce some of the risk associated with the life business.

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

Unit-linked products are designed to reduce much of the market and credit risk associated with the Group's traditional business. 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. To the extent that there are guarantees built into the product design, unit-linked products carry mortality/morbidity risk and market risk. Contracts may have minimum guaranteed death benefits where the sum at risk depends on the fair value of the underlying investments. For certain contracts, these risks are mitigated by mortality and morbidity charges.

Other life insurance liabilities include traditional life insurance products, such as protection and life annuity products. Protection products carry mortality, longevity and morbidity risk, as well as market and credit risk. Epidemics and lifestyle changes are among the most significant factors that could result in earlier or more claims than expected. Disability, defined in terms of the ability to perform an occupation, could be affected by adverse economic conditions. To reduce pricing cross-subsidies, where permitted, premiums are adjusted for factors such as age, gender and smoker status. Policy terms and conditions and disclosure requirements in insurance applications are designed to mitigate the risk arising from non-standard and unpredictable risks that could result in severe financial loss.

In the life annuity business, medical advances and improved social conditions that lead to increased longevity are the most significant insurance risk. Annuitant (beneficiary) mortality assumptions include allowance for future mortality improvements.

The Group is also exposed to risks posed by policyholder behavior, and fluctuating expenses. Policyholder behavior risk is mitigated by designing products that, as closely as possible, match revenue and expenses associated with the contract. Expense risk is reduced by carefully controlling expenses, and through regular expense analysis and allocation exercises.

Audited

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

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 major clients have switched into less risky investment divisions. See heading 'other contracts' in note 7 of the consolidated financial statements for additional information.

Interest rate guarantees (with concentration in traditional, guaranteed business in Germany and Switzerland 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 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 basis. These reserves for life insurance also include policyholder surplus reserves with a loss absorbing capacity, predominantly in Germany (USD 8.2 billion) and the UK (USD 0.6 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.

Table 3

in USD millions, as of December 31

Reserves, net
of reinsurance,
by region

	Unit-linked insurance contracts		Other life insurance liabilities		Total reserves	
	2017	2016	2017	2016	2017	2016
	Life					
Europe, Middle East & Africa	46,802	40,668	80,499	72,666	127,302	113,333
of which:						
United Kingdom	18,699	17,359	3,051	2,618	21,750	19,977
Germany	17,178	14,183	39,593	35,159	56,771	49,341
Switzerland	731	718	18,063	17,586	18,794	18,304
Italy	1,073	394	4,148	3,046	5,220	3,440
Ireland	3,133	2,832	2,143	1,909	5,276	4,740
Spain	856	813	11,157	10,320	12,014	11,133
Zurich international	4,784	4,068	212	334	4,996	4,402
Rest of Europe, Middle East & Africa	349	302	2,131	1,694	2,480	1,996
North America ¹	9,298	885	840	503	10,138	1,388
Asia Pacific	584	469	2,667	2,513	3,251	2,982
Latin America	13,687	11,961	5,021	4,657	18,708	16,618
Subtotal	70,371	53,983	89,027	80,339	159,398	134,322
Other businesses^{1,2}	5,042	11,546	7,733	10,205	12,775	21,752
Total	75,413	65,530	96,760	90,544	172,173	156,074

¹ In 2017, the Group transferred a portfolio of stable value products (SVP) marketed with life insurance policies (Bank Owned Life Insurance, BOLI) from Non-Core Businesses (part of Other businesses) to Life. The change resulted in a transfer of USD 8.3 billion of investments for unit-linked contracts and for reserves for unit-linked contracts.

² The Other businesses are defined in note 27 of the consolidated financial statements.

Risk review (continued)

Audited

Analysis of sensitivities for life insurance risk

The Group uses market-consistent embedded value reporting principles, which allow Zurich to increase its understanding of, and report on, the risk profile of its life products, and how these risks would change under different market conditions. Embedded value is a measure that markets use to value life businesses. For more information, see the 'embedded value report 2017' (unaudited but subject to assurance review) at www.zurich.com/investor-relations/results-and-reports.

Modeling natural catastrophes

While specific catastrophes are unpredictable, modeling helps to determine potential losses and the likelihood of such losses. The Group uses adjusted third-party models to manage its underwriting and accumulations to stay within intended exposure limits and to guide how much reinsurance Zurich buys.

To have a consistent approach and form a global perspective on accumulations, the Group models property and casualty insurance exposures in a center of excellence, which works with local businesses to help improve the overall quality of data.

The Group models potential losses from property policies in hazard-prone areas with material exposure and from workers' compensation policies covering earthquakes in the U.S. in California, the Pacific Northwest and New Madrid Seismic Zone. Other non-property-related losses are estimated based on adjustments. Risk modeling mainly addresses climate-induced perils such as windstorms, river floods, tornadoes, hail storms, and geologically induced perils such as earthquakes.

The Group constantly seeks to improve its modeling, fill in gaps in models with additional assessments, and increase the granularity of data collection. It uses internal and external knowledge in modeling accumulations. One such source of external knowledge is the Advisory Council for Catastrophes, a group of scientists associated with leading research organizations such as the U.S. National Center for Atmospheric Research, the U.S. Geological Survey and the Intergovernmental Panel on Climate Change. Furthermore, Zurich is a Governor Sponsor of the Global Earthquake Model (GEM) Foundation, a shareholder of PERILS AG, and a member of the Risk Prediction Initiative (RPI) and the Oasis Loss Modeling Framework. Zurich validates modeling results by comparing them with claims experience.

Risks from man-made catastrophes

Man-made catastrophes include such risks as industrial accidents, terrorism and cyber attacks. Zurich's experience in monitoring potential exposures to natural catastrophes is also applicable to threats posed by man-made catastrophes.

For terrorism, the Group reviews and aggregates worker injury, property and life risk exposures to identify areas of significant concentration and assesses other lines of business, such as liability and auto, although the potential exposure is not as significant. The data allow underwriters to evaluate how insuring a particular customer's risk might affect Zurich's overall exposure. Zurich uses a vendor-provided catastrophe model to evaluate potential exposures in every major U.S. city and selected cities in Europe. The Group undertakes more detailed and frequent analyses for cities in which Zurich has greater exposure. The Group's analysis for the property and casualty business has shown that its exposures outside of North America are lower, in a large part due to government-provided pools; even so, the Group assesses the risk for countries with the potential for significant net exposure. The Group periodically monitors accumulation limits for these and other areas. Outside the modeled areas, exposure concentrations are identified directly on Zurich's Risk Exposure Data Store (REDS), a system that stores information about Zurich's location-based exposure to risk in a single place. Exposure concentrations for location-based man-made scenarios other than terrorism include, for example, industrial explosions at global ports, which are also identified in REDS.

The Group models the impact from cyber scenarios. In 2017, a cyber risk expert was newly appointed as a member of the Advisory Council for Catastrophes.

Audited

Reinsurance for property & casualty and life

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 Property & Casualty (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, a new internal reinsurance vehicle was introduced in 2017. 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 facilities. Operational excellence was also the driver for the consolidation of several individual 'property per risk' treaties into one global protection.

The Group structures and aligns its external reinsurance protection to its capital position to achieve an optimum risk-return ratio. This includes a participation in the underlying risks through self-retentions. The Group manages its central reinsurance purchasing according to these principles. The cession rate for Property & Casualty was 19.7 percent and 21.2 percent as of December 31, 2017 and December 31, 2016, respectively. The cession rate for Life was 8.0 percent and 4.7 percent as of December 31, 2017 and December 31, 2016, respectively. The increased Life reinsurance cession is predominantly due to transferring the Bansabadell Vida Life portfolio reinsurance to an external reinsurer.

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, Zurich arranges per event and annual aggregate global covers as illustrated on 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 contracts are on a loss-occurrence basis except the Global Aggregate Catastrophe cover, which operates on an annual aggregate basis. The current catastrophe covers are placed annually with the exception of the USD 750 million Global Catastrophe treaty, which is a three-year treaty expiring in 2019. In addition to these covers, the Group has some local catastrophe covers, a bilateral risk swap, and various lines of business-specific risk treaties in place. These covers are reviewed continuously and are subject to change going forward.

Major changes in 2017 included the significantly decreased attachment point of the Global Aggregate Catastrophe treaty, which supports a superior earnings protection for higher-frequency catastrophe scenarios, and the increased attachment point of the U.S. catastrophe towers which was counterbalanced by an increased cession of the inuring U.S. Property Quota Share treaty.

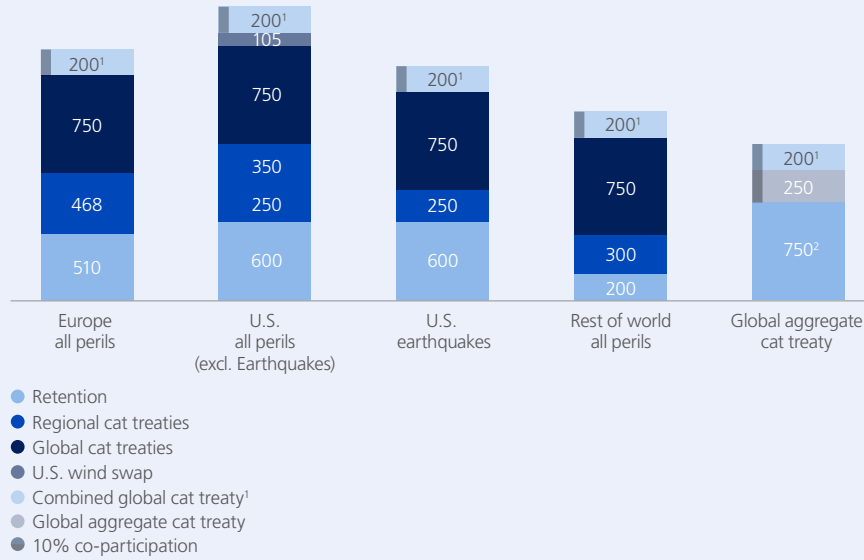
To complement existing treaties, the Group purchases catastrophe reinsurance specific to life insurance for its exposure to natural and man-made catastrophes.

Risk review (continued)

Audited

2017 Group catastrophe reinsurance protection

USD millions, as of December 31, 2017



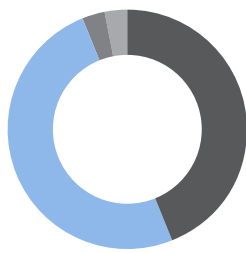
¹ This cover can be used only once, either for aggregated losses or for an individual occurrence or event.

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).

Market risk, including investment credit risk

Section highlights

Total Z-ECM capital required: USD 30.5 billion
%, as of July 1, 2017



● Insurance risk	44%
● Market risk, including investment credit risk	50%
● Other credit risk	3%
● Operational risk	3%

Key risk and capital indicators

Z-ECM, in USD billions

	Q2 2015	Q2 2016	Q2 2017
Market risk, including investment credit risk	16.3	18.7	15.2

Audited

Market risk is the risk associated with the Group's balance sheet positions where the value or cash flow depends on financial markets. 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 appetite and 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 in 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 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 risk are taken if necessary to manage fluctuations affecting asset/liability mismatch and risk-based capital.

Risk review (continued)

Audited

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. The latter instruments include cross-currency interest rate swaps in fair value hedges and cross-currency swaps in cash flow hedges of Zurich's borrowings used to mitigate exposure to foreign currency and interest-rate risk. In compliance with Swiss insurance regulation, the Group's policy prohibits speculative trading in derivatives, meaning a pattern of 'in and out' activity without 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 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 from 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 the key equity markets within a short time frame through the use of derivatives.

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 loss resulting from changes in interest rates, including changes in the shape of yield curves. The Group is exposed to interest-rate risk from debt securities, reserves for insurance contracts, liabilities for investment contracts, debt issued by the Group, commercial and residential mortgages, employee benefit plans, and loans and receivables.

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 expected probability of default, expected losses in cases of defaults of issuers, the uncertainty of default probabilities and losses.

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 in so far as they affect the amount of fee income earned if the fee income level is dependent on the valuation of the asset base.

Audited

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

Group investments sensitivities

The economic market risk sensitivities for the fair value for Group investments before tax as of 2017 is USD (10.7) billion (USD (10.4) billion as of 2016) for a 100-basis-point increase in interest rate. For a 100-basis-point decrease in interest rate, the sensitivity is USD 12.0 billion (USD 11.9 billion as of 2016). For a 10% decline in equity market, Group investments drop in value by USD 1.2 billion compared to USD 1.1 billion as of 2016. A 100-basis-point increase in credit spreads results in a decrease of USD 5.4 billion compared to USD 5.2 billion as of 2016.

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 sensitivities, management uses stress scenarios to assess the impact of more severe market movements on the Group's financial condition. For more information on stress scenarios, see 'Group economic net asset sensitivities' (unaudited), below.

Group economic net asset sensitivities

Basis of presentation – property & casualty, life, and rest of the business

The basis of the presentation for tables 4, 5, and 6 is an economic valuation represented by the fair value for 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 describes risk-free market rates as swap rates. 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. 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. The methodology for embedded value models was enhanced during 2017 to allow for negative interest rates. This caused a change in interest rate sensitivities for the Life business; see table 4.

Tables 4, 5 and 6 show the estimated economic market risk sensitivities of the net impact. Positive values represent an increase in the balance, and values in parentheses represent a decrease. Mismatches in changes in value of assets relative to liabilities represent an economic risk to the Group. The net 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.

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

Sensitivities for the rest of the business include Farmers, Group Finance and Operations, and Non-Core Businesses.

The sensitivities for 2016 reflect the new basis of presentation (net impact before tax) and include the latest liability information available for that time.

Risk review (continued)

Analysis of economic sensitivities for interest-rate risk

Table 4 shows the estimated impacts of a 100 basis point increase/decrease in yield curves after consideration of hedges in place, as of December 31, 2017 and 2016.

Table 4			
* Economic interest rate sensitivities	In USD millions, as of December 31	2017	2016
	100 basis point increase in the interest rate yield curves		
Property & Casualty			
	Net impact before tax	(278)	(323)
Life¹			
	Net impact before tax	244	(414)
Rest of the business			
	Net impact before tax	(275)	(150)
100 basis point decrease in the interest rate yield curves			
Property & Casualty			
	Net impact before tax	100	204
Life¹			
	Net impact before tax	(1,127)	(553)
Rest of the business			
	Net impact before tax	236	166

¹Modeling enhancements introduced in 2017 for the Life business reflect model revisions to allow for the introduction of negative interest rates. 2016 sensitivities presented are based on replicating portfolios calibrated to embedded value models using floored interest rate models.

Analysis of economic sensitivities for equity risk

Table 5 shows the estimated impacts from a 10 percent decline in stock markets, after consideration of hedges in place, as of December 31, 2017 and 2016.

Table 5			
* Economic equity price sensitivities	In USD millions, as of December 31	2017	2016
	10% decline in stock markets		
Property & Casualty			
	Net impact before tax	(642)	(558)
Life			
	Net impact before tax	(422)	(283)
Rest of the business			
	Net impact before tax	(74)	(50)

Analysis of economic sensitivities for credit spread risk

Table 6 shows the estimated impacts from a 100 basis points increase in corporate credit spreads, as of December 31, 2017 and 2016. The sensitivities apply to all fixed income instruments, excluding government, supranational and similar debt securities. For Life business the loss absorbing capacity of liabilities for losses on credit spreads are not included as they are not modelled in the replicating portfolios.

Table 6		2017	2016
* Economic credit spread sensitivities	In USD millions, as of December 31		
	100 basis point increase in credit spreads		
	Property & Casualty		
	Net impact before tax	(1,694)	(1,642)
	Life		
Net impact before tax	(3,095)	(3,197)	
Rest of the business			
Net impact before tax	(564)	(384)	

* Limitations of the economic sensitivities: same limitations apply as for Group investments sensitivities except that the above sensitivities are based on economic net assets including liability representation see 'basis of representation'.

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.

Table 7		2017		2016	
Debt securities by rating of issuer	as of December 31	USD millions	% of total	USD millions	% of total
	Rating				
AAA		37,426	25.2%	28,503	20.3%
AA		39,664	26.7%	46,497	33.2%
A		26,011	17.5%	23,133	16.5%
BBB		38,360	25.9%	35,733	25.5%
BB and below		6,033	4.1%	5,193	3.7%
Unrated		767	0.5%	1,122	0.8%
Total		148,261	100.0%	140,181	100.0%

Table 7 shows the credit risk exposure of debt securities, by issuer credit rating. As of December 31, 2017, 95.4 percent of the Group's debt securities was investment grade and 25.2 percent was rated 'AAA'. As of December 31, 2016, 95.5 percent of debt securities was investment grade and 20.3 percent was rated 'AAA'. The shift in portfolio exposure from AA to AAA largely reflects the outcome of a review of the ratings assigned to U.S. agency mortgage-backed-securities, which moved assets from AA+ to AAA.

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

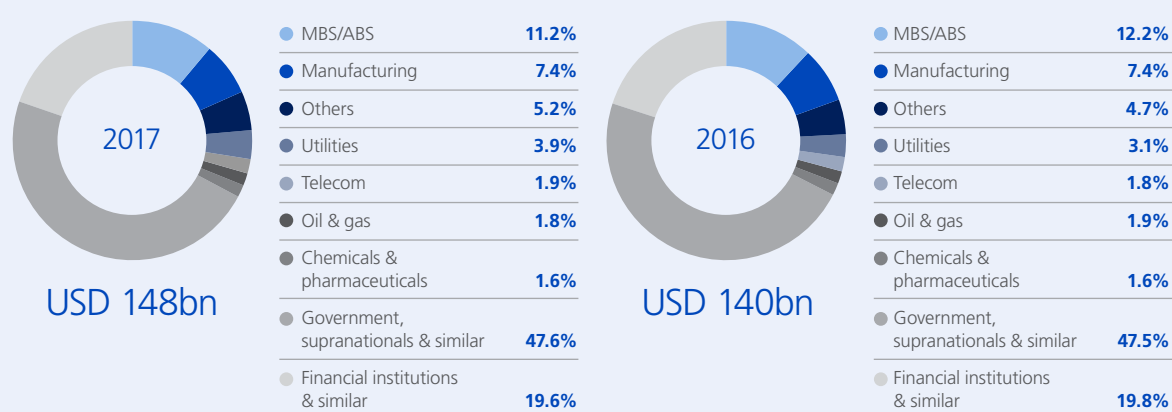
Risk review (continued)

Audited

The risk-weighted average issuer credit rating of the Group's debt securities portfolio is 'A-' in 2017, compared with 'BBB+' in 2016.

Debt securities – credit risk concentration by industry

%, as of December 31



As of December 31, 2017, the largest concentration in the Group's debt securities portfolio was in governments, supranationals and similar at 47.6 percent. In all other categories, a total of USD 31.7 billion (40.8 percent) was secured. As of December 31, 2016, 47.5 percent of the Group's debt portfolio was invested in governments, supranationals and similar. In all other categories, a total of USD 31.3 billion (42.5 percent) was secured.

Table 8

in USD millions, as of December 31

	2017	2016
Germany	4,352	3,269
France	6,689	6,159
Austria	2,344	1,934
Belgium	2,506	2,267
Netherlands	1,303	1,273
Greece	–	–
Ireland	629	521
Italy	9,756	9,128
Portugal	773	551
Spain	7,989	6,804
Rest of eurozone	680	742
Eurozone supranationals and similar	1,639	1,388
Total	38,658	34,037

The Group's debt exposure to eurozone governments and supranationals and similar

In addition to debt exposure, the Group had loan exposure of USD 4.9 billion and USD 4.3 billion to the German Central Government or the German Federal States as of December 31, 2017 and 2016, respectively. For more information, see the 'other loans' section.

The second-largest concentration in the Group's debt securities portfolio is in financial institutions (including banks), at 19.6 percent, of which 38.4 percent is secured.

The third-largest concentration in the Group's debt securities portfolio is in structured finance securities (mortgage-backed securities (MBS)/asset-backed securities (ABS) and similar).

Audited

Cash and cash equivalents

To reduce 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 8.2 billion as of December 31, 2017 and USD 7.2 billion as of December 31, 2016. The risk-weighted average rating of the overall cash portfolio is 'A-' as of December 31, 2017 and December 31, 2016. 74 percent of the total was with the 10 largest global banks, whose risk-weighted average rating is 'A' as of December 31, 2017 and December 31, 2016.

Mortgage loans and other loans

The Group's largest mortgage loan portfolios are held in Germany (USD 2.6 billion) and in Switzerland (USD 3.6 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 0.6 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: 59.6 percent of the reported loans are to governments, supnationals and similar, of which 94.2 percent are to the German central government or the German federal states. As of December 31 2017, USD 5.1 billion were rated as 'AAA' (58.1 percent) compared with 3.9 billion as of December 31, 2016, USD 0.7 billion as 'AA' (7.7 percent) compared to 0.6 billion as of December 31, 2016, USD 0.6 billion as 'A' (6.8 percent) compared to with 3.3 billion as of December 31, 2016, USD 1.2 billion as 'BBB' and below (13.5 percent) compared with 1.3 billion as of December 31, 2016, and USD 1.2 billion as unrated (14.0 percent) compared with none as of December 31, 2016.

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 typically executed with counterparties rated 'A-' or better by an external rating agency, unless collateral is provided as per Zurich's risk policy manuals. 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 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 the euro, Swiss franc and British pound, as well as the 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 9 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

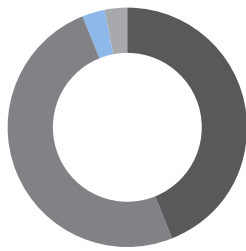
Table 9			
in USD millions, as of December 31			
10% increase in			
Sensitivity of the Group's total IFRS equity to exchange rate fluctuations			
		2017	2016
	EUR/USD rate	467	515
	GBP/USD rate	245	208
	CHF/USD rate	447	457
	BRL/USD rate	147	139
	Other currencies/USD rates	645	546

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 9 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

Section highlights

Total Z-ECM capital required: USD 30.5 billion
%, as of July 1, 2017



● Insurance risk	44%
● Market risk, including investment credit risk	50%
● Other credit risk	3%
● Operational risk	3%

Key risk and capital indicators

Z-ECM, in USD billions

	Q2 2015	Q2 2016	Q2 2017
Reinsurance credit risk	1.0	0.6	0.9

Audited

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 regularly tests and analyzes credit risk scenarios and prepares possible contingency measures that may be implemented if the credit risk environment worsens.

The Group actively uses collateral to mitigate credit risks. Nevertheless, 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, deductibles, trade credit and surety.

Credit risk concentration

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 for the largest counterparties, certain insurance products. There was no unapproved material exposure in excess of the Group's limits for counterparty aggregation as of December 31, 2017 or December 31, 2016.

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 also has off-balance sheet exposures related to undrawn loan commitments of USD 16 million and USD 7 million as of December 31, 2017 and 2016, respectively. 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 manages the credit quality of cessions and reinsurance assets. The Group typically cedes new business to authorized reinsurers with a minimum rating of 'A-'. As of December 31, 2017 and 2016 respectively, 52 percent and 66 percent of the exposure ceded to reinsurers that are rated below 'A-' or are not rated is collateralized. Of the exposure ceded to reinsurers that are rated below 'A-' or are not rated, 51 percent was ceded to captive insurance companies, in 2017 and 32 percent in 2016.

Reinsurance assets included reinsurance recoverables (the reinsurers' share of reserves for insurance contracts) of USD 21 billion and USD 18.4 billion, and receivables arising from ceded reinsurance of USD 1.2 billion and USD 1.4 billion as of December 31, 2017 and 2016, respectively, gross of allowance for impairment. Reserves for potentially uncollectible reinsurance assets amounted to USD 94 million as of December 31, 2017 and 2016. 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 10 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. Except for an immaterial amount, letters of credit are from banks rated 'A-' or better. Compared with December 31, 2016, collateral increased by USD 1.0 billion to USD 9.4 billion.

Table 10 shows reinsurance assets and unsecured reinsurance assets split by rating.

Table 10

as of December 31

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

Rating	2017				2016			
	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
AAA	–	0.0%	–	0.0%	29	0.1%	29	0.3%
AA	5,939	26.9%	5,378	42.5%	5,402	27.4%	4,479	39.5%
A	10,562	47.9%	4,619	36.5%	8,625	43.7%	4,903	43.3%
BBB	1,634	7.4%	974	7.7%	1,366	6.9%	877	7.7%
BB	247	1.1%	57	0.5%	566	2.9%	311	2.7%
B and below	638	2.9%	168	1.3%	395	2.0%	160	1.4%
Unrated	3,036	13.8%	1,446	11.4%	3,367	17.0%	576	5.1%
Total¹	22,056	100.0%	12,642	100.0%	19,749	100.0%	11,335	100.0%

¹ The value of the collateral received amounts to USD 9.4 billion and USD 8.4 billion as of December 31, 2017 and 2016, respectively.

Audited

Credit risk related to receivables

The Group's largest 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 should be regarded as unsecured, but 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.

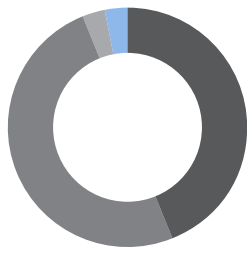
Receivables from ceded reinsurance are part of reinsurance assets and are managed accordingly. See notes 15 and 24 of the consolidated financial statements for additional information on receivables.

Risk review (continued)

Operational risk

Section highlights

Total Z-ECM capital required: USD 30.5 billion
%, as of July 1, 2017



● Insurance risk	44%
● Market risk, including investment credit risk	50%
● Other credit risk	3%
● Operational risk	3%

Key risk and capital indicators

Z-ECM, in USD billions

	Q2 2015	Q2 2016	Q2 2017
Operational risk	0.9	0.6	0.9

Audited

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people, systems or from external events such as external fraud, catastrophes, or failure in outsourcing arrangements.

Zurich has a comprehensive framework with a common approach to identify, assess, quantify, mitigate, 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 Z-ECM capital required. See chart 'Z-ECM capital required for operational risk split by risk scenarios (unaudited)' for more information.
- Documents and reviews loss events exceeding a threshold determined per Zurich's risk policy manuals. Remedial action is taken to avoid a recurrence of such operational loss events.
- Conducts risk assessments where operational risks are identified for key business areas. Risks identified and assessed above a certain threshold must be mitigated. Risk mitigation plans are documented and tracked on an ongoing basis. In the assessments, the Group uses such sources of information as the Total Risk Profiling™ process, internal control assessments, and audit findings, as well as scenario modeling and loss event data.

The Group has specific processes and systems in place to focus on high-priority operational matters such as managing information security and third-party suppliers, as well as combating fraud.

Zurich mitigates and responds to cyber risks and threats to data security. Data held by Zurich's business partners are protected through contractual arrangements and controls that are built into 'cloud governance' procedures designed to secure Zurich's data in accordance with regulatory requirements and the Group's information security policies.

The Group regularly assesses risks associated with strategic suppliers to verify that suppliers remain financially viable and able to deliver services, and that the Group is not exposed to geographic and supplier concentration risks.

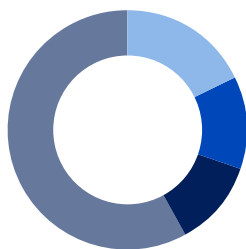
Preventing, detecting and responding to fraud are embedded in Zurich's business. Both claims and non-claims fraud are included in the common framework for assessing and managing operational risks. For Z-ECM calculations, claims fraud is part of insurance risk and non-claims fraud is part of operational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

As part of Z-ECM, the Group uses a scenario-based approach to assess, model and quantify the capital required for operational risk under extreme circumstances and with a very slight probability of occurrence. The chart below shows the operational risk scenarios that have the highest impact on Z-ECM capital required.

Z-ECM capital required for operational risk, split by risk scenario clusters

as of July 1, 2017

Risk scenario clusters contributing to the Z-ECM capital required for operational risk



- **Regulatory and tax compliance:** This risk cluster relates to possible non-compliance with applicable laws and regulations, leading to a range of consequences. It includes fines and penalties, litigation, compensation to policyholders, increased regulatory scrutiny, financial losses and increased cost of compliance, as well as consequences from a possible failure to comply with tax requirements. **17.8%**
- **Market abuse, mis-selling and conduct of business:** This risk cluster relates to the possibility that staff, processes or systems may operate in ways that lead to inappropriate conduct of business in relation to the customer. It includes the possibility of investigations, sanctions and fines imposed on Zurich as a company or any member of staff as a result of market abuse, mis-selling practices leading to regulatory breach or increased compensation. **12.5%**
- **M&A – due diligence and integration:** This risk cluster relates to poor execution of both the due diligence and the post-M&A integration processes. It includes the understatement of liabilities and required investments, operational or legal risks in the acquired business, inadequate transaction decisions, loss of key staff, inability to realize synergies or deliver benefits. **11.9%**
- **Other scenarios, e.g., project management, employment malpractice, record retention, licensing, outsourcing** **57.8%**

Risk management and internal controls

The Group considers controls to be key instruments for managing operational risk. The Board has overall responsibility for the Group's risk management and internal control frameworks, in particular for their adequacy and integrity. The Group's internal control system increases the reliability of Zurich's financial reporting, makes operations more effective, and aims to ensure legal and regulatory compliance. The internal controls system is designed to mitigate rather than eliminate the material risk that business objectives might not be met. It provides reasonable assurance against material financial misstatements or operational losses.

The Group promotes risk awareness and understanding of controls with communication and training. Primary 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 addressing significant risks, and designing, implementing and maintaining internal controls. Key processes and controls in the organization are subject to reviews by management, Group Risk Management, Group Compliance, and Group Audit. Significant risks and associated mitigation actions are reported regularly to the Risk and Investment Committee and the Audit Committee of the Board.

In 2017, the Group further enhanced specific areas of the internal control framework, focusing on significant financial reporting controls as well as controls to ensure the integrity of our regulatory and internal capital calculations. Significant controls are assessed for their design and operating effectiveness. Significant control issues or issues affecting more than one business unit may be categorized as having Group-level significance. The Risk and Investment Committee of the Board and the Audit Committee of the Board monitor resolution of such issues.

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, which may challenge further. The Board reviews and approves results announcements and the annual report. This ensures that both the Board and management have sufficient opportunity to review and challenge the Group's financial statements and other significant disclosures before they are made public.

Risk review (continued)

The Risk and Investment Committee of the Board has reviewed the effectiveness of the Group's risk management system, including the Group's risk tolerance and enterprise-wide risk governance framework, and the Audit Committee of the Board has reviewed the effectiveness of the system of control over financial reporting for the calendar year 2017 and has reported to the Board accordingly. Issues identified have been communicated to the Board and have been or are being addressed by the Group.

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

Audited

Liquidity risk

Liquidity risk is the risk that 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 carriers 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 Group's potential liquidity needs, 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 monitors that the liquidity of assets stays in line with the liquidity needs. During 2017, the Group was within its capacity to hold illiquid assets.

The fair value hierarchy tables in note 23 of the consolidated financial statements segregate financial assets into three levels, reflecting the basis for how fair value was determined. These tables indicate the high degree of liquidity of the Group's investments.

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.

Audited

Strategic risk and risks to the Group's reputation

Strategic risk

Strategic risk corresponds to the risk that Zurich is unable to achieve its strategic targets.

Strategic risks can arise from:

- Inadequate assessment of strategic plans
- Ineffective implementation of strategic plans
- Unexpected changes to assumptions underlying strategic plans

Zurich defines the strategy as the long-term plan of action designed to allow the Group to achieve its goals and aspirations.

The Group works to reduce unintended risks of strategic business decisions through its risk assessment processes and tools, including the Total Risk Profiling™ (TRP) process. As part of the regular TRP process, in 2017 the Executive Committee (ExCo) assessed the key strategic risk scenarios, looking at 2018 and beyond. The Group TRP identified and assessed risks from both external and internal factors. External risks include changes in inflation or interest rates beyond expected forecasts; geopolitical uncertainties such as Brexit; looming European banking crisis; insurance market trends, and changing customer expectations. Internally, key risks include Zurich's ability to engage and provide service to customers at the desired level; technical excellence in underwriting; information security and cyber threats; challenges related to Zurich's workforce, and managing the growing requirements and complexity of the global regulatory landscape. Mitigation actions have been assigned to executive owners and their status is reviewed at least quarterly.

The Group evaluates the risks of 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 type of risk helps reduce threats to Zurich's reputation.

The Group aims to preserve its reputation by adhering to applicable laws and regulations, and by following the core values and principles of the Group's code of conduct, which promotes integrity and good business practice. The Group centrally manages certain aspects of reputation risk, for example, communications, through functions with the appropriate expertise.

Risk review (continued)

Climate-change risk

Climate change is perhaps the most complex risk facing society today: it is inter-generational, international and interdependent. As a global insurer, Zurich faces risks from climate change. In 2017, Zurich conducted its first Group-wide analysis of climate change-related risks and identified a set of actions to address them.

Zurich uses the framework of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD) to distinguish between two types of climate-related risks:

-
- Transition risk – risks associated with the transition to a low-carbon economy
 - Physical risks – risks associated with physical manifestations of excessive warming
-

Zurich based its analysis on two scenarios to represent an archetypical transition pathway and a physical risk pathway, and applied a scorecard approach to assess the relative likelihood of the two scenarios, and their progression along pathways over time. The two scenarios are not mutually exclusive as transition risks and physical risks coexist, but Zurich's initial assessment shows that a physical risk pathway currently is significantly more likely than a transition pathway.

Overall the Group considers its near-term (less than five years) climate change-related risks to be manageable and foreseeable, whereas long-term (more than 10-15 years) risks to be elevated and highly uncertain.

The Group analyzed the effect of climate-change risk on its major risk types:

-
- Underwriting risks:
-

Physical risks: Generally, annual policy renewals provide a degree of insulation against increasing physical risks for short-tail business. Initial analysis suggests that property, motor and crop lines of business are potentially most at risk from climate change, with rainfall, cyclone and hail as the driving perils. While standard industry natural catastrophe models are regularly updated and designed to reflect today's risk, including climate change, potential gaps are addressed as part of Zurich's model validation process and the 'Zurich View' approach, leveraging both internal and external expertise. For long-tail business, legal liability represents the most significant potential risk from climate change. However, based on Zurich's current assessment, this and related risks are not material at this time, although climate change-related legal action could become more frequent going forward.

Transition risks: Specific lines of business may be at risk from transition effects. Initial assessment suggests that this risk is contained. Zurich has considerable expertise in providing insurance solutions for green assets but not all types of 'green' assets represent, to date, profitable business opportunities.

-
- Investment risks: Zurich analyzed physical and transition risks for selected parts of its investment portfolio. While Zurich is exposed to both near-term transition and long-term physical risk, initial analysis suggests that very significant impairments would be required for the Zurich portfolio to be materially impacted. The Group does not consider such impairments currently likely, and exposure is expected to be further mitigated with ongoing implementation of Zurich's responsible investment and climate change investment strategies.
 - Operational risks: Given the low-carbon nature of Zurich's business, continuous progress on energy and carbon reduction targets, Zurich's voluntary carbon offsetting scheme, and strong local disaster and recovery planning in place for all facilities, Zurich does not consider operational risks related to climate change to be material.
-

Efforts are underway to further assess climate change-related risk exposures for underwriting and investment portfolios. Among its follow-up actions, the Group plans to further analyze its underwriting portfolio for transition risk, amend its governance requirements to reflect climate risk in catastrophe modeling, and monitor and assess opportunities in green assets.

In addition, the Group is integrating climate and sustainability risk assessments into its standard enterprise risk management framework and tools to consistently identify risks and create mitigating actions over time. For more information about Zurich's assessment of climate risk, see www.zurich.com/en/knowledge/articles/2017/11/me-topic-navigating-climate-change.

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