Zurich Reinsurance Company Ltd

Financial Condition Report 2018

Zurich Reinsurance Company Ltd

Contents

The information published in this report is consistent with the information in the Annual Report 2018 of Zurich Reinsurance Company Ltd and the regulatory reporting of Zurich Reinsurance Company Ltd, including the regulatory reporting to the Swiss Financial Market Supervisory Authority (FINMA) on the Swiss Solvency Test, in accordance with art. 25 ISA and art. 53 ISO. While the financial statements and the information therein were subject to audit by the statutory auditor of Zurich Reinsurance Company Ltd, PricewaterhouseCoopers AG (see Annual Report 2018), there was no external audit or review of this report. Please further note that this report was not reviewed by FINMA.

Overview

Business profile

Zurich Reinsurance Company Ltd (ZRe) is a reinsurance company domiciled in Zurich, Switzerland. The company is a standalone legal entity that has both a reinsurance and a direct non-life insurance license issued by FINMA. The company belongs to the Zurich Insurance Group (Group). ZRe's focus is on providing reinsurance solutions to affiliated companies of the Group, primarily to branches of Zurich Insurance Company Ltd (ZIC). ZRe's direct book is in run-off.

System of governance

Good corporate governance enables ZRe to create sustainable value for its shareholder, customers, employees and other stakeholders.

ZRe's enterprise risk management (ERM) framework supports achievement of the Group's strategy and helps protect capital, liquidity, earnings and reputation.

Risk profile

Taking risk is inherent to the insurance business, but such risk-taking needs to be made in an informed and disciplined way. This is the primary objective of ZRe's risk management. The main risks identified are premium and reserve risk, credit risk and market risk.

The Total Risk Profiling™ process is used to evaluate both external and internal risks to our strategy and financial plan. Among the risks identified in 2018 are dependency on counterparty, pricing and reserving adequacy and regulatory compliance.

The significant risks for ZRe, as measured by capital metrics, are premium and reserve risks.

Financial condition

ZRe reported a net income after taxes of CHF 34 million for 2018, compared to CHF 54 million for 2017. The results in 2018 were driven by strong performance of some of the assumed reinsurance business.

Net income after taxes 2018

CHF 34m

Shareholder's equity

CHF 701m

Swiss Solvency Test ratio as of December 31, 2018

279%

Acronyms

AC	Audit Committee
AER	administration expense ratio
AFR	Available Financial Resources
AG	Aktiengesellschaft
AGM	Annual general meeting
ALV	Arbeitslosenversicherung (Swiss unemployment insurance)
BEL	best estimate liabilities
Board	Board of Directors
CAD	Canadian Doller
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHF	Swiss franc
CO	Swiss Code of Obligations
CRO	Chief Risk Officer
DF	discount factor
EMEA	Europe, Middle East, Africa
ERM	enterprise risk management
FCR	Financial Condition Report
FINMA	Financial Market Supervisory Authority
GA	Group Audit
Group	Zurich Insurance Group Ltd and its subsidiaries
GWP	gross written premiums and policy fees
HKD	Hong Kong Dollar
IFRS	International Financial Reporting Standards
IIA	Institute of Internal Auditors
ISA	Swiss Insurance Supervision Act
ISO	Insurance Supervision Ordinance
m	million
MCBS	market-consistent balance sheet
nat cat	natural catastrophe
LAE	loss adjustment expenses
ORSA	own risk and solvency assessment
PwC	PricewaterhouseCoopers AG
Q	quarter
RBC	Risk Based Capital
SFCR	Solvency & Financial Condition Report
SST	Swiss Solvency Test
TRP	Total Risk Profiling
UPR	unearned premium reserves
U.S.	United State of America
USD	U.S. dollar
ZIC	Zurich Insurance Company Ltd
ZIG	Zurich Insurance Group Ltd (holding company)
ZRe	Zurich Reinsurance Company Ltd
Zurich	Zurich Insurance Group Ltd and its subsidiaries

Introduction

0. How to read the report

Zurich Reinsurance Company Ltd ("ZRe" or "the company")'s financial condition report is prepared in compliance with the Swiss insurance supervision act (ISA) article 26, the insurance supervision ordinance (ISO) article 111a and FINMA's Circular 2016/2 'Disclosure – insurers'. The report focuses on the 2018 financial year and should be read in conjunction with ZRe's annual report 2018 (available on www.zurich.com/en/investor-relations/ results-and-reports/other-statutory-filings). Wherever applicable, this report refers to the Zurich Insurance Group's Financial Condition Report or the Zurich Insurance Group's Annual Report for more information.

The report presents information following the structure provided in FINMA's circular. It covers ZRe's business activities, performance, corporate governance and risk management, risk profile, valuation, capital management and solvency. Quantitative information refers to different frameworks applicable or mandatory to the company:

- 'Business activities'-related and 'Performance' results are presented based on the Swiss statutory reporting standards applicable to ZRe (Swiss Code of Obligations (CO) and relevant insurance supervisory law).
- The 'Risk profile' section presents based on the Swiss statutory reporting standards for insurance risk, and a net economic asset value-based analysis of the market and credit risk.
- 'Valuation' presents the market-consistent balance sheet (MCBS) of ZRe following the Swiss Solvency Test (SST) principles. The SST MCBS is compared with the balance sheet based on the Swiss statutory reporting standards of ZRe as of December 31, 2018.
- The 'Solvency' section shows the regulatory capital adequacy of the company based on SST.

Risk and capital are managed at ZRe according to Zurich Insurance Group's risk and capital management framework. The principles of the Zurich Insurance Group's enterprise risk management described in the 'Corporate governance and risk management section' and in the 'Risk profile' section are applicable to ZRe. There is no material difference between how risk and capital are managed at the Zurich Insurance Group and ZRe.

FINMA mandates the disclosure of quantitative templates for insurance entities that are included in Appendix 1.

All amounts, unless otherwise stated, are shown in CHF, rounded to the nearest million, with the consequence that the rounded amounts may not add up to the rounded total in all cases. All variances are calculated using the actual figures rather than the rounded amounts.

Introduction *continued*

1. Executive summary

Business activities

ZRe is a reinsurance company domiciled in Zurich, Switzerland. It was licensed in Switzerland on December 15, 2016. ZRe's focus is on providing reinsurance solutions to affiliated companies of the Group, primarily to branches of Zurich Insurance Company Ltd (ZIC). In addition, ZRe is running off a legacy book of direct insurance.

Company results

ZRe reported a net income after taxes of CHF 34 million for 2018, compared to CHF 54 million for 2017. The results in 2018 as well as in 2017 were driven by strong performance of some of the assumed reinsurance.

Corporate governance and risk management

ZRe is a member of the Zurich Insurance Group ('Zurich' or 'the Group'). The Group is committed to effective corporate governance for the benefit of its shareholders, customers, employees and other stakeholders based on the principles of fairness, transparency and accountability. Structures, rules and processes are designed to provide proper organization and conduct of business within Zurich and to define the powers and responsibilities of its corporate bodies and employees. These principles are also applied to ZRe.

Taking risk is inherent to the insurance business, but such risk-taking needs to be made in an informed and disciplined way, and within a pre-determined risk appetite and tolerance. This is the primary objective of ZRe's risk management.

Risk profile

ZRe uses the Total Risk Profiling™ process to monitor both external and internal risks to our strategy and financial plan. Among the risks identified in 2018 were dependency on counterparties, adequacy of assumed reinsurance pricing and established reserves and regulatory compliance.

In 2018, ZRe produced an own risk and solvency assessment (ORSA), as required by the Swiss regulator FINMA. The analysis of the forward-looking scenarios was widened.

Valuation

ZRe's market-consistent assets and liabilities are derived and valued in accordance with FINMA guidelines and are then matched to calculate the Available Financial Resources (AFR) in ZRe's market-consistent balance sheet (MCBS).

Solvency

ZRe assesses its solvency under the Swiss Solvency Test (SST), which is a principle-based, risk sensitive supervision framework. ZRe's SST ratio as of December 31, 2018, was 279 percent.

2. Approval of the Financial Condition Report

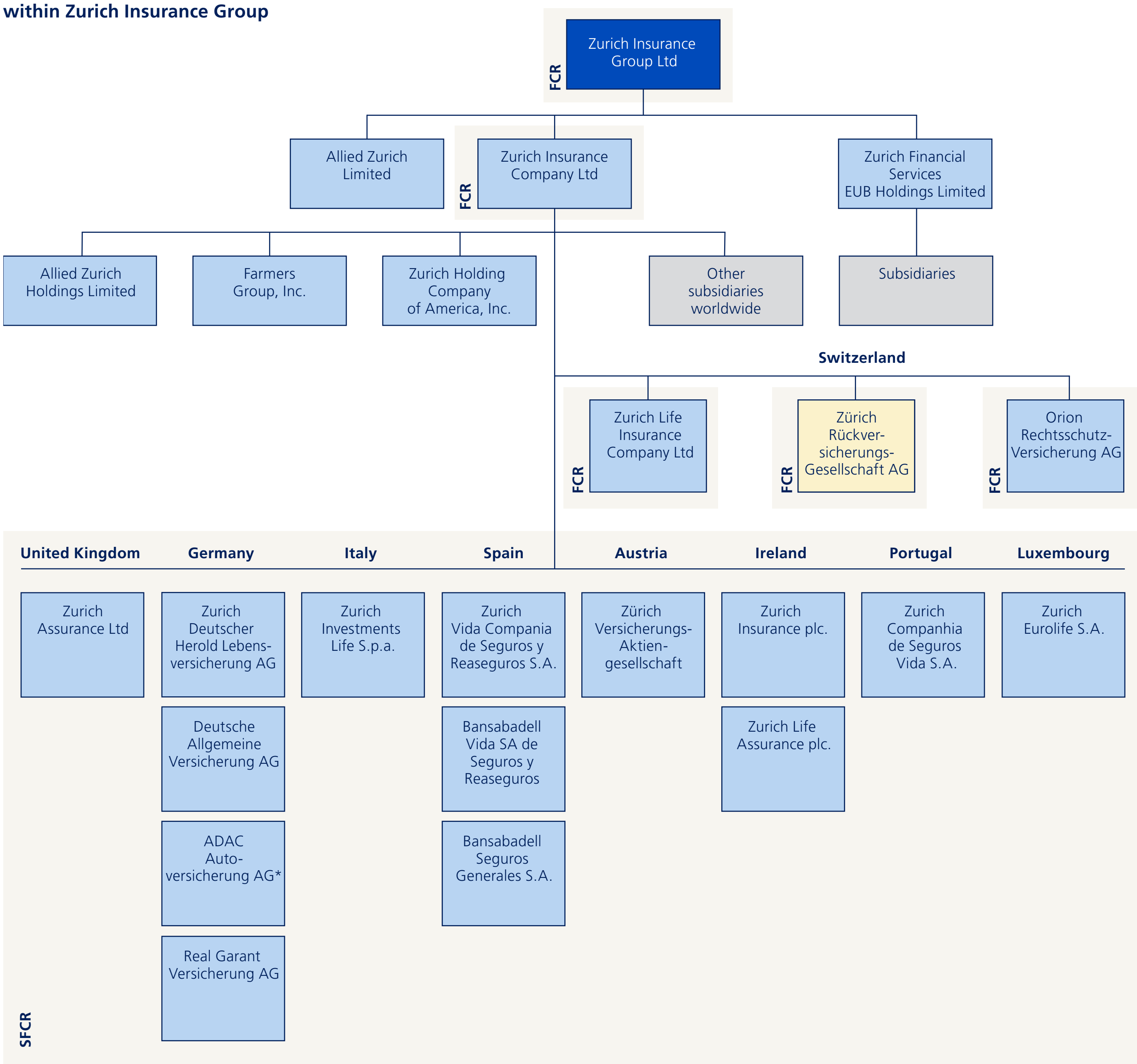
This report was reviewed and signed off by the Board of Directors (Board) of Zurich Reinsurance Company Ltd on April 23, 2019.

A. Business activities

A.1 Legal structure and major subsidiaries and branches

ZRe is part of the Zurich Insurance Group, a leading multi-line insurer that serves its customers in global and local markets.

Public reporting on solvency and financial condition within Zurich Insurance Group



SFCR: Solvency and Financial Condition Report (Solvency II; from 2016) **FCR:** Financial Condition Report (Swiss regulation; from 2017)

Subsidiary Group of subsidiaries Current disclosure

Note: The purpose of the chart above is to provide a simplified overview of the Group's major subsidiaries (as of December 31, 2018), with special focus on the public reporting of their solvency and financial condition. Please note that this is a simplified representation showing entities that must publish such a report and therefore it may not comprehensively reflect the detailed legal ownership structure of the entities included in the overview. The ordering of the legal entities under each country is not indicative of ownership; these are independent legal entities.

*on December 21, 2018, the Group entered into an agreement to sell its 51% participation in ADAC Autoversicherung AG. The sale of the shares in ADAC Autoversicherung AG became effective as of January 1, 2019.

A. Business activities *continued*

ZRe is a 100 percent subsidiary of ZIC, which in turn is wholly owned by Zurich Insurance Group Ltd, the ultimate holding company of the Group.

A.2 Information about the company's strategy, objectives and key business segments

ZRe's strategy is to actively facilitate an optimal capital and risk management strategy through intra-group reinsurance. It aims to provide capacity for customers while protecting the balance sheet, managing earnings volatility and achieving capital efficiency.

ZRe's main activity is assuming property and casualty risks from affiliated companies of the Group. ZRe retains a certain number of treaties.

ZRe's strategy is tailored to customers and product propositions as follows:

- Provides risk and solvency relief to Zurich branches and subsidiaries by way of treaty reinsurance.
- Supports Zurich's international program business by assuming reinsurance from mostly local Zurich branch offices issuing local policies and retroceding such business to the Zurich 'producing company' or to a central Zurich balance sheet (the 'clearing house').
- Participates in Zurich Group's own insurance programs / protections by meaning of insurance, co-insurance or facultative reinsurance.
- Manages the run-off of a clearly identified book of businesses that is no longer written by ZRe.

Outsourcing of services

As of December 15, 2016, ZRe and ZIC entered into an employment services agreement ('Personalverleihvertrag'), under which ZIC committed to make available certain services. The key roles and responsibilities that are subject to this employment services agreement are the members of the ZRe Management Board, the appointed actuary and the heads of Risk Management and Compliance. ZRe draws on ZIC to provide all other services not subject to the employment services agreement based on an outsourcing agreements between ZRe and ZIC, which was revised as of December 15, 2016.

A.3 Information about the company's external auditors as per article 28 ISA 8

PricewaterhouseCoopers AG (PwC), Birchstrasse 160, in 8050 Zurich, is ZRe's external auditor.

PwC assumes all auditing functions, which are required by law and by the ZRe's articles of association. The external auditors are appointed by the shareholder of ZRe annually. At ZRe's Annual General Meeting on April 18, 2018, PwC was re-elected by the shareholder of ZRe.

A.4 Significant unusual events

There have been no significant unusual events in 2018 and 2017, respectively.

B. Performance

ZRe reported a net income after taxes of CHF 34 million for 2018 and CHF 54 million for 2017. The results are in line with management's expectations, whereas the results in 2017 were marginally higher than planned, driven by strong performance of some of the assumed reinsurance business.

The investment income result was driven by a combination of third-party invested assets and Group-internal loans, and developed in line with expectations.

B.1 Underwriting performance

Business emanated primarily from three sources:

- Reinsurance of the Group's entities in Asia Pacific, mainly business assumed from ZIC's Japan branch, which primarily originated from quota share reinsurance for the personal accident and motor business. In 2018, the business assumed from ZIC's Japan branch for the Japan motor was expanded, and led to an increase in gross written premiums and policy fees.
- International program business, through which ZRe supports the Group's international program business propositions for its corporate and commercial clients. This insurance risk is retroceded to ZIC and not retained in ZRe.
- The run-off business continued to be managed carefully and had a minimal impact on the overall underwriting performance.

Key markets

Gross written premiums and policy fees were generated primarily from two areas:

Gross written premiums and policy fees totaled CHF 862 million. Ninety percent of these premiums came from three primary lines of business written: personal accident (reinsurance for ZIC's Japan branch); property (primarily International Programme business and reinsuring Asia Pacific entities) and motor (reinsurance for ZIC's Japan branch). In 2018, the gross written premiums for the business assumed from ZIC's Asian branches increased due to a higher participation in the quota share agreements. As ZRe's direct business is all in run-off, the gross written premiums and policy fees are related to assumed business solely.

B.2 Investment performance

Investment income by category

in CHF millions, for the years ended December 31	Current income		Realized capital gains		Write-ups		Totals	
	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**
Investments in subsidiaries and associates	–	–	–	–	–	–	–	–
Debt securities	5	6	1	–	–	–	7	7
Other loans	4	4	–	–	–	–	4	4
Other investments	–	–	–	–	–	–	–	–
Investment income	**9**	**10**	**2**	**–**	**–**	**–**	**11**	**11**

Investment expenses by category

in CHF millions, for the years ended December 31	Realized capital losses		Write-downs		Totals	
	2017	**2018**	2017	**2018**	2017	**2018**
Investments in subsidiaries and associates	–	–	–		–	–
Debt securities	(1)	(12)			(1)	(12)
Other loans	–	–	–	–	–	–
Other investments	–	–	–	–	–	–
Other investment expenses	n.a.	n.a.	n.a.	n.a.	–	–
Investment expenses	**(1)**	**(12)**	**–**	**–**	**(1)**	**(12)**

B. Performance *continued*

ZRe's net investment income (including realized capital gains and losses) for the period January 1, 2018, to December 31, 2018, was CHF –1.4 million. The result is the aggregation of three portfolios of assets denominated in Canadian Dollar (CAD), United State Dollar (U.S. Dollar or USD) and Hong Kong Dollar (HKD). For the U.S. portfolio, the result was underpinned by a rise in U.S. interest rates. At the short end of the curve, a series of interest rate rises by the U.S. Federal Open Markets Committee pushed short end rates higher by circa 100 basis points, aiding short dated cash, and floating rate assets. At the longer end of the curve, the rise in rates was far less pronounced, as the 30-year duration rose in the order of 25 basis points. U.S. credit spreads widened over the year, with the entire curve moving in a reasonably parallel or even manner across the key rate durations. Within the CAD portfolio, interest rate dynamics on the sovereign curve were similar to that of the U.S., insofar as the short end widened in yield terms. In contrast however, the longer end of the curve at durations greater than 10-years rallied by circa 10 basis points (meaning interest rates declined by the end of period relative to the start of the period). For the HKD portfolio, a switch from sovereign bonds to a higher credit exposure considerably lifted the portfolio-running yield by 90 basis points to 2.02 precent.

In an aggregate sense, realized capital losses were in the order of CHF 12.1 million, as ZRe exited its holdings of securitized assets in the U.S., and trimmed back of HKD sovereign bonds. As in prior years, the investment assets remained outsourced to external asset managers.

B.3 Intra-group events and transactions

Transactions in 2018

There were no material intra-group events or transactions not mentioned otherwise in this report in 2018 or 2017.

C. Corporate governance and risk management

C.1 Corporate governance

The Zurich Insurance Group consisting of Zurich Insurance Group Ltd and its subsidiaries including ZRe is committed to effective corporate governance for the benefit of all its shareholders, customers, employees and other stakeholders based on the principles of fairness, transparency and accountability. Structures, rules and processes are designed to provide proper organization and conduct of business by the powers and responsibilities of its corporate bodies and employees.

Zurich uses the three-lines-of-defense model in its approach to governance and enterprise risk management. Zurich's three-lines-of-defense approach runs through Zurich's governance structure, so that risks are clearly identified, assessed, owned, managed and monitored. For further information, please see Zurich Insurance Group's Annual Report 2018, page 72.

At ZRe, various governance and control functions help to ensure that risks are identified and appropriately managed. Internal controls are in place and operating effectively. Although each governance and control function maintains its distinct mandate and responsibilities, the functions are closely aligned and co-operate with each other through a regular exchange of information, planning and other activities. This approach supports management in its responsibilities and provides confidence that risks are appropriately addressed and that adequate mitigation actions are implemented.

The Board, under the leadership of the Chairman, is responsible for determining the overall strategy of ZRe and the supervision of management. It holds the ultimate decision-making authority for ZRe, except for decisions on matters reserved to the shareholder.

The members of the Board are elected by the annual general meeting (AGM) in accordance with CO article 698. The Board constitutes itself in its first meeting after the AGM.

Board of Directors (as of December 31, 2018)

Board of Directors	Expiration of current term of office
Juan José Beer, Chairman	2019
Christian Felderer	2019
Christian Carl	2019

Andres Christen, Secretary of the Board of Directors

Management	Position held
Felix R. Kuhn	Chief Executive Officer
Elena Kuratli	Chief Financial Officer
Roger Oberholzer	Chief Underwriting Officer
Nikolaos Giagiozis	Appointed Actuary

Felix R. Kuhn was appointed CEO as per July 1, 2018, by the Board. Markus Meier, former ZRe CEO, has stepped down from his role as of the same date as he assumed a new role within the Zurich Group.

C. Corporate governance and risk management *continued*

C.2 Risk management

C.2.1 Risk management framework

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.

ZRe's major risk management objectives are to:

- Support the company in achieving its strategy and protect capital, liquidity, earnings and reputation by monitoring that risks are taken within ZRe's risk tolerance.
- Enhance value creation by embedding disciplined risk taking in the ZRe culture and contributing to an optimal risk-return profile whereby 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.

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 and therefore fully applies to ZRe. It sets standards for effective risk management throughout the Group. The policy describes Zurich's risk management framework, identifies Zurich's principal risk types and defines Zurich'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.

ZRe regularly reports on its risk profile. ZRe has procedures to refer risk issues to management and the Board in a timely way. To foster transparency about risk, ZRe Board receives quarterly risk reports and risk updates.

ZRe assesses risks systematically and from a strategic perspective through its proprietary Total Risk Profiling™ (TRP) process, which allows ZRe to identify and evaluate the frequency and severity of a risk scenario. Management then develops, implements and monitors improvements. The TRP process is integral to how ZRe deals with change, and is particularly suited to evaluate strategic risks as well as risks to Zurich's reputation. For ZRe, this process is a continual one, with management conducting regular reviews. Findings are also shared with the Board.

ZRe has a defined risk appetite. The risk appetite sets the limits for capital and non-financial indicators as well as an overall tolerance based on the TRP methodology. Monitoring and escalation procedures are outlined in the risk appetite statement. The risk appetite statement for ZRe is reviewed by management and signed off by the Board at least on an annual basis, and adjusted if deemed necessary. As part of the ERM, the risk management function evaluates actual and potential breaches; the overall responsibility lies with management.

C.2.2 Risk management organization

The ZRe Chief Risk Officer (CRO) leads the risk management function, which provides risk governance guidance to assess and manage risks effectively and efficiently with clear accountabilities, roles and responsibilities that enable disciplined risk-taking. The CRO is responsible for the risk oversight, and regular reporting on risk matters to the CEO, management and the Board.

The ZRe risk management team is part of Zurich's Group risk management organization. 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, unless otherwise required by local laws or regulations. 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.

C.3 Internal control system

ZRe considers internal controls to be key for managing operational risk. The Board has overall responsibility for ZRe's risk management and internal control frameworks. The objectives of the ZRe's internal control system are to provide reasonable assurance that ZRe's financial statements and disclosures are materially correct, support reliable operations, and to ensure legal and regulatory compliance. The internal control system is designed to mitigate rather than eliminate the material risk that business objectives might not be met. Key controls are assessed for their design and operating effectiveness.

ZRe promotes risk awareness and encourages understanding of controls through communication and training. Key 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 and challenge by management, Group Risk Management, Group Compliance, and Group Audit. Significant risks and associated mitigation actions are reported regularly to the management and the Board.

Internal control system certification audits are conducted regularly. Significant controls are assessed for their design and operating effectiveness. Issues identified are communicated to the Board. ZRe risk management has assessed the effectiveness of the risk management framework and system of controls over the financial reporting for the calendar year 2018 and has presented its report to the Board.

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.

C.4 Compliance

ZRe is committed to complying with all applicable laws, regulations, internal requirements, professional and industry standards, and its stated corporate values.

Compliance is a second-line control function responsible for:

- Enabling the business to manage its compliance risks
- Being a trusted advisor
- Providing independent challenge, monitoring and assurance
- Assisting management to promote a culture of compliance and ethical behaviors.

ZRe's compliance function is vertically integrated and is led by the appointed ZRe Compliance Officer. The ZRe Compliance Officer has a direct line to the Chairman of the Board of Directors of ZRe and a vertically integrated reporting line to Group Compliance EMEA layer. The ZRe Compliance Officer regularly provides compliance updates to the management and the Board of Directors of ZRe.

ZRe's compliance function performs its activities according to the annual compliance plan and reports on progress measured against the plan, as well as outcomes and insights to management, the Board of Directors of ZRe and Group Compliance. The annual compliance plan is a risk-based plan and must be prepared on the basis of an independent forward-looking compliance risk assessment, taking into account key risk drivers in both the internal and external environments.

ZRe's compliance function provides an independent compliance view on the key compliance risks to the business and performs independent risk-based monitoring and assurance activities, while challenging the business as necessary. In addition, the function provides compliance risk insight through relevant and targeted reporting.

C. Corporate governance and risk management *continued*

The Group Chief Compliance Officer defines and issues compliance policies relevant to the Group and establishes appropriate processes and guidance. ZRe's compliance function implements such Group compliance policies and issues additional compliance policies for ZRe if required. ZRe compliance function supports a strong compliance culture within ZRe through training and awareness initiatives in line with Zurich's code of conduct, while keeping in mind changes in the regulatory environment.

Zurich encourages its employees to speak up and report improper conduct that they believe is illegal, unethical, or violates Zurich's code of conduct, Group and local policies and other internal requirements. Employees are free to report their concerns to management, human resources, the Group's legal department, its compliance function, or through the Zurich Ethics Line (or similar service provided locally), a phone and web-based service run by an external specialist provider. Zurich does not tolerate retaliation against any employee who reports such concerns in good faith.

C.5 Internal audit function

Zurich Insurance Group's internal audit function (GA) is responsible for providing independent and objective assurance to ZRe's Board, CEO and management, on the adequacy and effectiveness of the risk management, internal control and governance processes.

This is accomplished by developing a risk-based plan, which is updated on an ongoing basis, as the risks faced by the business change. The plan is based on the full spectrum of business risks including concerns and issues raised by the Board, management and other stakeholders. The Board approves the annual plan and any changes to it.

GA executes the plan in accordance with defined operating standards, which incorporate and comply with the International Standards for the Professional Practice of Internal Auditing, issued by the Institute of Internal Auditors (IIA).

GA is authorized to review all areas and has full, free and unrestricted access to all activities, accounts, records, property and personnel necessary to fulfill its duties. In the course of its work, GA takes into consideration the work of other assurance functions. In particular, GA coordinates its activities with the external auditors, sharing risk assessments, work plans, audit reports and updates on audit actions.

GA is responsible for ensuring that issues which it identifies that could impact ZRe's operations are communicated to the responsible management, CEO and the Board. GA issues periodic reports to management and the Board, summarizing audit findings, the status of corrective actions and the status of plan execution. A member of GA attends each Board meeting.

Audit staff are expected to be independent and objective in all assignments and to do nothing that might prejudice or be perceived as prejudicing independence or objectivity. GA has no operational responsibilities over the areas it reviews and, to ensure independence, all GA staff report (via audit managers) to the Head of Group Audit.

The Board assesses the independence of GA and reviews its activities, plans and organization, the quality of its work and its cooperation with the external auditors. As required by the IIA International Standards, an independent qualified assessor reviews the quality of GA at least every five years. This review was conducted most recently in 2016 and 2017, and the findings of the review were reported to the Zurich Insurance Group Audit Committee in February 2017. The results confirmed that GA's practices conform to all IIA Standards.

D. Risk profile

Risk and capital are managed at ZRe according to the Group's framework. The principles of the Zurich's enterprise risk management described in this chapter are equally applicable to ZRe.

The significant risks for ZRe, as measured by the SST target capital, are premium and reserve, market and credit risk. ZRe's risk profile is largely a function of the risks written by the assumed business from other Group entities. The reinsurance credit risk is mainly related to the retrocession to ZIC.

D.1 Insurance risk

Insurance risk is the inherent uncertainty regarding the occurrence, amount or timing of insurance liabilities. 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. As part of the underwriting process of affiliated companies, part of the exposure is transferred to ZRe. ZRe actively seeks to write those risks it understands and that provide a reasonable opportunity to earn an acceptable profit. ZRe 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.

ZRe writes property and casualty business only. Property and casualty insurance risk comprises premium and reserve 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 and casualty insurance predominantly relates to unexpected increases in the expenses relating to claims handling, underwriting and administration. The following provides an overview of the ZRe'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, accident and health, workers' compensation and employer's liability.

ZRe's underwriting strategy aims to take advantage of the diversification of property and casualty insurance risks across lines of business and geographic regions.

Underwriting discipline is a fundamental part of managing insurance risk. ZRe sets limits on underwriting capacity, and delegates authority to individuals based on their specific expertise.

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.

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.

To ensure a common understanding among the functions for financial, underwriting and pricing decisions, ZRe has established continuous cross-functional collaboration between underwriting, actuarial (pricing and reserving), finance and risk management, underpinned by quarterly meetings.

D. Risk profile *continued*

In most cases, these actuarial analyses are conducted at least twice a year for on-going business and annually for business in run-off according to agreed timetables. Analyses are performed by treaty types and terms, ceding countries, lines of business 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.

In addition to the specific risks insured, ZRe 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 management and the Board. For ZRe the most important peril region on a net basis is Japan, mainly related to personal accident and motor business.

The table shows ZRe's concentration of risk by region and line of business based on assumed written premiums for the year 2018, before retrocession. Retroceded premiums amounted to CHF 284.1 million for the same period.

Concentration of risk

in CHF millions, as of December 31, 2018	Accident	Property	Motor	Liability	Other Lines	Total
Japan	211.5	34.3	241.2	10.5	10.5	508.1
Rest of Asia	52.0	70.9	11.2	18.7	19.8	172.4
USA/Canada	–	71.5	1.3	1.9	4.0	78.8
Others	0.2	79.9	0.1	13.6	9.2	103.0
Total	**263.7**	**256.6**	**253.7**	**44.7**	**43.5**	**862.3**

D.2 Market risk including investment credit risk

Market risk is the risk associated with ZRe's balance sheet positions where the value or cash flow depends on financial markets.

Risk factors include:

- Interest-rate risk
- Credit and swap spread changes
- Issuer defaults
- Currency exchange rates

ZRe has outsourced investment management to the Group, which 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 ZRe's risk appetite and tolerance and local regulatory constraints.

ZRe's Asset/Liability Management Investment Committee reviews and monitors ZRe's strategic asset allocation and tactical boundaries, and monitors asset/liability exposure. The economic impact of potential extreme market moves is regularly examined and considered when setting the asset allocation.

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. ZRe is exposed to interest-rate risk including from debt securities, reserves for insurance contracts and loans and receivables.

ZRe has limits on deviations of asset interest rate sensitivities from liability interest rate sensitivities. The Group also 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 risk-free interest rate yield curves. Movements of credit spreads are driven by supply and demand considerations, expected probability of default, expected losses in cases of issuer defaults, the uncertainty of default probabilities and losses, as well as actual defaults of issuers.

D.2.1 Analysis of market risk sensitivities for interest rate, equity and credit spread risks

Basis of presentation

The basis of the presentation for the following tables is an economic valuation represented by the fair value for investments. IFRS insurance liabilities are discounted at risk-free market rates to reflect the present value of insurance liability cash flows and other liabilities; assets are also reported on an IFRS basis.

The tables show the estimated economic market risk sensitivities of the net impact for ZRe. 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 ZRe. The net impact – the difference between the impact on investments and liabilities – represents the economic risk that ZRe faces related to changes in market risk factors. In determining sensitivities, investments and liabilities are fully re-valued in 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. Sensitivities are shown gross of tax.

Analysis of economic sensitivities for interest rate risk

The following table shows the estimated impact of a 100 basis point increase/decrease in yield curves after consideration of hedges in place, as of December 31, 2018 and 2017

Economic interest rate sensitivities

in USD m as of December 31	2017	**2018**
100 basis point increase in the interest rate yield curves		
Property and casualty business		
Net impact before tax	(3.4)	(3.3)
100 basis point decrease in the interest rate yield curves		
Property and casualty business		
Net impact before tax	3.3	2.3

Analysis of economic sensitivities for equity risk

Not applicable as there is no equity exposure.

Analysis of economic sensitivities for credit spread risk

The following table shows the estimated impacts from a 100 basis points increase in corporate credit spreads, as of December 31, 2018 and 2017. The sensitivities apply to all fixed income instruments, excluding government, supranational and similar debt securities.

Economic credit spread sensitivities

in USD m as of December 31	2017	**2018**
100 basis point increase in credit spread		
Property and casualty business		
Net impact before tax	(4.6)	(5.4)

D. Risk profile *continued*

D.2.2 Risk from defaults of counterparties

Debt securities

ZRe is exposed to credit risk from third-party counterparties where the company holds securities issued by those entities.

Debt securities by rating of issuer

as of December 31	2017		2018	
	CHF millions	% of total	CHF millions	% of total
Rating				
AA- and higher	168	56%	261	74%
A- up to including A+	61	20%	81	23%
BBB+ and lower	71	24%	10	3%
Unrated	–	–	–	–
Total	**300**	**100%**	**352**	**100%**

The table shows the credit risk exposure of debt securities, by issuer credit rating. As of December 31, 2018, 100 percent of the ZRe's debt securities were investment grade with 37.2 percent rated 'AAA'.

The risk-weighted average issuer credit rating of ZRe's debt securities portfolio was 'A' at December 31, 2018, and 'A' at December 31, 2017.

As of December 31, 2018, the largest concentration in the ZRe's debt securities portfolio was in governments, government agencies and supernationals (55 percent) and U.S. government treasuries (18 percent). As of December 31, 2017, the largest concentration in the ZRe's debt securities portfolio was in governments, government agencies and supernationals (46 percent) and U.S. government treasuries (21 percent).

Cash and cash equivalents

To reduce concentration, settlement and operational risks, ZRe limits the amount of cash that can be deposited with a single counterparty. ZRe applies the authorized list of acceptable cash counterparties maintained by the Group.

Cash and cash equivalents amounted to CHF 572.2 million as of December 31, 2018, and CHF 467.9 million as of December 31, 2017.

Mortgage loans

Not applicable as there are none.

D.2.3 Risk from currency exchange rates

Currency risk is the risk of loss resulting from changes in exchange rates. Management deems that the risk from currency exchange rates is low based on the following:

- ZRe aims to have matching assets to liabilities with respect to currencies.
- ZRe's retrocession arrangements are for the most part aligned with the currency of the business assumed.
- ZRe mitigates foreign exchange risk by hedging material foreign exchange risks using forward contracts with ZIC.

The foreign exchange risk management policy for ZRe is consistent with the policies in all other Group subsidiaries and follows a standardized process aimed at mitigating and managing the foreign currency exposures at Group level and the legal entity level.

The Group, as outlined in its risk policy manual, defines clear responsibilities, rules, limits and reporting requirements for managing foreign exchange risk. ZRe is a Swiss legal entity regulated in Switzerland and reports in CHF to FINMA. ZRe is part of the Zurich Insurance Group, which reports consolidated results according to IFRS in USD.

ZRe measures its foreign exchange exposures in accordance to the following principles:

- All assets and liabilities are valued in the balance sheet at their IFRS accounting values – attributed to their transaction currency.
- ZRe only hedges foreign exchange risk with ZIC.
- All internal hedges are performed back to the currency of the underlying unit.

D.3 Other credit risk

Credit risk is the risk associated with a loss or potential loss from counterparties failing to fulfill their financial obligations. ZRe's exposure to other credit risk is derived from the following main categories of assets:

- Reinsurance assets
- Receivables

ZRe's objective in managing credit risk exposures is to maintain these exposures within parameters that reflect the Group's strategic objectives, risk appetite and tolerance. Credit risk sources are assessed and monitored.

ZRe's primary reinsurer is its parent company ZIC, which has a Standard & Poor's rating of AA-.

ZRe has minimal third-party reinsurance and the majority of such reinsurance is with well-capitalized global reinsurers.

ZRe has no history of having material impairment issues related to reinsurance assets and receivables. Management reviews all third-party balances for impairment on a quarterly basis, and a credit impairment allowance has been booked accordingly.

ZRe had no off-balance sheet positions as of December 31, 2018.

D.4 Operational risk

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 framework with a common approach to identify, assess, quantify, mitigate, monitor and report operational risks within the Group. Within this framework, ZRe:

- Documents and reviews loss events exceeding a threshold determined by the Zurich's risk policy manual. 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, ZRe uses such sources of information as the Total Risk Profiling™ process, internal control assessments, audit findings as well as scenario modeling and loss event data.

Zurich 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.

Preventing, detecting and responding to fraud are embedded in Zurich's business. Both claims and non-claims fraud are included in the framework for assessing and managing operational risks.

ZRe management has identified six operational risk, including one high risk related to operational counterparty dependency. The management actively managed this high risk and was able to reduce it to medium by end of 2018.

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.

D. Risk profile *continued*

D.5 Liquidity risk

Liquidity risk is the risk that ZRe 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. ZRe'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, ZRe assesses, monitors and manages its liquidity needs on an ongoing basis.

ZRe has material cash pooling balances with ZIC that can be drawn upon immediately to meet liquidity needs. Additionally, ZRe's investment portfolios are primarily invested in highly liquid securities.

D.6 Other material risks

D.6.1 Strategic risk

Strategic risk corresponds to the risk that ZRe is unable to achieve strategic targets. Strategic risks can arise from:

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

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

ZRe 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 2018, the management assessed the key strategic risk scenarios, looking at 2019 and beyond. The ZRe TRP identified and assessed risks from both external and internal factors. Key strategic risks are counterparty dependency, adequate pricing, sufficient reserving and regulatory compliance.

D.6.2 Risk to ZRe's reputation

Risks include acts or omissions by ZRe or any of its employees that could damage ZRe's reputation or lead to a loss of trust among its stakeholders. Every risk type has potential consequences for ZRe's reputation. Effectively managing each type of risk helps reduce such threats.

ZRe aims to preserve its reputation by adhering to applicable laws and regulations, and by following the core values and principles of Zurich's code of conduct, which promotes integrity and good business practice.

E. Valuation

E.1 Overarching market-consistent valuation principle

As an overarching principle, for SST purposes, all assets and liabilities are valued in accordance with economic principles in a market-consistent manner and their valuation is presented in the MCBS. In general, unless stated otherwise, the MCBS applies the same fair value measurement and hierarchy as the Group IFRS consolidated annual financial statements. In such cases, fair value is determined on a best estimate valuation using assumptions and parameters as defined by FINMA, or based on management's judgment.

In summary, the following valuation applies for assets:

i. Mark-to-market: for third-party assets
ii. Mark-to-model: in case mark-to-market cannot be applied
iii. IFRS carrying value

FINMA stipulates that the SST MCBS value of all insurance and non-insurance liabilities shall be determined under the assumption that ZRe will fulfill its obligation in full, thus, own credit risk is not considered.

E.2 Market-consistent balance sheet following SST principles

Asset valuation MCBS vs local Swiss stat

In CHF millions, as of December 31	2017 (SST)	**2018 (SST)**	Difference to 2017 (SST)	**2018 (local Swiss stat)**	Difference SST to local Swiss stat (2018)
Market-consistent value of investments					
Shareholdings	–	–	–	–	–
Fixed income securities	276.7	347.6	70.9	352.0	(4.4)
Loans	97.6	88.7	(8.9)	88.7	–
Mortgages	–	–	–	–	–
Equities	–	–	–	–	–
Other investments	6.7	–	(6.7)	–	–
Collective investment schemes	–	–	–	–	–
Alternative investments	–	–	–	–	–
Other investments	6.7	–	(6.7)	–	–
Total Investments	**381.0**	**436.3**	**55.3**	**440.7**	**(4.4)**
Receivables from derivative financial instruments	7.2	1.3	(5.9)	1.3	–
Marke-consistent value of other assets					
Cash and cash equivalents	1,083.3	572.2	(511.1)	572.2	–
Receivables from insurance business	72.2	111.3	39.1	110.4	0.9
Other receivables	31.0	17.7	(13.3)	17.7	–
Other assets	19.7	12.1	(7.6)	359.6	(347.5)
Total other assets	**1,206.2**	**713.3**	**(492.9)**	**1,059.9**	**(346.6)**
Total market-consistent value of assets	1,594.4	1,150.8	(443.6)	1,501.9	(351.1)

E. Valuation *continued*

Best estimate liabilities and other liabilities MCBS vs. local Swiss stat

In CHF millions, as of December 31	2017 (SST)	**2018 (SST)**	Difference to 2017 (SST)	**2018 (local Swiss stat)**	Difference SST to local Swiss stat (2018)
Best estimate liabilities (BEL)					
Best estimate of insurance liabilities	**913.8**	**1,076.2**	**162.4**	**1,267.4**	**(191.2)**
Direct insurance: life insurance business (excluding ALV)	–	–	–	–	–
Direct insurance: non-life insurance business	53.7	47.2	(6.5)	71.6	(24.4)
Direct insurance: health insurance business	–	–	–	–	–
Direct insurance: unit-linked life insurance business	–	–	–	–	–
Direct insurance: other business	–	–	–	–	–
Outward reinsurance: life insurance business (excluding ALV)	–	–	–	–	–
Outward reinsurance: non-life insurance business	860.1	1,029.0	168.9	1,195.8	(166.8)
Outward reinsurance: health insurance business	–	–	–	–	–
Outward reinsurance: unit-linked life insurance business	–	–	–	–	–
Outward reinsurance: other business	–	–	–	–	–
Reinsurers' share of best estimate of insurance liabilities	**(632.4)**	**(639.2)**	**(6.8)**	**(742.2)**	**103.0**
Direct insurance: life insurance business (excluding ALV)	–	–	–	–	–
Direct insurance: non-life insurance business	(14.6)	(15.6)	(1.0)	(20.6)	5.0
Direct insurance: health insurance business	–	–	–	–	–
Direct insurance: unit-linked life insurance business	–	–	–	–	–
Direct insurance: other business	–	–	–	–	–
Outward reinsurance: life insurance business (excluding ALV)	–	–	–	–	–
Outward reinsurance: non-life insurance business	(617.8)	(623.6)	(5.8)	(721.6)	98.0
Outward reinsurance: health insurance business	–	–	–	–	–
Outward reinsurance: unit-linked life insurance business	–	–	–	–	–
Outward reinsurance: other business	–	–	–	–	–
Market-consistent value of other liabilities					
Non-technical provisions	–	3.6	3.6	11.4	(7.8)
Interest-bearing liabilities	–	205.8	205.8	205.8	–
Liabilities from derivative financial instruments	5.7	1.6	(4.1)	1.6	–
Deposits retained on ceded reinsurance	0.2	0.3	0.1	0.3	–
Liabilities from insurance business	19.7	30.7	11.0	30.7	–
Other liabilities	834.7	25.9	(808.8)	25.9	–
Total BEL plus market-consistent value of other liabilities	1,141.8	704.7	(437.1)	800.9	(96.1)
Market-consistent value of assets minus total BEL plus market-consistent value of other liabilities	**452.6**	**446.2**	**(6.4)**	**701.0**	**(254.8)**

E.2.1 Investments

Debt securities are carried at amortized cost using the effective interest rate method under Swiss local statutory accounting principles. The carrying value as of December 31, 2018, amounted to CHF 352.0 million. As of December 31, 2017, ZRe held debt securities in the amount of CHF 300.3 million.

Loans in ZRe amounted to CHF 88.7 million as of December 31, 2018, and CHF 97.6 million as of December 31, 2017, under Swiss local statutory accounting principles and consist only of loans with other Group companies.

E.2.2 Insurance liabilities

Valuation

Best estimates of loss reserves

Reserves for losses (i.e., case reserve, actuarial IBNR, management IBNR, reserve strength IBNR as well as allocated/ unallocated loss adjustment expenses) are held at best estimate under IFRS. Such best estimate includes recoverables for salvage and subrogation. However, most of these reserves are not discounted. The valuation for Swiss local statutory accounting principles is the same, and requested regulatory equalization provisions are held additionally.

The MCBS value for loss and loss expense reserves is discounted using swap rates by currency balances.

Other reserves (e.g. unearned premium reserves)

Under IFRS, ZRe recognizes unearned premium reserve (UPR) upon start of the coverage period. Typically, this includes one year of premiums invoiced (i.e., also for multi-year policies generally only the first year premium is recognized and not the entire contractual future premium volume due in future reporting periods). The valuation for Swiss local statutory accounting principles is the same.

The MCBS value for UPR reflects the discounted costs of insurance (using swap rates by currency balances). Costs of insurance includes expected future loss reserves (including loss adjustment expenses) and administration expenses that can arise from the unexpired risk.

Ceded/retroceded reinsurance balances

For SST MCBS the calculation of the best estimate for reinsurance assets and insurance liabilities is performed on a gross basis (i.e., no offsetting of assets with liabilities).

Other information

As of December 31, 2018, swap curves are used in the SST MCBS and target capital as the risk-free rates for ZRe in line with the possibility of using "own yield curves" in the SST according to paragraph 46 of SST circular 2017/03. As of December 31, 2017, ZRe instead used FINMA prescribed rates for SST AFR calculations.

The impact of using swap curves instead of FINMA rates as of December 31, 2018, was CHF 2.4 million increase. As of December 31, 2018, based on FINMA rates the ZRe market-consistent value of assets minus total BEL plus market-consistent value of other liabilities was CHF 452.6 million compared to CHF 455.0 million based on swap rates.

Evolution since December 31, 2017

The undiscounted booked insurance reserves for Swiss local statutory accounting principles on a gross basis increased from CHF 1,082.7 million to CHF 1,267.4 million overall. This increase is driven by both the fronted business and the retained Asian proportional business, both assumed from other Zurich Group entities.

Ceded undiscounted reserves decreased from CHF 756.3 million to CHF 742.2 million. This reduction in ceded technical reserves in 2018 (CHF 14.1 million) compares to an increase in gross technical reserves in 2018 (CHF 184.6 million). The increase in the gross fronted business is mostly offset by the increased retention of some Asian portfolios which were previously fronted. This leads to a reduction in the overall ceded technical provisions.

E.2.3 Comparison between SST market-consistent net values and Swiss Statutory net assets

The market-consistent value of assets minus BEL and other liabilities of CHF 446 million is lower than Swiss Statutory total shareholder's equity of CHF 701 million. The most important drivers are: Net deferred acquisition costs (CHF 266 million) and intangible assets related to renewal rights (CHF 82 million) – both have zero value for MCBS. Furthermore, the discount of best estimates of liabilities (CHF 88 million) under MCBS and different asset valuation basis.

F. Capital management

Objectives of capital management

ZRe's capital management and planning approach is embedded in the overall Zurich Insurance Group's capital management policy. The policy is defined to maximize long-term shareholder value by optimizing capital allocation while managing the balance sheet in accordance with regulatory and solvency requirements. This includes the management and monitoring of local statutory capital adequacy.

As a legal entity, ZRe is obliged to plan the development of its regulatory solvency position as part of its business plans, taking into account planned dividends and cash remittances to ZIC, including possible risks to its ability to pay these amounts. The capital planning horizon is set in line with the overall Group planning cycle.

ZRe must monitor that it remains within the solvency and capital requirement targets set in accordance to ZRe's risk appetite statement and ensure adherence to local laws and applicable regulatory requirements. In particular, ZRe must ensure compliance with regulatory capital reporting standards.

ZRe is subject to FINMA's SST and tied assets regulations. Both are taken into account when planning capital or cash repatriations to the Group. Internal target ratios and/or thresholds are considered when assessing and defining the potential to repatriate cash or capital to the Group.

Tied asset requirements are calculated and tracked according to FINMA guidelines and their development is analyzed on a monthly basis. ZRe's Board will be informed whenever any transaction will cause ZRe's tied assets ratio to fall below defined thresholds.

The valuation of ZRe's shareholder's equity follows the Swiss local statutory accounting principles described in Chapter E – Valuation.

The following table shows the composition of ZRe's shareholder's equity as of December 31, 2018, before appropriation of available earnings:

Shareholder's equity

in CHF millions, as of December 31	2017	**2018**	Change
Share capital	12	12	–
Capital contribution reserve	616	616	–
Organizational fund	17	14	(3)
Retained earnings:			
Beginning of period	*173*	*83*	*(89)*
Dividend paid	*(143)*	*(58)*	*85*
Net income after taxes	*54*	*34*	*(20)*
Retained earnings, end of period	*83*	*59*	*(24)*
Total shareholder's equity	**728**	**701**	**(27)**

Despite the charge of the organizational costs of CHF 2.9 million in 2018 and 2017, respectively, there have been no changes in ZRe's shareholder's equity other than the dividend payment and the net income after taxes in 2018 or in 2017.

Appropriation of available earnings

in CHF, as of December 31	2017 (Approved)	**2018 (Proposed)**
Appropriation of available earnings as proposed by the Board of Directors		
Balance brought forward	29,881,456	25,496,112
Net income after taxes	53,614,656	33,855,162
Available earnings	**83,496,112**	**59,351,274**
Dividend	(58,000,000)	(36,000,000)
Balance carried forward	**25,496,112**	**23,351,274**

The Board proposed to its shareholder at the Annual General Meeting on April 12, 2019, to pay a dividend of CHF 36.0 million and to carry forward available earnings of CHF 23.4 million as shown in the table above.

Regulatory capital adequacy

ZRe manages its capital so that it meets local regulatory capital requirements at all times.

Regulatory requirements in Switzerland

Under the Swiss Solvency Test (SST), insurance companies and insurance groups can apply for the use of company-specific internal models to calculate risk-bearing and target capital, as well as the SST ratio. The SST ratio must be calculated as per January 1, and must be submitted to FINMA. Internal models must be approved by FINMA. For January 1, 2019, ZRe has been given permission by FINMA to use a transitional internal model.

G. Solvency

Swiss solvency test

The Swiss Solvency Test (SST) is a principle-based, risk sensitive supervision framework reflecting:

- An economic "market-consistent" valuation of the financial resources available to meet policyholder obligations – referred to as risk-bearing capital or RBC.
- An economic view of the impact of the potential risks inherent in the regulated business – described as target capital and defined as the expected shortfall at a 99 percent confidence level over a one-year time horizon.

The SST compares risk-bearing capital with target capital through calculation of a ratio (the 'SST Ratio'). This test indicates whether the level of risk-bearing capital is sufficient to reduce the probability of policyholder impairment to a level consistent with regulatory objectives.

ZRe applies an Internal Model for the Swiss Solvency Test (SST).

During the course of 2018, ZRe has submitted its internal model for approval by FINMA. This filed model is aligned to the Zurich Group's internal model framework. The model changes have a total adverse impact of 92 percentage points on the ZRe SST ratio as of January 1, 2018. For the calculation of the SST ratio as of January 1, 2019, FINMA approved the use of a transitional model that is based on the submitted model, and includes a 20 percent add-on to the target capital.

ZRe's SST ratio as filed with FINMA is 279 percent[1)] as of January 1, 2019, and 430 percent[2)] as of January 1, 2018, a decrease of 151 percentage points, of which the model change impact and the 20 percent add-on to the target capital contributed total of 154 percentage points.

As of January 1, 2019, ZRe's risk bearing capital and target capital were USD 416.9 million and USD 157.4 million, respectively. As of January 1, 2018, ZRe's risk bearing capital and target capital were USD 404.9 million and USD 107.0 million, respectively (as filed with FINMA end of April 2018).

Solvency

in USD millions, for the years ended December 31	2017	Adjustments previous year	2018	Change
Derivation of risk-bearing capital				
Assets	2,284.7		1,819.3	(465.5)
Liabilities	(1,820.3)		(1,365.8)	454.5
Deductions (proposed dividends)	(59.5)		(36.6)	22.9
Core capital	**404.9**		**416.9**	**12.0**
Supplementary capital (eligible subordinated debt)	–			–
Risk-bearing capital	**404.9**		**416.9**	**12.0**
Derivation of target capital				
Insurance risk	91.4		87.9	(3.5)
Market risk	58.7		74.2	15.5
Diversification effects	(38.2)		(28.1)	10.1
Credit risk	12.0		12.3	0.3
Risk margin and other effects on target capital[3)]	(17.0)		11.1	28.1
Target capital	**107.0**		**157.4**	**50.5**
SST ratio				
SST ratio (based on risk margin included in liabilities)[4)]	**430%**		**279%**	**(151%)**

[1] January 1, 2019, SST results refer to those that will be filed with FINMA at the end of April 2019 (after model change).
[2] January 1, 2018, SST results refer to those filed with FINMA at the end of April 2018 (before model change).
[3] Risk margin was USD 12.8m as of December 31, 2018, and USD 16.7m as of December 31, 2017, for 2018 it includes FINMA add-on of 20 percent or USD 26.2m.
[4] SST Ratio = (Risk bearing capital – Risk margin)/(Target Capital – Risk margin).

Risk margin and other effects on target capital includes:

- Expected P&C result: The SST framework allows for recognition of the economic profit (expected property and casualty results) a company expects in one year's time.
- Risk margin: The risk margin methodology follows the cost of capital approach, in accordance with the FINMA Circular 2017/3. It reflects the cost of all future capital requirements needed to support the current insurance portfolio in case the company would stop writing any new business and go into a run-off. These future capital requirements are discounted consistently with the MCBS liabilities.
- Credit risk associated with affiliate transactions: ZRe's largest counterparty is ZIC, the parent company of ZRe. The remote risk of ZIC's default is therefore incorporated into ZRe's target capital.
- Diversification between credit risk and aggregated market and insurance risk.
- A capital add-on of 20 percent of the target capital as required by FINMA in order to use the internal model as submitted to FINMA for approval on October 31, 2018.

Solvency – Insurance risk

in USD millions, for the years ended December 31	2017	Adjustments previous year	2018	Change
Insurance risk derivation of target capital				
Premium and reserve risk (including UPR risk)	90.1		86.6	(3.5)
Nat cat	4.6		4.0	(0.7)
Business risk	–		–	–
Diversification	(3.3)		(2.7)	0.7
Total of insurance risk target capital	**91.4**		**87.9**	**(3.5)**

ZRe's largest component of the target capital is premium and reserve risk. Reserve risk arises due to adverse changes in reserve development resulting from fluctuations in the timing and amount of claims settlement. Premium risk assesses the risk that the losses related to new business earned over one-year are higher than what was expected. The natural catastrophe (nat cat) risk exposure within ZRe is minimal given ZRe retains business that is net of insuring nat cat reinsurance protections.

Solvency – Market risk

in USD millions, for the years ended December 31	2017	Adjustments previous year	2018	Change
Market risk derivation of target capital				
Equity risk	–		–	–
Interest rate risk	11.9		32.7	20.8
Exchange rate risk	58.3		78.0	19.7
Credit spread risk	5.0		3.8	(1.2)
Other	6.4		13.2	6.8
Diversification	(22.0)		(53.1)	(31.1)
Total of market risk target capital (including investment credit risk)	**59.7**		**74.7**	**15.0**
thereof:				
Market risk (excluding credit risk)	58.7		74.2	15.5
Investment credit risk	6.8		8.8	2.0

Market risk is the second-largest contributor to ZRe's target capital. It measures interest rate mismatches between assets and liabilities, fixed income risk, corporate rate spread risk and foreign exchange risk. Credit default risk of the investment assets is shown under the sub-section investment credit risk.

Appendix 1: Quantitative templates

Performance

in CHF millions, for the years ended December 31

		Total		Direct Swiss business							
				Personal Accident		Motor		Property		Financial Lines	
		2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**
1	Gross written premiums and policy fees	775	862	–	–	–	–	–	–	–	–
2	Premiums ceded to reinsurers	(403)	(284)	–	–	–	–	–	–	–	–
3	Net written premiums and policy fees (1 + 2)	372	578	–	–	–	–	–	–	–	–
4	Change in reserves for unearned premiums, gross	(19)	(60)	–	–	–	–	–	–	–	–
5	Change in reserves for unearned premiums, ceded	12	(33)	–	–	–	–	–	–	–	–
6	Net earned premiums and policy fees (3 + 4 + 5)	365	486	–	–	–	–	–	–	–	–
7	Other income	–	–	–	–	–	–	–	–	–	–
8	**Total technical income (6 + 7)**	**366**	**486**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
9	Claims paid, annuities and loss adjustment expenses, gross	(325)	(335)	–	–	–	–	–	–	–	–
10	Claims paid, annuities and loss adjustment expenses, ceded	202	208	–	–	–	–	–	–	–	–
11	Change in insurance reserves, gross	79	(131)	–	–	–	–	–	–	–	–
12	Change in insurance reserves, ceded	(90)	29	–	–	–	–	–	–	–	–
13	Change in actuarial provisions for unit-linked contracts	–	–	–	–	–	–	–	–	–	–
14	**Insurance benefits and losses, net of reinsurance (9 + 10 + 11 + 12 + 13)**	**(134)**	**(229)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
15	Underwriting & policy acquisition costs, gross	(256)	(267)	–	–	–	–	–	–	–	–
16	Underwriting & policy acquisition costs, ceded	91	56	–	–	–	–	–	–	–	–
17	Underwriting & policy acquisition costs, net of reinsurance (15 + 16)	(165)	(211)	–	–	–	–	–	–	–	–
18	Administrative and other expense	(10)	(4)	–	–	–	–	–	–	–	–
19	**Total technical expense (14 + 17 + 18) (non-life insurance only)**	**(309)**	**(444)**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
20	Investment income	11	11	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
21	Investment expenses	(1)	(12)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
22	**Net investment result (20 + 21)**	**10**	**(1)**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
23	Net investment result on unit-linked investments	–	–	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
24	Other financial income	5	9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
25	Other financial expense	–	–	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
26	**Operating result (8 + 14 + 17 + 18 + 22 + 23 + 24 + 25)**	**71**	**50**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
27	Interest expense on debt and other interest expense	(2)	(6)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
28	Other income	–	–	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
29	Other expense	–	–	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
30	Extraordinary income/expense	–	–	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
31	**Net income before taxes (26 + 27 + 28 + 29 + 30)**	**69**	**44**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
32	Direct tax expense	(15)	(10)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
33	**Net income after taxes (31 + 32)**	**54**	**34**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

Line items 7, 18: LoB allocated according to GWP

						Indirect business													
General Liability		Other		Direct non-Swiss business		Accident		Health		Motor		Marine, aviation, transport		Property		Casualty		Miscellaneous	
2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**
–	–	–	–	–	–	256	264	6	5	182	254	17	14	231	257	56	45	26	24
–	–	–	–	–	–	(53)	12	(6)	2	(13)	–	(17)	(10)	(231)	(230)	(56)	(35)	(26)	(23)
–	–	–	–	–	–	203	276	–	8	170	254	–	4	–	27	–	10	–	1
–	–	–	–	–	–	(11)	(3)	(1)	–	(18)	(53)	–	–	–	(11)	11	10	(1)	(2)
–	–	–	–	–	–	12	(21)	1	(2)	(1)	(3)	–	(1)	–	(1)	(1)	(4)	1	–
–	–	–	–	–	–	204	251	–	5	151	197	–	3	–	15	10	15	–	(1)
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	**–**	**–**	**–**	**–**	**–**	**204**	**251**	**–**	**5**	**151**	**197**	**–**	**3**	**–**	**15**	**10**	**15**	**–**	**(1)**
(4)	(2)	–	–	–	–	(78)	(82)	(3)	(3)	(57)	(90)	(12)	(12)	(118)	(103)	(49)	(35)	(3)	(8)
1	–	–	–	–	–	9	29	3	1	5	9	13	15	118	106	49	39	3	10
9	9	–	–	–	–	5	1	–	–	(28)	(37)	7	(4)	84	(101)	1	2	2	(1)
(6)	(4)	–	–	–	–	11	(31)	–	(1)	(1)	(6)	(7)	–	(85)	92	(1)	(20)	(2)	(1)
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	**4**	**–**	**–**	**–**	**–**	**(52)**	**(84)**	**–**	**(3)**	**(81)**	**(124)**	**–**	**(2)**	**(1)**	**(6)**	**–**	**(14)**	**–**	**–**
–	–	–	–	–	–	(125)	(129)	(3)	(3)	(63)	(69)	(6)	(4)	(38)	(41)	(14)	(14)	(8)	(7)
–	–	–	–	–	–	17	1	3	–	6	–	6	3	38	34	13	11	8	7
–	–	–	–	–	–	(108)	(128)	–	(3)	(57)	(68)	–	(1)	–	(7)	(1)	(4)	–	–
–	–	–	–	–	–	(3)	(1)	–	–	(2)	(1)	–	–	(3)	(1)	(1)	–	–	–
–	**4**	**–**	**–**	**–**	**–**	**(163)**	**(213)**	**–**	**(6)**	**(140)**	**(194)**	**–**	**(3)**	**(4)**	**(14)**	**(1)**	**(18)**	**–**	**–**
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

Appendix 1: Quantitative templates *continued*

Market-Consistent Balance Sheet

in CHF millions, for the year ended December 31	2017	Adjustments previous period	2018
Market-consistent value of investments			
Real estate	–	–	–
Shareholdings	–	–	–
Fixed-income securities	277	–	348
Loans	98	–	89
Mortgages	–	–	–
Equities	–	–	–
Other investments	7	–	–
Collective investment schemes	–	–	–
Alternative investments	–	–	–
Other capital investments	7	–	–
Total investments	**381**	**–**	**436**
Financial investments from unit-linked life insurance	–	–	–
Receivables from derivative financial instruments	7	–	1
Market-consistent value of other assets			
Cash and cash equivalents	1,083	–	572
Receivables from insurance business	72	–	111
Other receivables	31	–	18
Other assets	20	–	12
Total other assets	**1,206**	**–**	**713**
Total market-consistent value of assets	**1,594**		**1,151**
Best estimate liabilities (BEL)			
Best estimate of insurance liabilities	**914**	**–**	**1,076**
Direct insurance: life insurance business (excluding ALV)	–	–	–
Direct insurance: non-life insurance business	54	–	47
Direct insurance: health insurance business	–	–	–
Direct insurance: unit-linked life insurance business	–	–	–
Direct insurance: other business	–		–
Outward reinsurance: life insurance business (excluding ALV)	–		–
Outward reinsurance: non-life insurance business	860	–	1,029
Outward reinsurance: health insurance business	–	–	–
Outward reinsurance: unit-linked life insurance business	–	–	–
Outward reinsurance: other business	–	–	–
Reinsurers' share of best estimate for insurance liabilities	**(632)**	**–**	**(639)**
Direct insurance: life insurance business (excluding ALV)	–	–	–
Direct insurance: non-life insurance business	(15)	–	(16)
Direct insurance: health insurance business	–	–	–
Direct insurance: unit-linked life insurance business	–	–	–
Direct insurance: other business	–	–	–
Outward reinsurance: life insurance business (excluding ALV)	–	–	–
Outward reinsurance: non-life insurance business	(618)	–	(624)
Outward reinsurance: health insurance business	–	–	–
Outward reinsurance: unit-linked life insurance business	–	–	–
Outward reinsurance: other business	–	–	–
Market-consistent value of other liabilities	**860**	**–**	**268**
Non-technical provisions	–	–	4
Interest-bearing liabilities similar to debt capital	–	–	206
Liabilities from derivative financial instruments	6	–	2
Deposits retained on ceded reinsurance	–	–	–
Liabilities from insurance business	20	–	31
Other liabilities	835	–	26
Total BEL plus market-consistent value of other liabilities	**1,142**	**–**	**705**
Difference between market-consistent assets and market-consistent debt capital	453	–	446

Solvency

in USD millions, for the years ended December 31	2017	Adjustments previous year	2018	Change
Derivation of risk-bearing capital				
Assets	2,284.7		1,819.3	(465.5)
Liabilities	(1,820.3)		(1,365.8)	454.5
Deductions (proposed dividends)	(59.5)		(36.6)	22.9
Core capital	**404.9**		**416.9**	**12.0**
Supplementary capital (eligible subordinated debt)	–		–	
Risk-bearing capital	**404.9**		**416.9**	**12.0**
Derivation of target capital				
Underwriting risk	91.4		87.9	(3.5)
Market risk	58.7		74.2	15.5
Diversification effects	(38.2)		(28.1)	10.1
Credit risk	12.0		12.3	0.3
Risk margin and other effects on target capital	(17.0)		11.1	28.1
Target capital	**107.0**		**157.4**	**50.5**
SST ratio				
SST ratio (based on risk margin included in liabilities)	**430%**		**279%**	**(151%)**

Appendix 2: Specific MCBS valuation principles

Appendix 2.1: Specific positions

Revenue contract asset:

Deferred tax liabilities attributable to shareholders
Not valued (i.e., value set to zero).

Appendix 2.2: Third-party investments

Group investments accounted for at fair value under IFRS shall be valued for SST MCBS purposes as summarized below:

AFS debt instruments
Fair value as reported under IFRS (i.e., IFRS carrying value).

Cash and cash equivalent
IFRS carrying value.

Loans to affiliates
Fair value using the IFRS valuation principles.

Deposits made under assumed reinsurance agreements or non-risk transfer reinsurance deposits
For MCBS purposes, third-party and intercompany deposits made under reinsurance agreements are valued using the IFRS carrying value provided this is a reasonable proxy to fair value (i.e., remaining maturity less than 1 year).

Otherwise, the value is based on fair value using the IFRS valuation principles.

Deposits received under ceded reinsurance agreements
For MCBS purposes, third-party and intercompany deposits received under reinsurance agreements are valued using the IFRS carrying value provided this is a reasonable proxy to fair value (i.e., remaining maturity less than 1 year).

Otherwise, the value is based on fair value using the IFRS valuation principles excluding own credit risk.

Deposits placed with third-parties up to 3 months
IFRS carrying value.

Deposits placed with third-parties over 3 months
Fair value using the IFRS valuation principles.

Credit risk allowances attributable to third-party investments held at amortized costs
Not valued (i.e., set to zero) provided credit risk is reflected in the market-consistent valuation of underlying investment.

In case the IFRS carrying value is used as proxy of the MCBS value of the underlying asset, the asset value is reported net of IFRS credit risk allowance.

Investments in associates and joint ventures
Not applicable.

Appendix 2.3: External debt including senior and subordinated debt

Not applicable.

Appendix 2.4: Other assets and other liabilities (non-insurance related)

Generally, the SST MCBS value for other assets and liabilities is equal to the amounts reported in the Group IFRS financials unless stated otherwise. Specifically, the following applies:

Derivatives

Fair value as reported under IFRS.

Receivables (incl. collateral received for derivatives, receivables from policyholders, amounts due from agents, intermediaries, insurance companies, credit impairment allowance)

IFRS carrying value provided this is a reasonable proxy to fair value (i.e., remaining maturity less than 1 year). In this case, the IFRS carrying value is reported net of credit impairment allowance.

Otherwise, the value is based on fair value (incl. credit risk) using the IFRS valuation principles.

Premium cancellation allowance

IFRS carrying value.

Reserve for premium refunds

IFRS carrying value.

Accrued investment income

IFRS carrying value.

Accrued other income or other liabilities

IFRS carrying value.

Prepaid expense or accrued liabilities

IFRS carrying value.

Provisions

IFRS carrying value.

Appendix 2.5: Best estimate of property and casualty insurance liabilities

Best estimate of unearned premium reserves (UPR) – third-party

Generally, Zurich recognizes UPR at latest upon start of the coverage period with certain exceptions (e.g., extended warranty contracts which are recognized when Zurich is issuing the contract and is bound). Typically this includes one year of premiums invoiced (i.e., also for multi-year policies generally only the first year premium is recognized and not the entire contractual future premium volume due in future reporting periods).

The MCBS value for UPR reflects the discounted costs of insurance, i.e., expected future loss reserves (including loss adjustment expenses (LAE)) and administration expenses that can arise from the unexpired risk. Please note that:

- Underwriting profits are not taken into account as these do not represent any future cash flows; and
- Administration expense only encompasses the estimated costs to administer and maintain the insurance policy over the remaining coverage period. Consequently, any deferred or non-deferred acquisition costs (such as commissions, sales and distribution management, underwriting, risk engineering, and marketing costs) as well as claims settlement costs (i.e., allocated and unallocated LAE) are not considered as administration expenses.

Appendix 2: Specific MCBS valuation principles *continued*

Illustrative breakdown of Unearned Premium Reserve (UPR)

The best estimate of discounted cost of insurance are determined as follows:

- Undiscounted value of the future losses (incl. an estimate for allocated and unallocated loss adjustment expenses) is derived by multiplying the IFRS UPR amount by a suitable loss ratio. The resulting future losses are discounted, for example, by multiplying the future loss amount by a discount factor which adequately reflects the expected cash flow pattern and risk-free rate;
- The sum of the undiscounted future expenses is estimated by multiplying the IFRS UPR amount by an administration expense ratio (AER). These expenses are assumed very short tailed and incurred as the premium is earned. Please note, AER cannot be negative.

$UPR_{External}^{MCBS} = UPR_{External}^{IFRS} * (\text{Loss ratio} * \text{Discount factor} + \text{Administration expense ratio})$

Any premium deficiency is included as part of the MCBS UPR best estimate and not presented separately.

Property and casualty insurance may issue insurance contracts (or reinsurance contracts) which are subject to life insurance accounting (e.g., prospective reserving for long-duration contracts). As a practical expedient, the IFRS balance may be used as a proxy.

Best estimate of loss reserves

Reserves for losses (i.e., case reserve, IBNR as well as allocated/ unallocated loss adjustment expenses) are held at best estimate under IFRS. Such best estimate includes recoverables for salvage and subrogation. However, most of these reserves are not discounted.

In order to derive an MCBS value, these reserves are discounted using a risk-free rate whereby the cash flow pattern (i.e., timing of the estimated future cash flows) are adequately considered. Cash flow pattern and risk-free discount rate may be articulated through a discount factor (DF) per transaction currency.

In case the reserves are already presented on a discounted basis in the Group IFRS (e.g. property and casualty annuities), the discounting is reversed and re-performed using the SST MCBS mandated risk-free rate.

Appendix 2.6: Best estimate of life investment & insurance liabilities

Not applicable.

Appendix 2.7: Reinsurance assets

For SST MCBS, the calculation of the best estimate for reinsurance assets and insurance liabilities is performed on a gross basis (i.e., no offsetting of assets with liabilities). This applies to both intercompany as well as external reinsurance.

Generally, reinsurance assets include the following:

- Cash receivables, i.e., receivables on paid claims/benefits
- Ceded reserves[1]

Property and Casualty Insurance
- Reserves for unearned premiums – cession
- Reserves for losses – cession (i.e., IBNR & case)
- Reserves for LAE – cession (i.e., IBNR & case; allocated & unallocated)
- Reserves for property and casualty annuities – cession

Similar to any other cash receivables, for SST MCBS purposes, third-party and intercompany cash receivables are valued using the IFRS carrying value, net of any valuation allowance for credit risk and disputed balances, provided this is a reasonable proxy to fair value (i.e., remaining maturity less than 1 year).

Otherwise, the value is based on fair value (incl. credit risk) using the IFRS valuation principles.

In line with IFRS reporting, ceded loss reserves and underlying direct insurance liabilities are measured and reported on a gross basis. Specifically, internal and external ceded reserves are identified and measured separately on an actuarial best estimate basis.

In relation to the calculation of the credit risk on ceded loss reserves for property and casualty insurance, both internal and external reinsurance have been considered.

2.7.1. Ceded property and casualty loss reserves

Under IFRS reinsurance assets for ceded loss reserves are already held at best estimate (i.e., sum of all expected future recoveries), but generally not discounted. To make these assets market-consistent, the timing of these cash flows is calculated and the future cash flows discounted. This is equivalent to multiplying the reinsurance assets for loss reserves by a discount factor based on the expected cash flow pattern and risk free rate.

The calculation may be illustrated as follows:

$$\textit{Ceded loss reserves}^{\,MCBS} = \textit{Ceded loss reserves}^{\,IFRS} * \textit{Discount Factor}_{\,ceded}$$

In respect to ceded unearned premium reserves (UPR), in order to derive the MCBS value, the IFRS value is restated to reflect the recoveries from a reinsurer that are expected to arise from the unexpired risk.

The IFRS value for ceded UPR may be considered to include

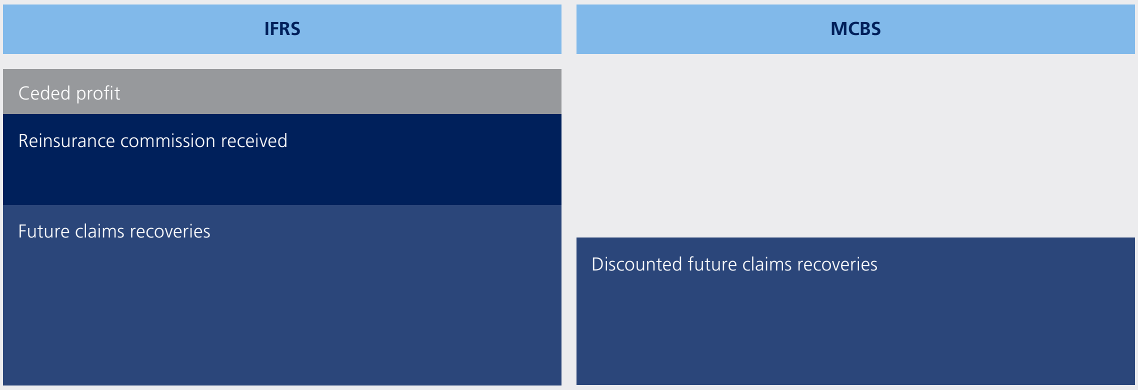
- Reinsurance commissions received
- Ceded underwriting profits
- Future claims recoveries
- Administrative expenses

Conversely, the MCBS value for ceded UPR shall only reflect a market-consistent value for future claims recoveries.

1 Ceded reserves are further segregated in order to differentiate between cession of direct insurance and retrocession of assumed business.

Appendix 2: Specific MCBS valuation principles *continued*

Illustrative breakdown of ceded UPR



In order to derive a market-consistent value for future claims recoveries,

- The sum of undiscounted future claim recoveries are estimated by multiplying the IFRS ceded UPR by a suitable loss ratio; and
- The estimated future claims recoveries are discounted. To consider the timing of the recoveries the expected future claim recoveries are multiplied by an adequate discount factor, which represents the expected cash flow pattern and risk free yields.

$$\textit{Ceded UPR}^{MCBS} = \textit{Ceded UPR}^{IFRS} * (\textit{Loss ratio}_{ceded} * \textit{Discount Factor}_{ceded})$$

Finally, administration expenses are not considered as part of the MCBS value as these are not recoverable from a reinsurer.

Appendix 3: Report of the statutory auditor on the ZRe financial statements

The Financial Condition Report is not audited.

The financial statements of Zurich Reinsurance Company Ltd, which comprise the income statement, balance sheet and notes to the financial statements for the year ended December 31, 2018, are audited. Please refer to the report of the auditor in the Zurich Reinsurance Company Ltd Annual Report 2018, page 16.

https://www.zurich.com/en/investor-relations/results-and-reports/ other-statutory-filings.

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