

Swiss Solvency Test capital modelling framework

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Zurich is one of few genuinely global insurers



Zurich is a leading multi-line insurer that serves its customers in global and local markets. With about 54,000 employees, it provides a wide range of property and casualty, and life insurance products and services in more than 210 countries and territories. Zurich's customers include individuals, small businesses, and mid-sized and large companies, as well as multinational corporations.

KEY FACTS¹

USD 52bn total revenues (excl. result on UL investments)

USD 195bn total group investments (economic view)

USD 4.6bn business operating profit (BOP)

USD 3.7bn net income attributable to shareholders (NIAS)

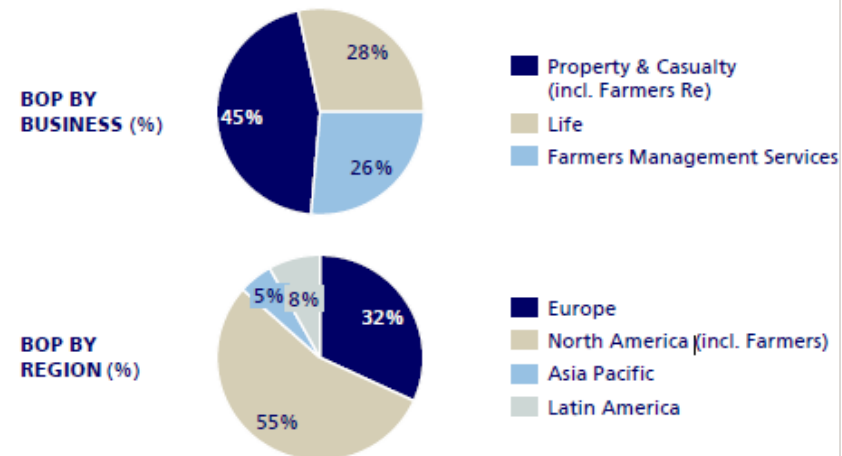
221% SST regulatory solvency ratio²

124% Zurich Economic Capital (Z-ECM) ratio

USD 30bn shareholders' equity

CHF 44bn market cap

A BALANCED GLOBAL BUSINESS³



¹ Values are for the full year 2018 unless otherwise noted. Investments, solvency ratios, shareholders' equity and market cap are as of December 31, 2018.

² The Swiss Solvency Test (SST) ratio as of January 1, 2019 has been calculated based on the Group's internal model, as agreed with FINMA. The full year ratio has to be filed with FINMA by end of April of each year and is subject to review by FINMA.

³ BOP values used are on an adjusted basis and an average for full years 2016, 2017 and 2018. BOP split by business excludes Group Functions & Operations and Non-Core Businesses. BOP split by region excludes additionally Group Reinsurance.



Zurich has its internal capital model since 2003, prior to regulatory regimes



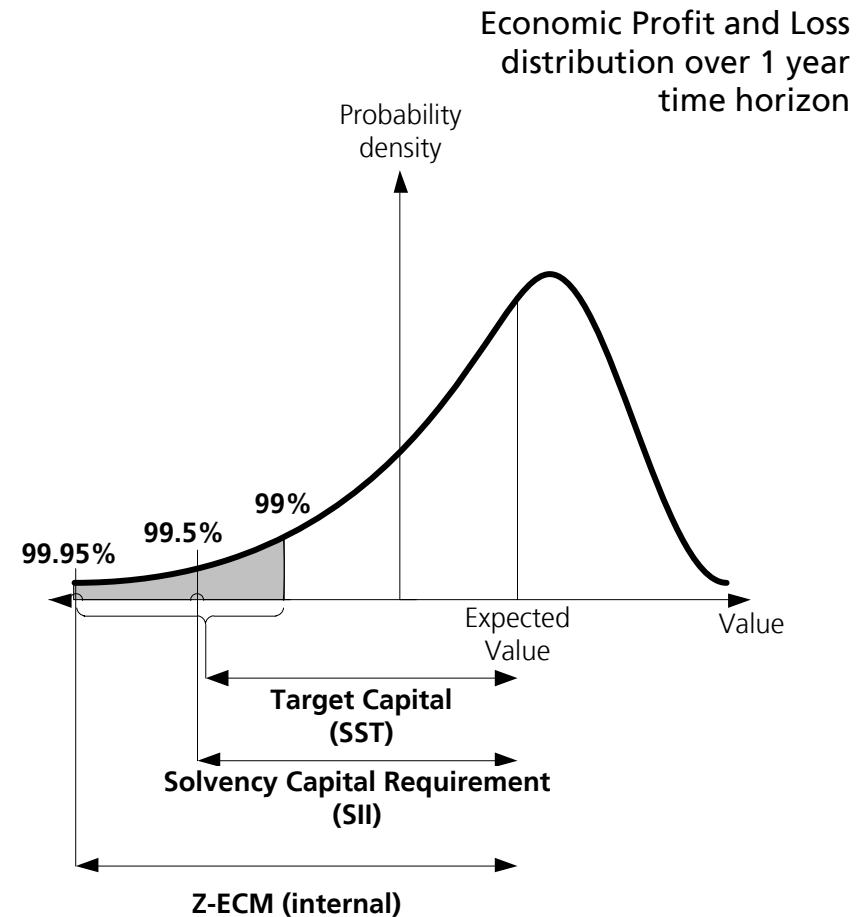
Continuous development of Zurich Economic Capital Model (Z-ECM)

- Zurich ECM is used for **business steering** and (with adaptations) **regulatory models** SST for Group and Solvency II for the European P&C carrier ZIP.
- Managing model consistency across varying regulations proves challenging. Every company has to receive a model approval from its regulator. **Internal Model Approval Processes are complex and labor intensive.**
- Zurich's European Life carriers use Solvency II Standard Formula for SCR.

Capital Models aim at assessing capital required to protect policyholders in extreme loss event

Capital Models aim at **assessing capital** required to **protect policyholders** in an extreme event of very large losses threatening an insurance company existence.

As future market volatility and ultimate insurance claims are **inherently unknown** the **required capital must be modelled** (predicted) using probabilistic techniques and actuarial methods.

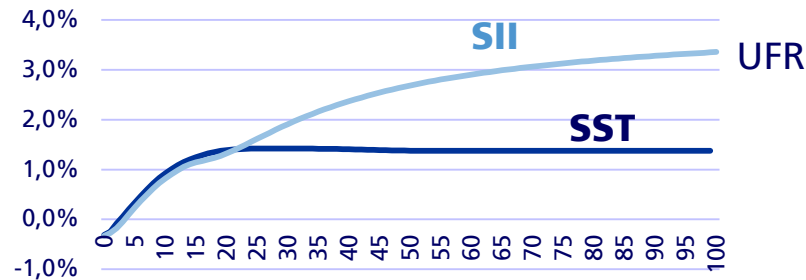


SST was the first regulatory regime based on Market Consistent Valuation principles

Market Consistent Economic Valuation:

- consistent valuation of assets and liabilities
- marked-to-market or marked-to-model
- intangibles excluded
- cost of capital for non-hedgeable insurance liabilities
- economic profit is allowed

Realistic reflection of **economic environment** ...



... and **riskiness** of portfolio (nothing is risk-free)

Group version for one balance sheet view. **Legal Entity version** requires modelling of capital fungibility.

Annual SST filing includes confidential reporting to FINMA (narrative report and templates) and public disclosure via Financial Condition Report.

Swiss Solvency Test – regulatory regime in Switzerland – in use since 2006.



Valuation of Balance Sheet and modelling of required capital must be consistent

Zurich ECM values Assets and Liabilities according to economic principles => **Market Consistent Valuation**

Assets are at market values or valued at the current market conditions.

Intangible assets not allowed.

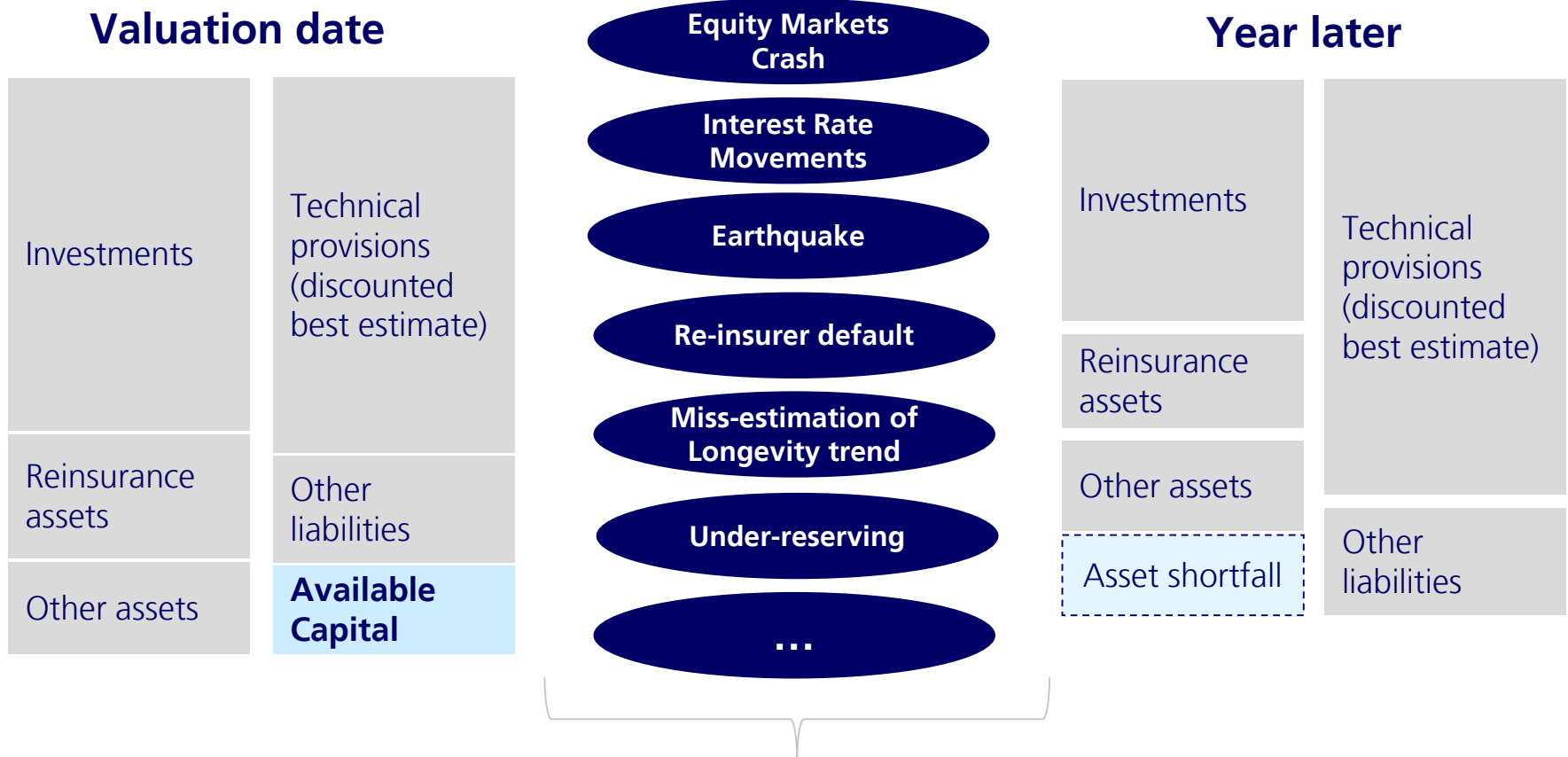
Certain eligible debt is count as Available Capital.

Investments	Technical provisions
Reinsurance assets	Other liabilities
Other assets	Available Capital

Actuarial Best estimate of insurance liabilities, discounted at current market conditions.

Valuation date

Zurich ECM assesses market, insurance and business risks which if materialized lead to Available Capital deterioration



Modelled stochastically with a large number of simulations. Each simulation results in re-valuation of the balance sheet and Available Capital. Under SST an average of 1% worst outcomes to the Available Capital (ES99%) defines the Required Capital.

Zurich ECM reflects Group's risk profile across multiple business lines and wide geographical footprint

Z-ECM capital required, split by risk type

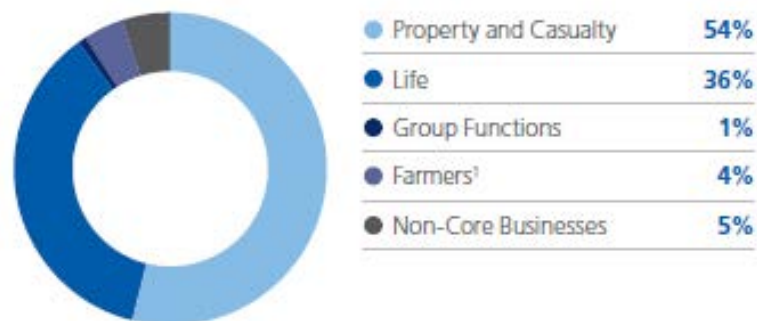
July 1, 2018

Total Z-ECM capital required: USD 30.7 billion



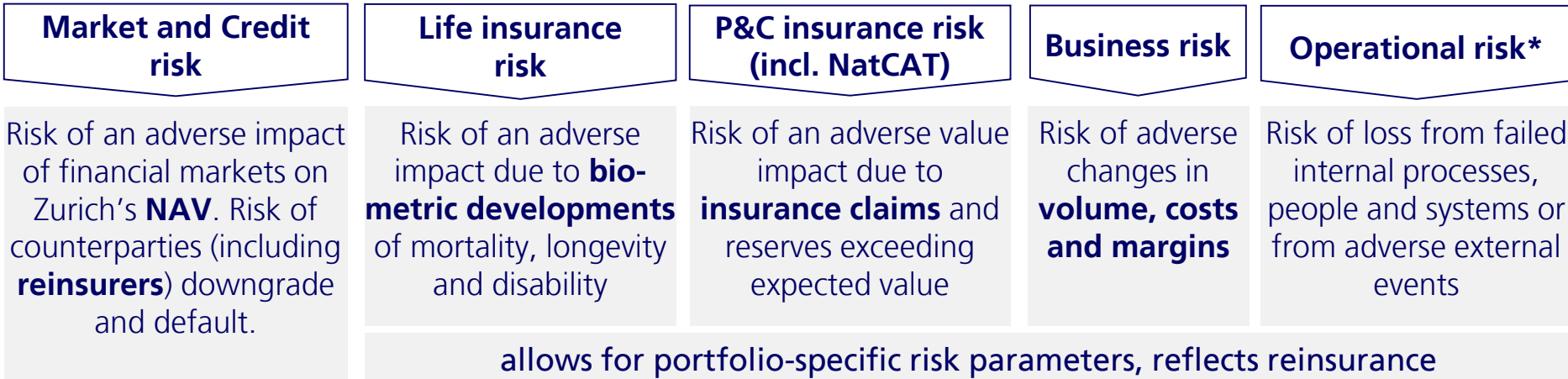
July 1, 2018

Total capital allocated: USD 30.9 billion¹



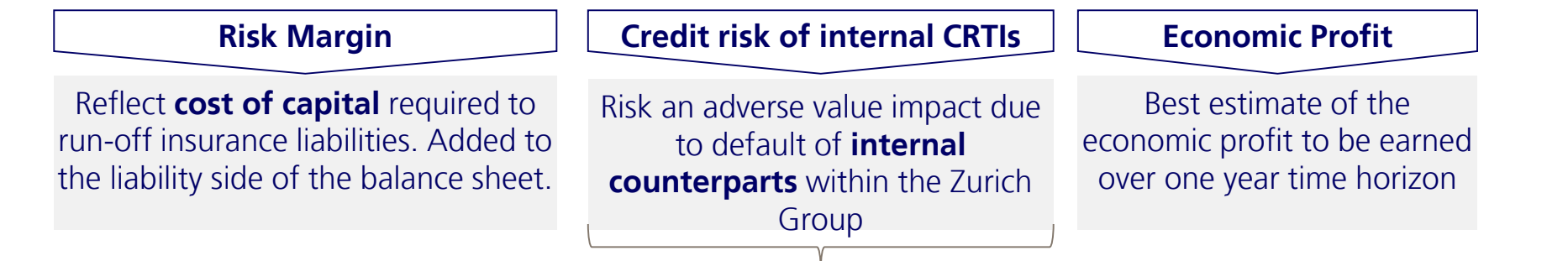
¹ Includes direct allocation of USD 0.2 billion to Farmers.

Zurich ECM reflects Group's risk profile. Volatility of underlying risk drivers modelled stochastically. ZURICH®



Risk Aggregation

The risks are aggregated across risk types, business lines and units taking into account **diversification** benefits.



Required Capital = ES99 less Economic Profit

*SST excludes operational risk
NatCAT = Natural Catastrophe

NAV = Net Asset Value
CRTI = Capital and Risk Transfer Instruments

Thank you

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