

SST 2018 Survey

FINMA Report on the Swiss Insurance Market

21 December 2018

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1 Introduction

This report provides an overview of the 2018 SST results and is based on data collected from 141 insurers (16 life insurers, 19 health insurers, 53 general insurers, 26 reinsurers and 27 reinsurance captives). It does not include insurance groups.

The survey was carried out at peer-group level according to sector: life, health, general insurance, reinsurance and reinsurance captives. The survey shows breakdowns of various key indicators such as total assets or liabilities, or target capital.

Unless otherwise stated, the scenario analysis only considers data of those companies where the specific scenario has an impact on the RBC. This avoids distortion due to companies for which a given scenario has no relevance. Note that scenarios are excluded from the analysis when less than five companies are concerned.

Quality and completeness checks were carried out for each key indicator, resolving most of the errors and obvious deficiencies. The “Fundamental Data Sheets” (FDS) completed by companies are the data source for this survey. The FDS contains detailed quantitative information such as the decomposition of risk-bearing capital and target capital. All supervised insurers are requested to fill in the FDS and submit it to FINMA, regardless of whether they use a standard model or an internal model.

2 Solvency overview

This report is divided into five sections according to sector: life, health, general insurance, reinsurance and reinsurance captive. Table 1 shows the breakdown of the 141 insurers into sector and category.¹ All supervised insurers are assigned to categories 2 to 5; categories 1 and 6 are not relevant for insurers.

	Category 2	Category 3	Category 4	Category 5	Total
Life	2	10	3	1	16
Health	0	7	9	3	19
General insurance	2	9	17	25	53
Reinsurance	1	11	11	3	26
Re Captive	0	0	7	20	27
Total	5	37	47	52	141

Table 1: Breakdown of all insurers subject to SST reporting requirements according to sector and supervisory category.

The 2017 and 2018 SST figures, including FINMA’s corrections, are restated in Tables 3 and 2, respectively. The figures presented in Table 2 show the aggregated 2018 SST results of all the participants.

Table 3 is a restatement of the 2017 numbers (including FINMA’s corrections). Compared to last year’s report, the numbers for reinsurance captives are now stated separately and the market value margin is explicitly shown for each sector.

¹ finma.ch > Supervision > Insurers > Categorisation

	RBC	TC	MVM	SST ratio
Life	69,686	43,785	9,038	175%
Health	10,687	4,178	247	266%
General insurance	81,097	41,976	9,760	221%
Reinsurance	51,504	25,863	4,580	220%
Re Captive	3,509	1,365	81	267%
Total	216,483	117,167	23,705	206%

Table 2: Restated risk-bearing capital (RBC, in CHF million), target capital (TC, in CHF million), market value margin (MVM, in CHF million) and SST ratios as of 1 January 2018, broken down by sector (including FINMA's corrections).

	RBC	TC	MVM	SST ratio
Life	64,519	43,913	9,708	160%
Health	9,672	4,002	227	250%
General insurance	75,800	38,387	8,463	225%
Reinsurance	56,881	28,512	4,777	220%
Re Captive	3,276	1,147	59	296%
Total	210,149	115,961	23,233	202%

Table 3: Restated risk-bearing capital (RBC, in CHF million), target capital (TC, in CHF million), market value margin (MVM, in CHF million) and SST ratios as of 1 January 2017, broken down by sector (including FINMA's corrections).

3 Goals of the analyses

The analyses presented in this section give a deeper insight into:

- investment structure;
- liability structure;
- best estimate of liabilities and target capital in relation to the total assets;
- split of target capital into its components, e.g. market, credit and insurance risk;
- split of market risk into interest rate risk, equity risk, etc.;
- split of interest rate risk into different currencies;
- scenarios and their impact on risk-bearing capital; indication of whether the SST capital requirements after scenario impacts are still met.

Two types of graph are shown:

- waterfall diagrams;
- box plots providing information on data dispersion.

To avoid conclusions that can be drawn about an insurer's individual risk profile, the data are pooled by insurance sector. The graphs illustrate a breakdown of the indicators into their components.

Assets

The total assets in the market-consistent balance sheet are shown as the sum of the different asset types (e.g. bonds, real estate, shares, etc.).

Liabilities

The total liabilities in the market-consistent balance sheet are split according to liability type.

Best estimate of liabilities and target capital in relation to the balance sheet total

The market value of assets (MV(A)) is decomposed into:

- best estimate of liabilities (BEL);
- market value margin (MVM);
- one-year capital requirement (SCR), which is computed as the difference between the target capital (TC) and the market value margin. The TC, SCR and MVM are linked through

$$TC = SCR + MVM \quad (1)$$

- excess capital (EC), which is defined as the difference between the risk-bearing capital (RBC) and the target capital (TC), which gives

$$RBC = TC + EC \quad (2)$$

- supplementary capital (SC);
- deductions (D).

More precisely:

$$MV(A) = BEL + MVM + SCR + EC - SC + D.$$

To show this, note that the core capital (CC) and the risk-bearing capital (RBC) are related through

$$RBC = CC + SC. \quad (3)$$

For the purpose of this analysis, the temporary adjustment term, where relevant, has been included in the supplementary capital. CC can now be expressed as:

$$CC = MV(A) - BEL - D,$$

from which the following relation is derived by means of (3):

$$MV(A) = BEL + RBC - SC + D.$$

By means of (1) and (2) we conclude that

$$\begin{aligned} MV(A) &= BEL + EC + TC - SC + D \\ &= BEL + MVM + SCR + EC - SC + D. \end{aligned}$$

Target capital decomposition

Target capital is the sum of the one-year capital requirement (SCR) and the market value margin (MVM). In turn, the SCR key components are market risk, credit risk, insurance risk and effect of the scenarios and diversification.

Market risk analysis

Market risk plays a dominant role in an economic, risk-based solvency regime. A number of risk factors, such as interest rates, credit spreads, exchange rates, real estate, to name but a few, contribute to market risk. Waterfall and box plot diagrams are used to present the most important market risk factors.

Interest rate risk analysis

Insurers with assets and liabilities denominated in different currencies are exposed to currency risk and generally also to interest rate risk. In such cases, the total interest rate risk comprises the interest rate risk of each currency. We have shown the decomposition of the total interest rate risk into four currencies CHF, EUR, USD and GBP, including the effect of diversification.

Scenarios

For each scenario, we compute and show the impact ratio, which is defined as below:

$$\text{Impact ratio} = \frac{RBC - MVM + c}{RBC - MVM}.$$

Typically, a scenario impact c with a negative value represents a loss. To concentrate only on relevant scenarios, scenarios with no impact (i.e. $c = 0$) are ignored.

Furthermore, a reference scenario called excess capital loss was introduced. The loss of this scenario is the *excess capital* (EC), i.e. $c = -EC$. This loss is understood as the maximum loss an insurer can endure and still remain solvent. It should be noted that the impact ratio of this reference scenario can be expressed with the help of the target capital (TC). To obtain the corresponding impact ratio, we used relation (2), i.e. $RBC = TC + EC$,:

$$\text{Impact ratio} = \frac{RBC - MVM - EC}{RBC - MVM} = \frac{TC - MVM}{RBC - MVM}.$$

To facilitate the comparison of general scenarios with this reference scenario, the impact ratio of the latter is illustrated in a different colour.

Scenarios exempted from the target capital aggregation are labelled (naS) for “non-aggregated Scenarios”.

4 Life

The overall SST ratio calculated over all life insurers increased by 15 percentage points from 160% in 2017 to 175% in 2018. The risk bearing capital increased by 8.0% to CHF 69,686 million, while target capital went down by 0.3% to CHF 43,785 million. The comparison is based on aggregate numbers obtained by summing over all life insurers (16 in total).

With regard to the individual analysis, in order to avoid that companies with larger volume dominate the results, an average over the percentages for each company is shown.

4.1 Comments on results

The asset portfolios of life insurers are dominated by bond investments (54%) followed by investment in real estate (19%) and unit-linked life insurance (14%), as illustrated in Figure 1a “Assets”. A further breakdown² of the investment categories bonds and real estate is shown in Table 4.

Life	FDS component	
Bonds	Investment funds: bonds	2.2%
	Fixed income securities, loans	97.8%
Real estate	Mortgages	28.1%
	Real estate	68.2%
	Investment funds: real estate	3.7%

Table 4: Breakdown of investment categories *bonds* and *real estate* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

As shown in Figure 2a “Liabilities”, the liabilities of life insurers are dominated by individual life liabilities (45%) followed by group life liabilities (29%) and unit-linked liabilities (16%).

In Figure 4a “Target capital decomposition” it is shown that the one-year capital and market value margin correspond to 80% and 20% of the target capital, respectively. The one-year capital is driven (before diversification) by the market risk (56%) followed by the insurance risk (20%) and credit risk (17%).

The main drivers of the market risk (before the diversification) are the interest rate risk (60%) and spread risk (44%). As shown in Figure 6a, interest rate risk is dominated by the CHF interest rate risk (114% before diversification).

It should be noted that positions that are non-empty for less than five companies (e.g., “Participations risk” under “Market risk analysis”) are excluded from the box-plot analysis. This is the reason why the waterfall chart and the box-plot might not always show the same positions.

²A further decomposition is shown only for the dominating categories that have at least two different components.

4.2 Assets

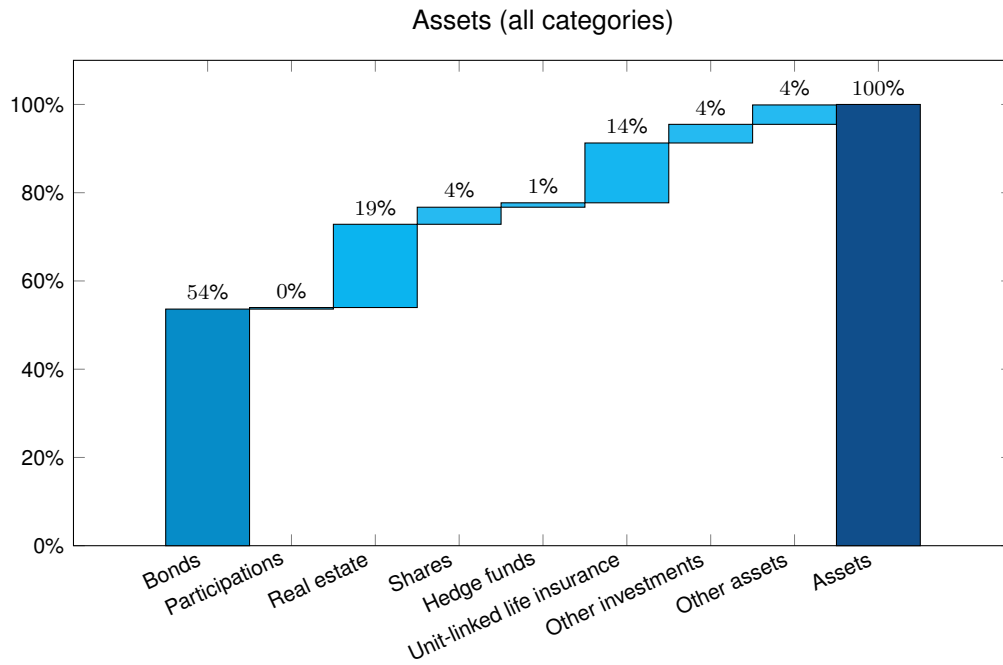


Figure 1a: Life (mean values by sector)

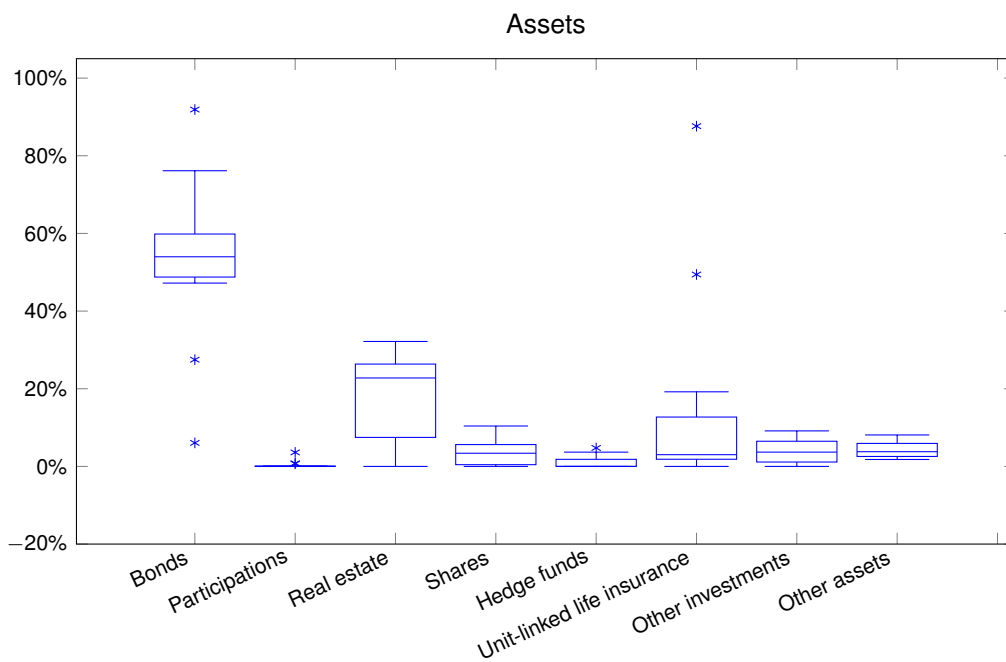


Figure 1b: Life (distribution as box-plot)

4.3 Liabilities

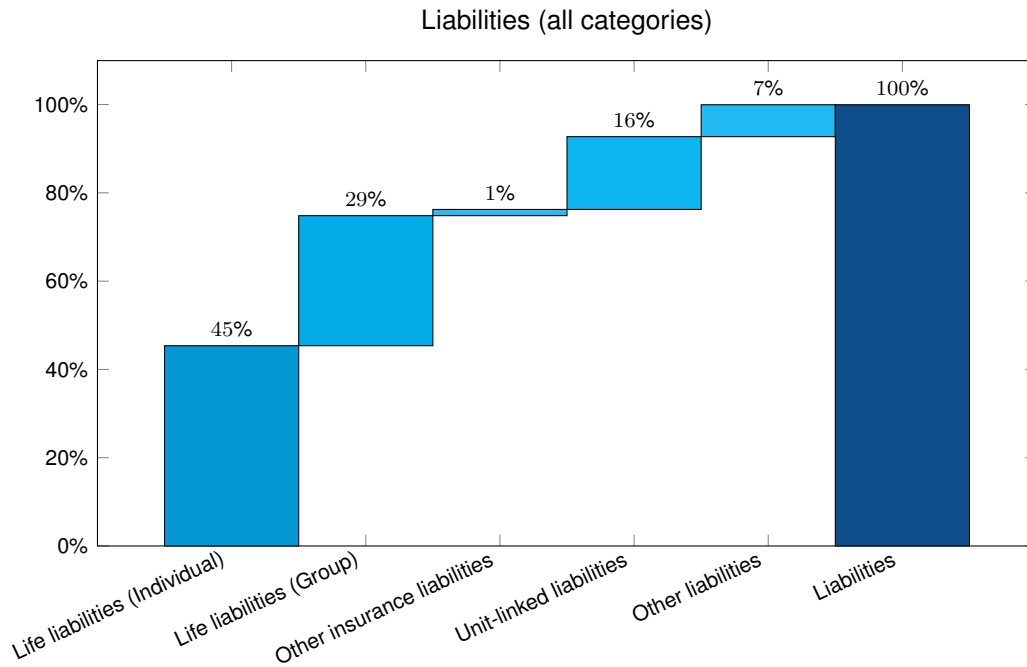


Figure 2a: Life (mean values by sector)

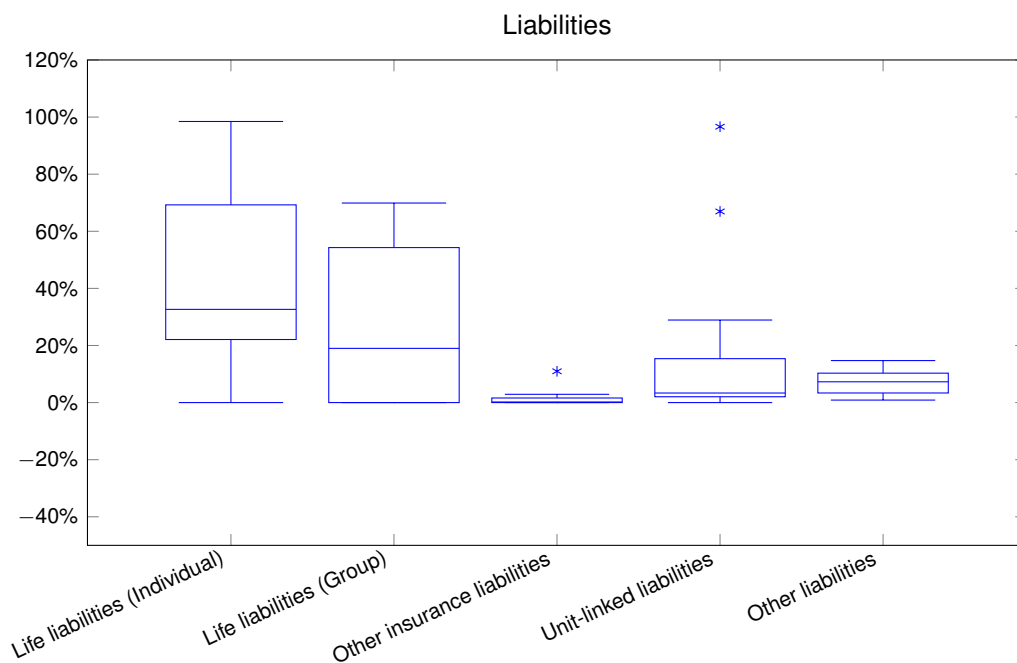


Figure 2b: Life (distribution as box-plot)

4.4 Best estimate of liability and target capital in relation to the balance sheet total

Best estimate of liability and target capital in relation to the balance sheet total (all categories)

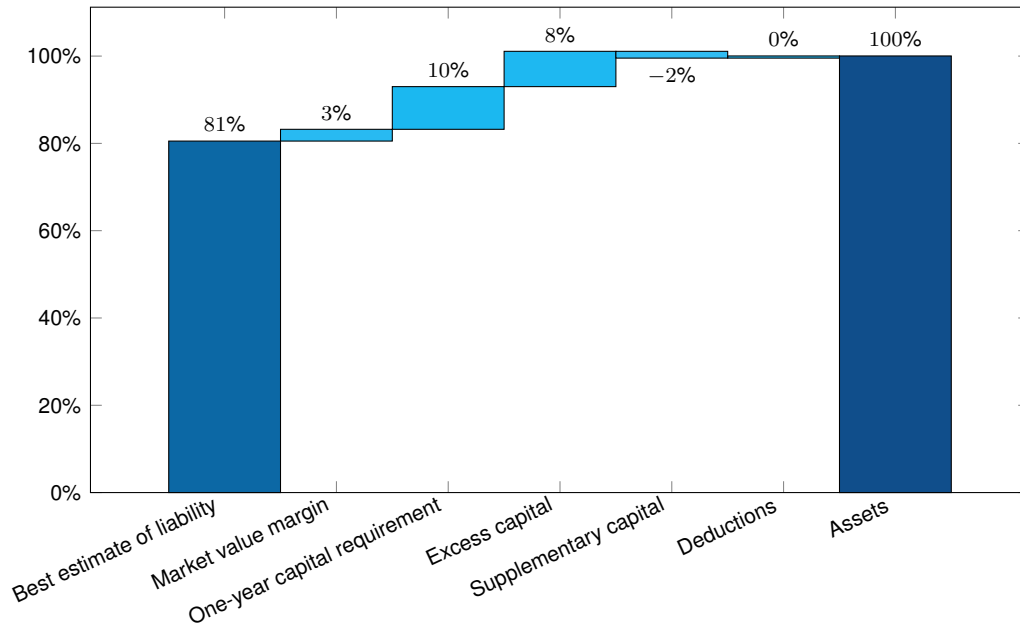


Figure 3a: Life (mean values by sector)

Best estimate of liability and target capital in relation to the balance sheet total

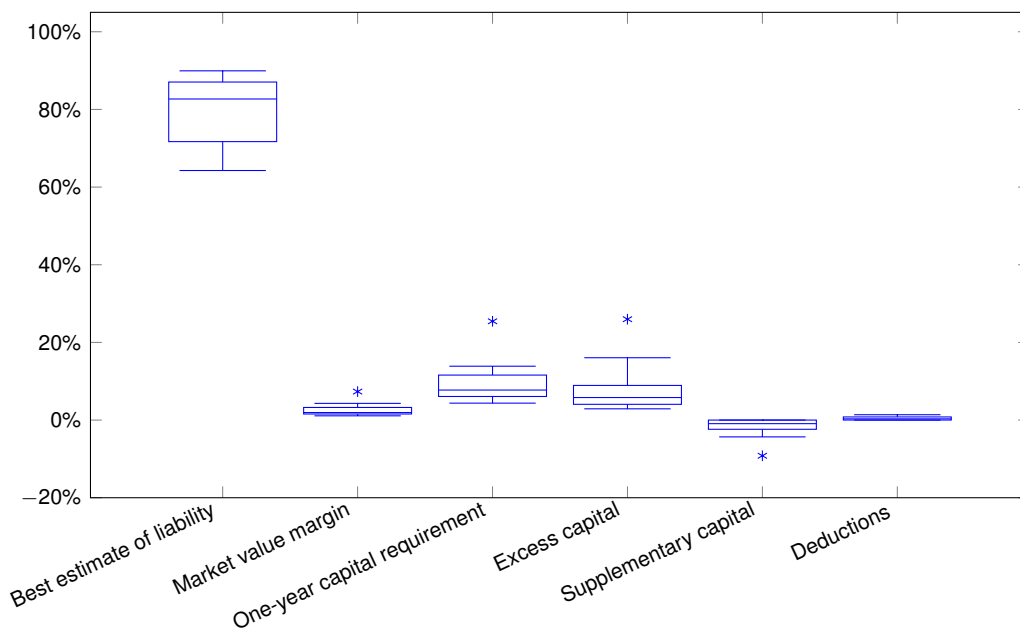


Figure 3b: Life (distribution as box-plot)

4.5 Target capital decomposition

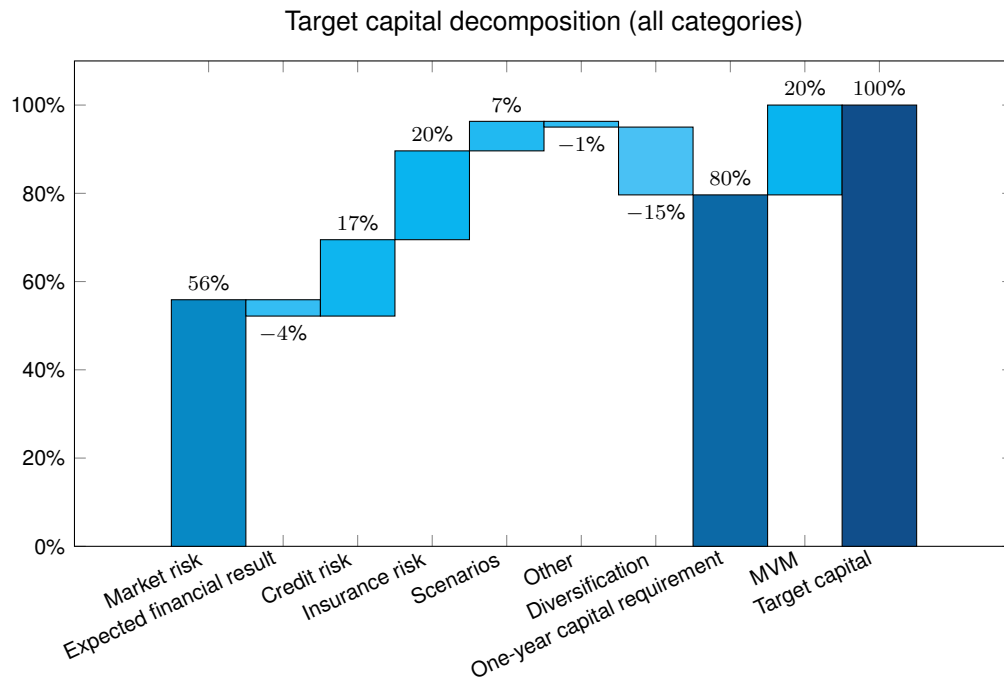


Figure 4a: Life (mean values by sector)

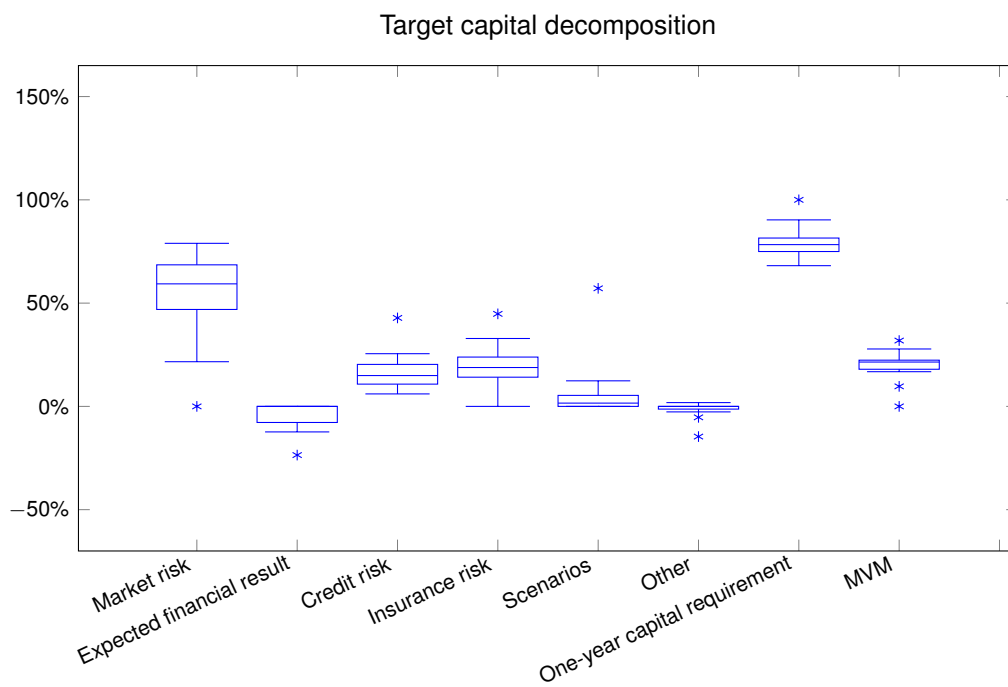


Figure 4b: Life (distribution as box-plot)

4.6 Market risk analysis

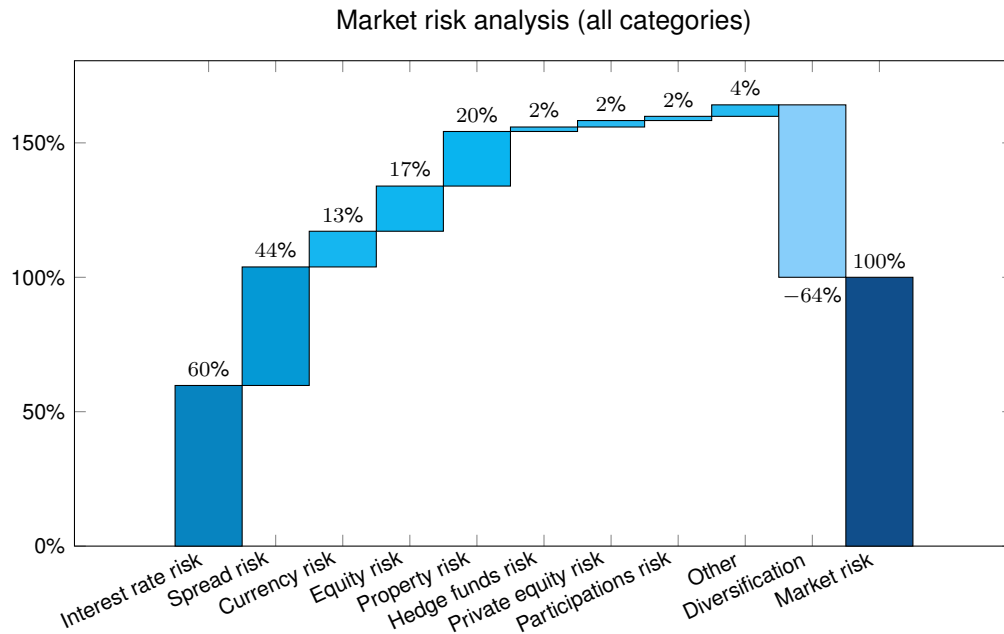


Figure 5a: Life (mean values by sector)

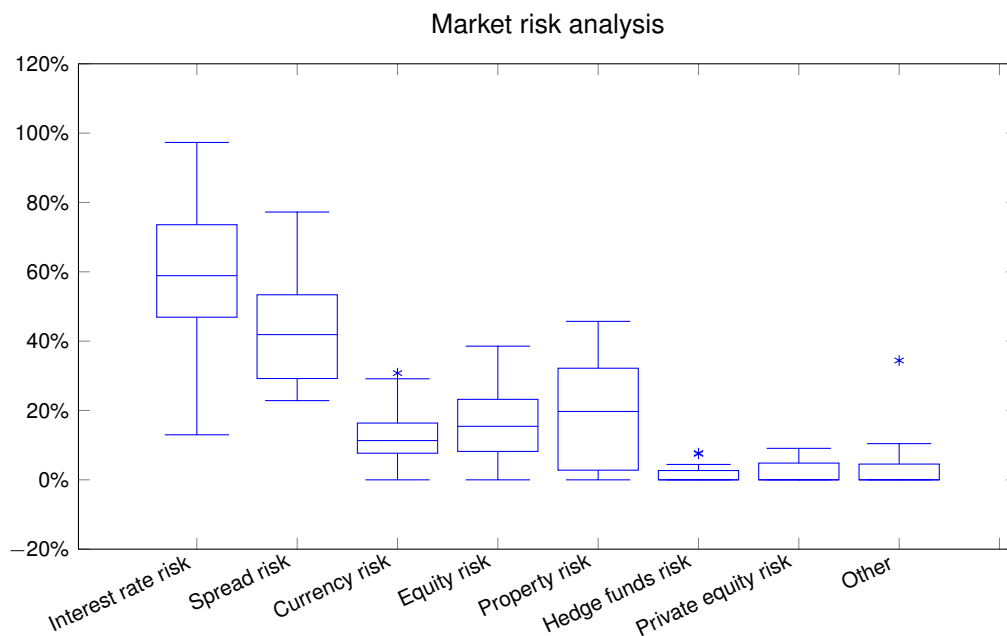


Figure 5b: Life (distribution as box-plot)

4.7 Interest rate analysis

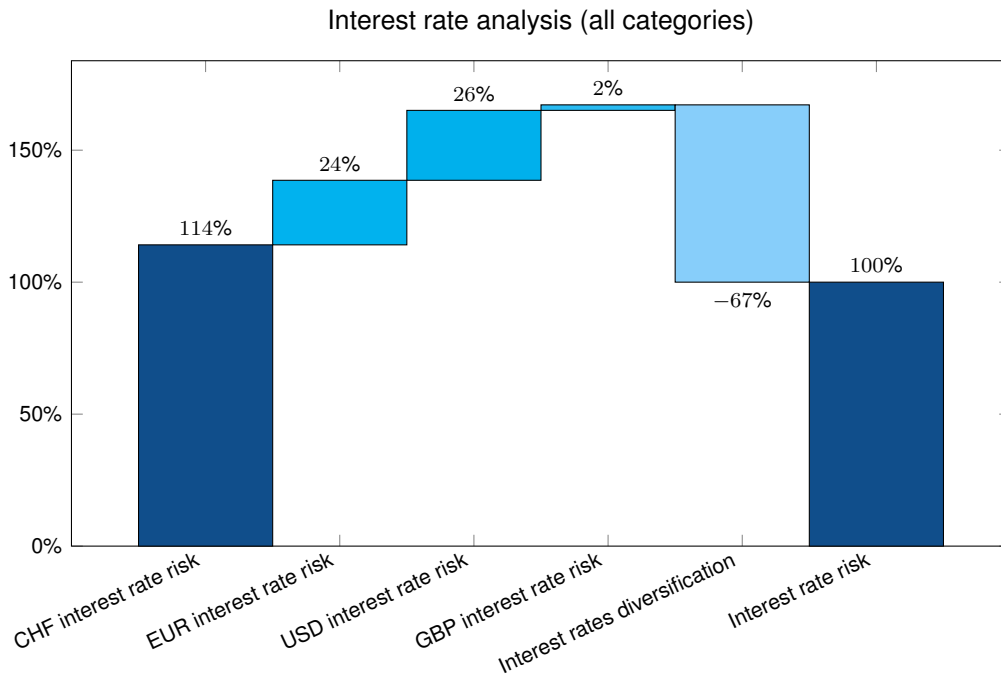


Figure 6a: Life (mean values by sector)

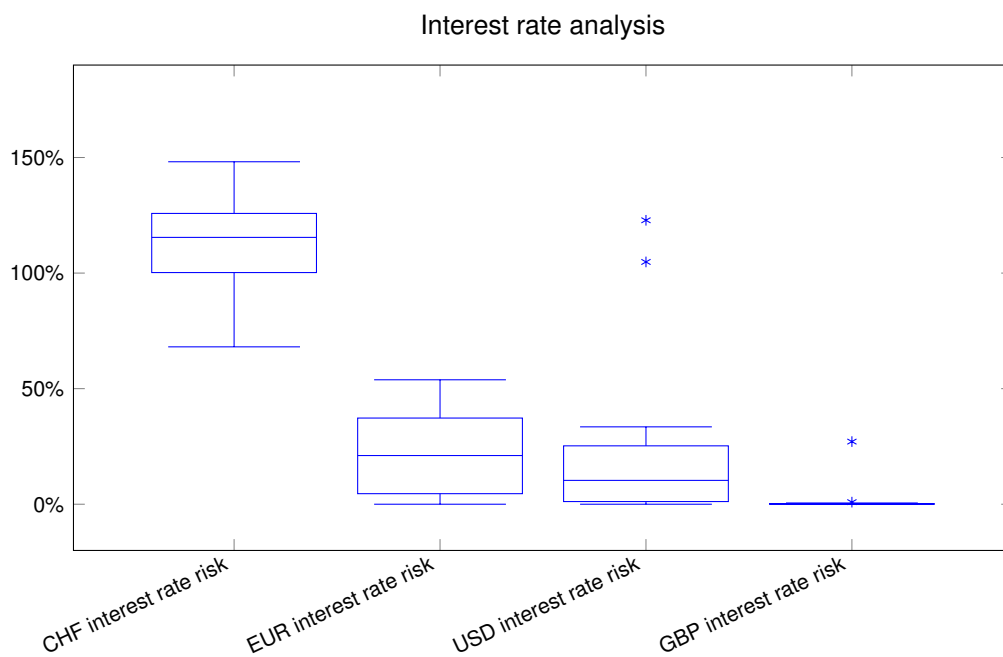


Figure 6b: Life (distribution as box-plot)

4.8 Market and credit risk scenarios

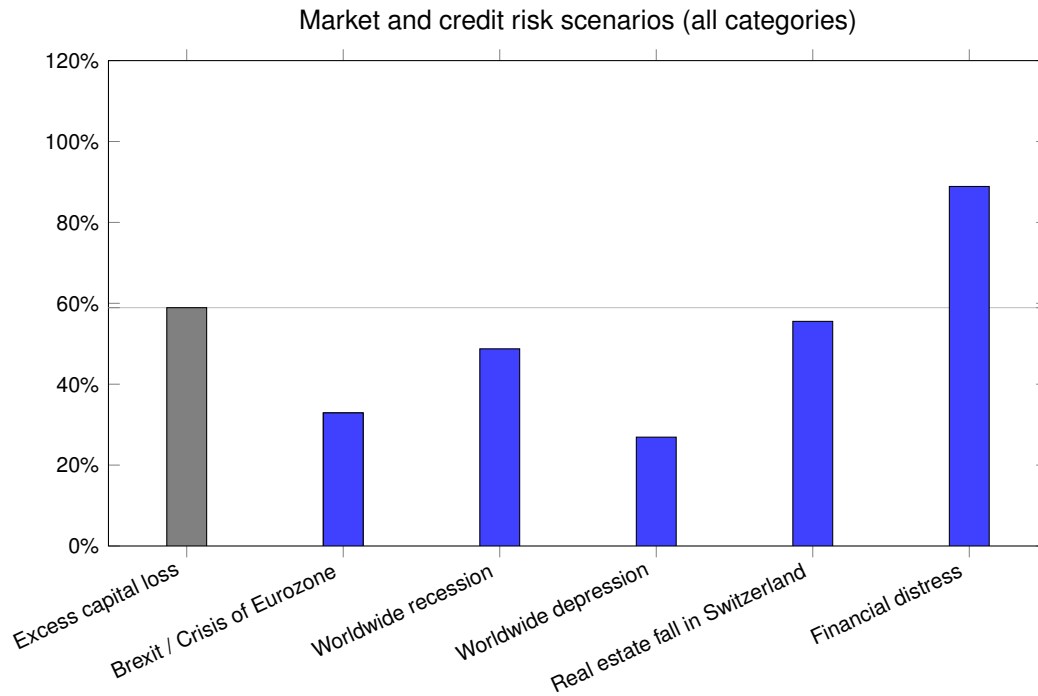


Figure 7a: Life (mean values by sector)

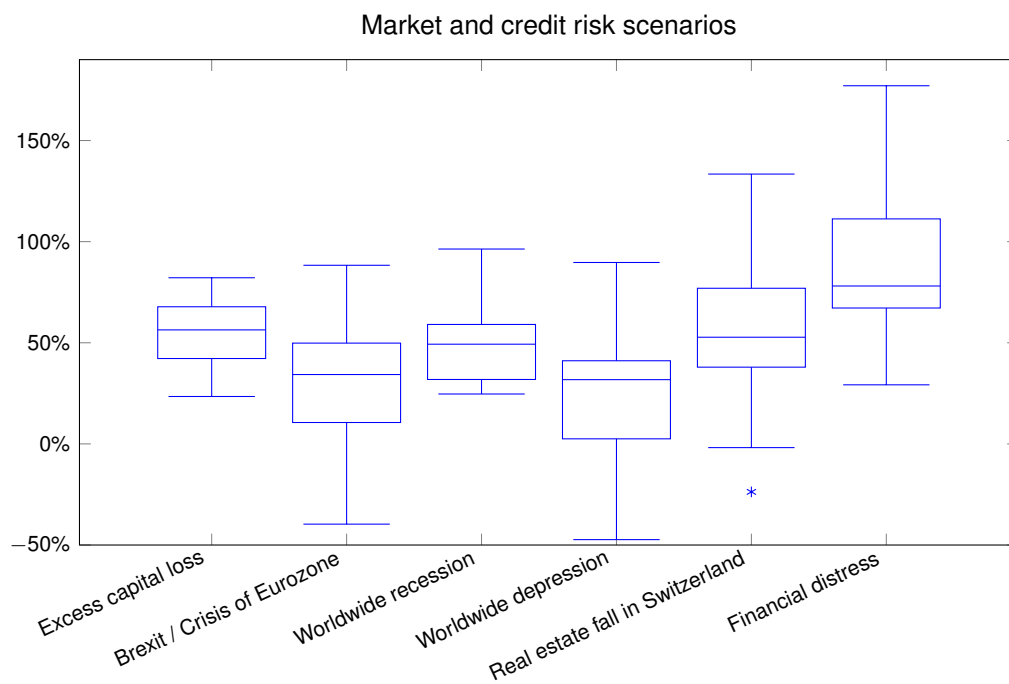


Figure 7b: Life (distribution as box-plot)

4.9 Insurance risk and global scenarios

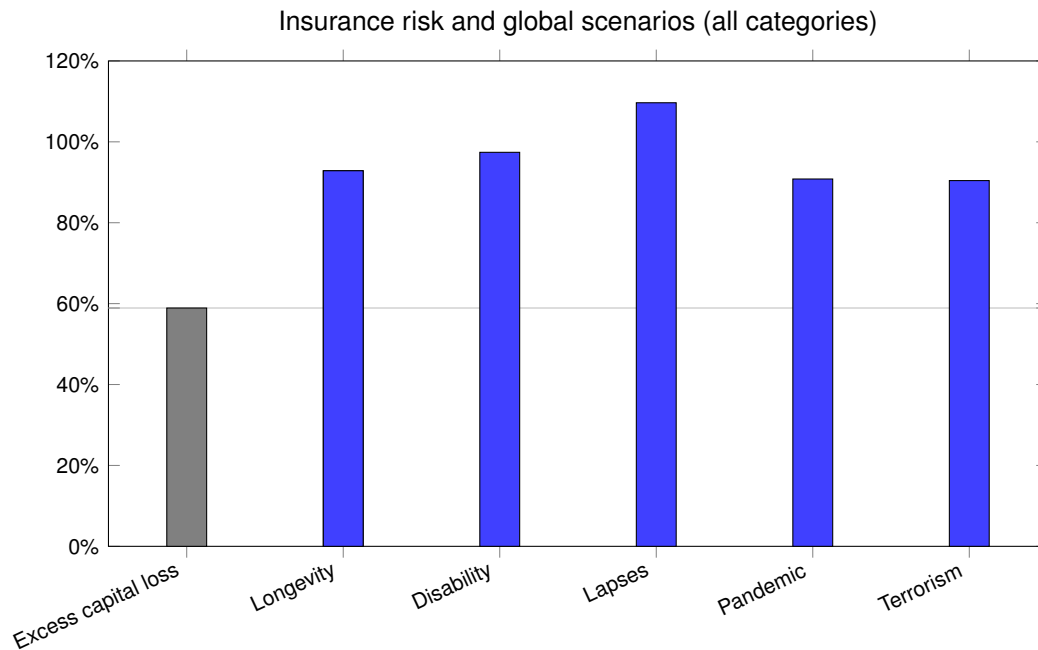


Figure 8a: Life (mean values by sector)

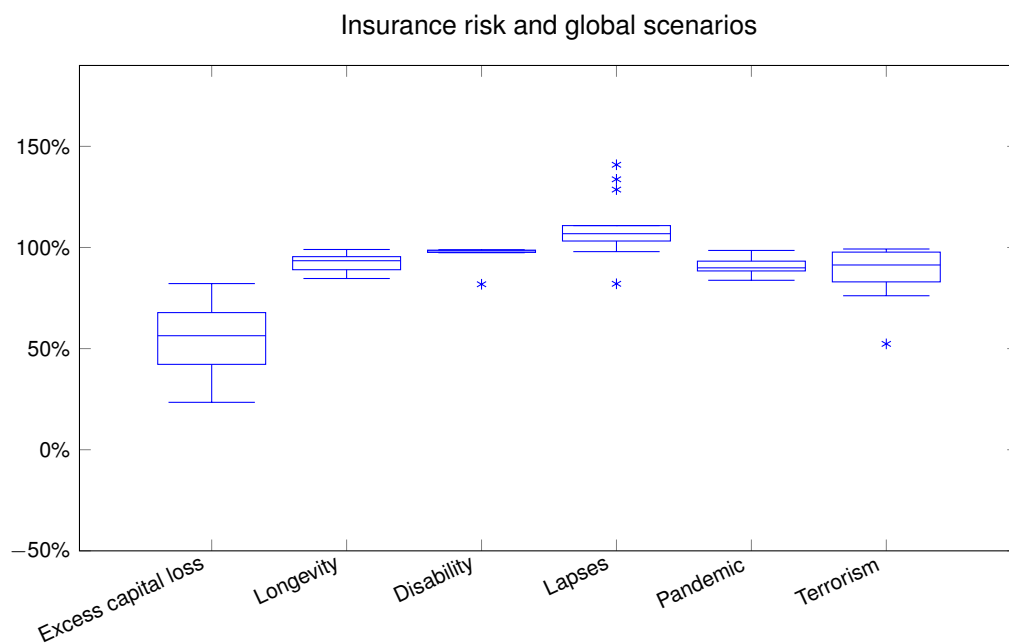


Figure 8b: Life (distribution as box-plot)

5 General insurance

The overall SST ratio calculated over all general insurers decreased by 4 percentage points from 225% in 2017 to 221% in 2018. The risk bearing capital increased by 7.0% to CHF 81,097 million, while target capital went up by 9.4% to CHF 41,976 million. The comparison is based on aggregate numbers obtained by summing over all general insurers (53 in total).

With regard to the individual analysis, in order to avoid that companies with larger volume dominate the results, an average over the percentages for each company is shown.

5.1 Comments on results

The asset portfolios of general insurers are mainly concentrated in bond investments (37%) followed by other assets (30%), as illustrated in Figure 9a “Assets”. A further breakdown³ of the investment category bonds is shown in Table 5.

General Insurance	FDS component	
Bonds	Investment funds: bonds	28.8%
	Fixed income securities, loans	71.2%

Table 5: Breakdown of investment category *bonds* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

As shown in Figure 10a “Liabilities”, the liabilities of general insurers are dominated by the loss reserves (59%) followed by the other liabilities (26%). In Table 6, a breakdown of loss reserves and other liabilities into their components is shown.

In Figure 12a “Target capital decomposition” it is shown that the one-year capital and the market value margin correspond to 86% and 14% of the target capital, respectively. The one-year capital is driven (before diversification) by the insurance risk (58%) followed by the market risk (46%).

The main drivers of the non-life insurance risk (before diversification) are the reserve risk (62%) and the normal claims (43%). The main drivers of market risk (before diversification) are the equity risk (44%) and interest rate risk (34%). As shown in Figure 14a the interest rate risk is dominated by the CHF interest rate risk (72% before diversification).

It should be noted that positions that are non-empty for less than five companies (e.g., “Unit-linked life insurance” under “Assets”) are excluded from the box-plot analysis. This is the reason why the waterfall chart and the box-plot might not always show the same positions.

³A further decomposition is shown only for the dominating categories that have at least two different components.

General Insurance	FDS component	
Loss reserves	Best estimate of insurance liabilities (non-life): gross	95.2%
	Active reinsurance (indirect business)	4.8%
Other liabilities	Reserves for surplus funds	0.82%
	Deposit liabilities from ceded reinsurance	0.06%
	Liabilities from derivative financial instruments	0.61%
	Non-technical provisions	10.84%
	Liabilities from insurance business	31.49%
	Other liabilities	46.61%
	Interest-bearing liabilities	5.45%
Subordinated liabilities	4.12%	

Table 6: Breakdown of *loss reserves* and *other liabilities* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

5.2 Assets

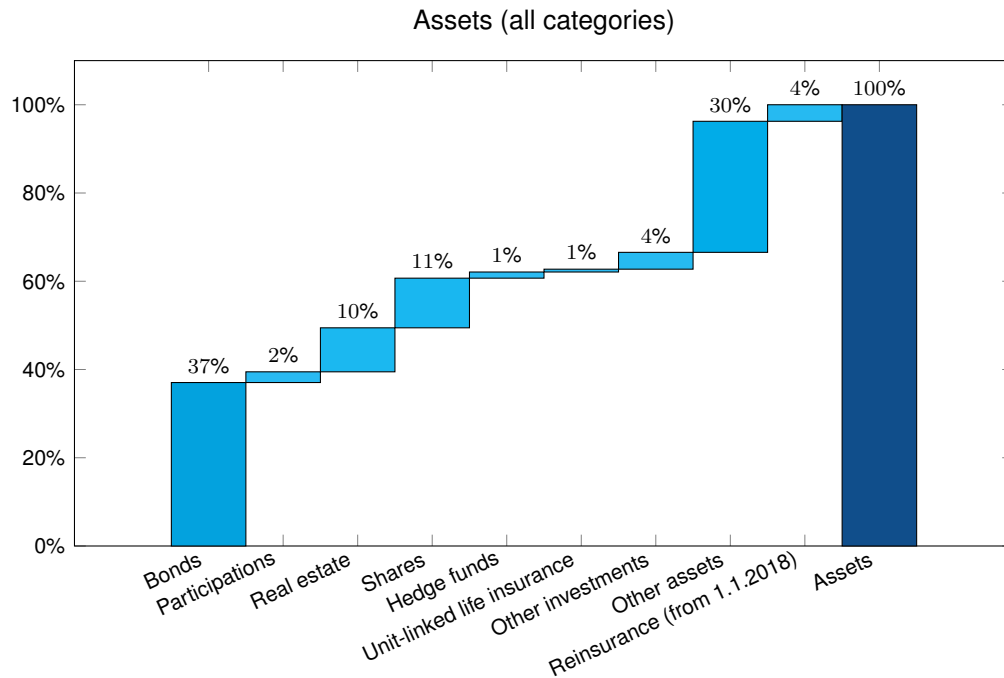


Figure 9a: General insurance (mean values by sector)

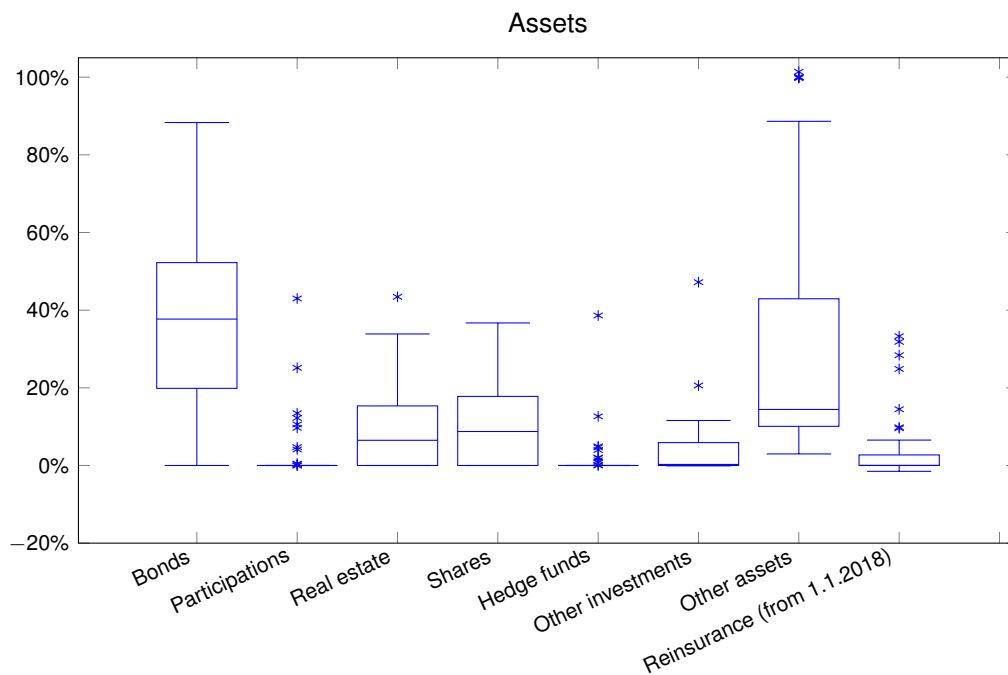


Figure 9b: General insurance (distribution as box-plot)

5.3 Liabilities

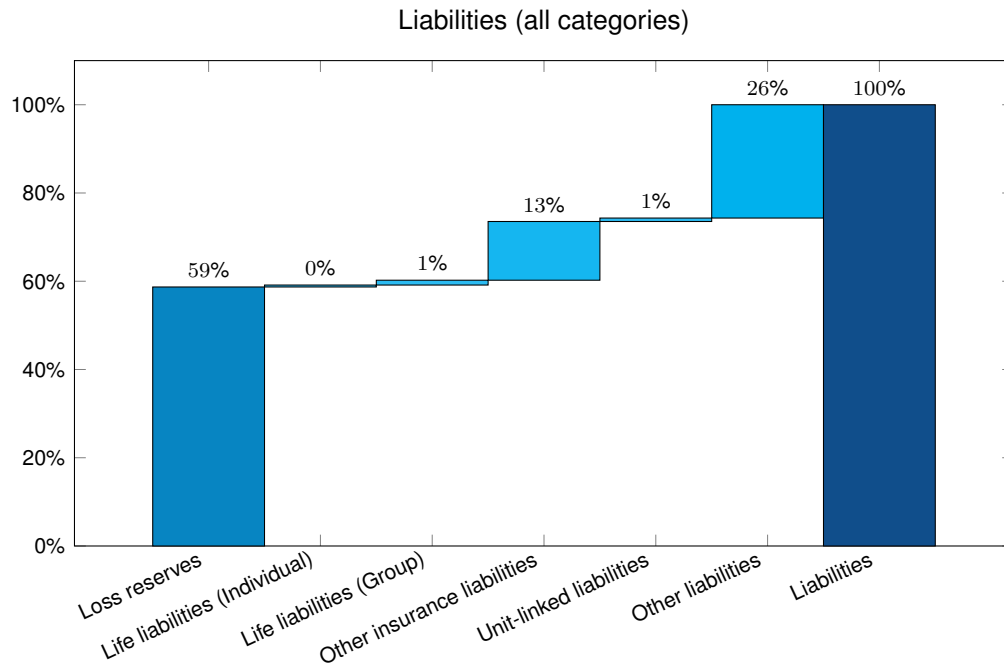


Figure 10a: General insurance (mean values by sector)

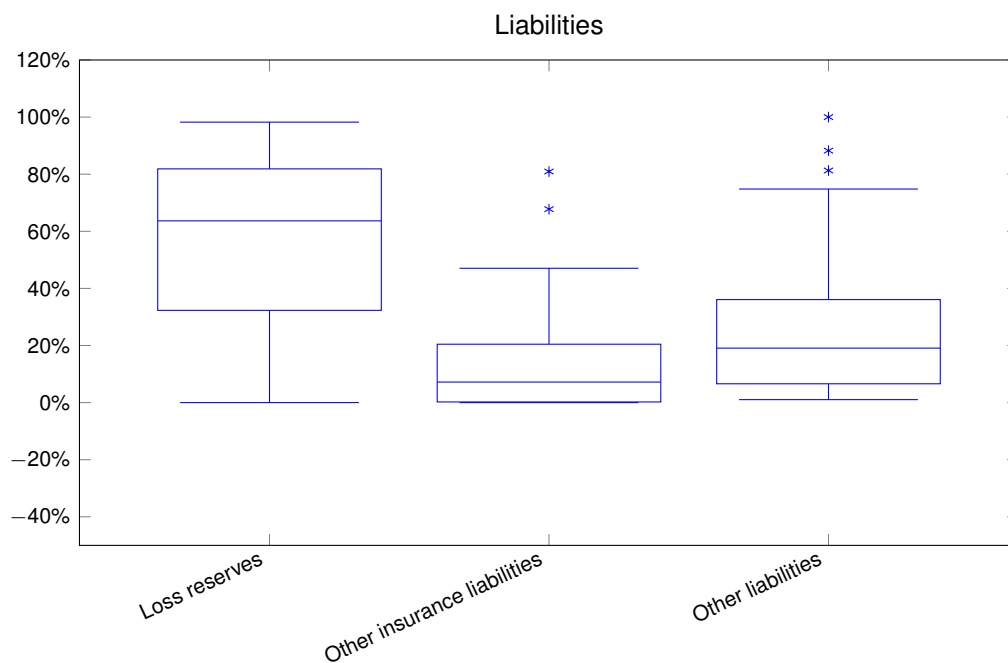


Figure 10b: General insurance (distribution as box-plot)

5.4 Best estimate of liability and target capital in relation to the balance sheet total

Best estimate of liability and target capital in relation to the balance sheet total (all categories)

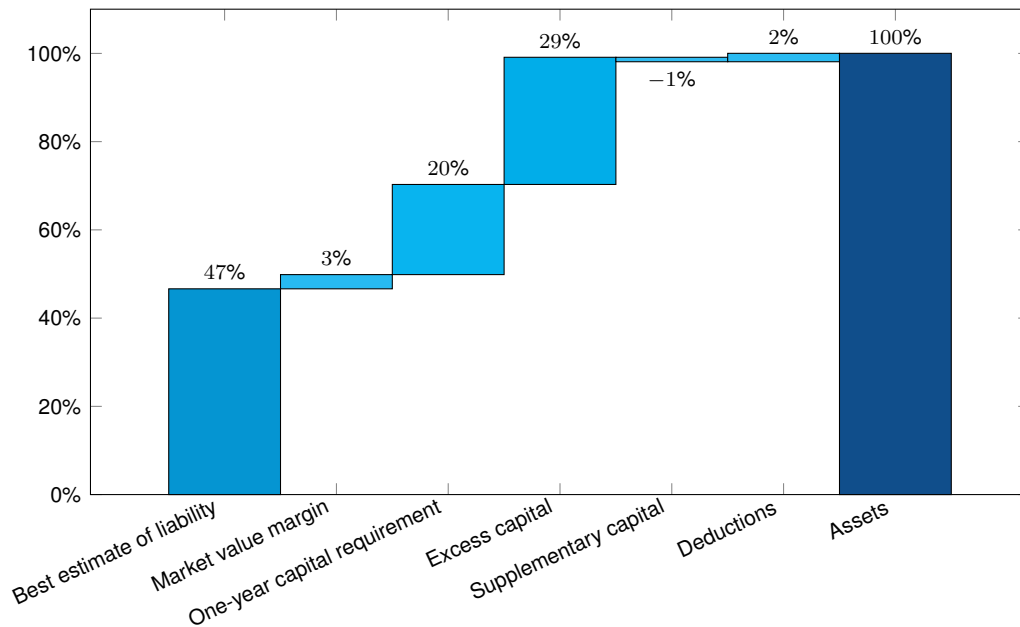


Figure 11a: General insurance (mean values by sector)

Best estimate of liability and target capital in relation to the balance sheet total

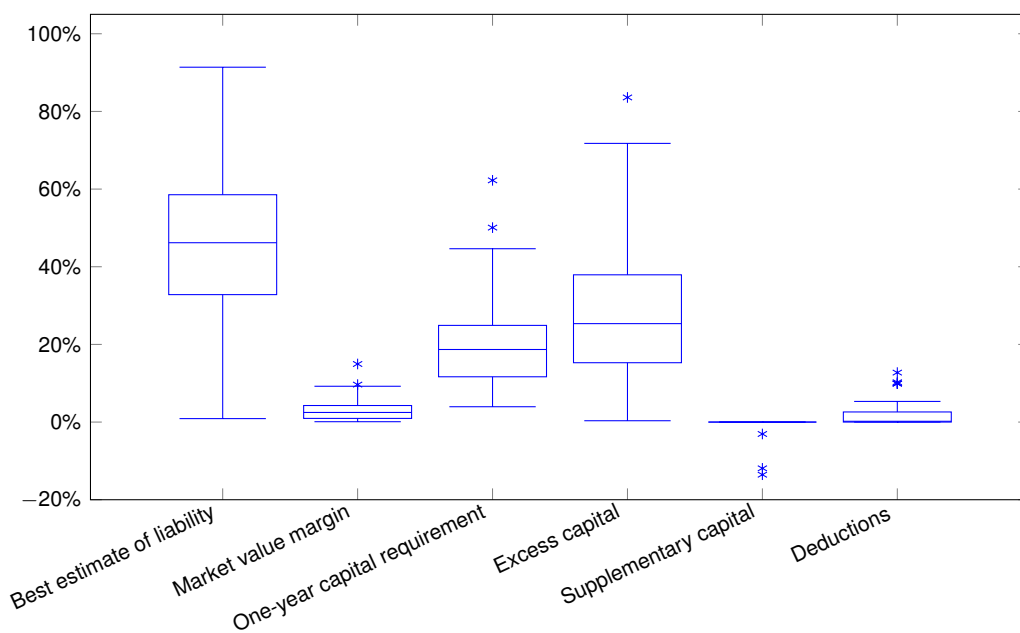


Figure 11b: General insurance (distribution as box-plot)

5.5 Target capital decomposition

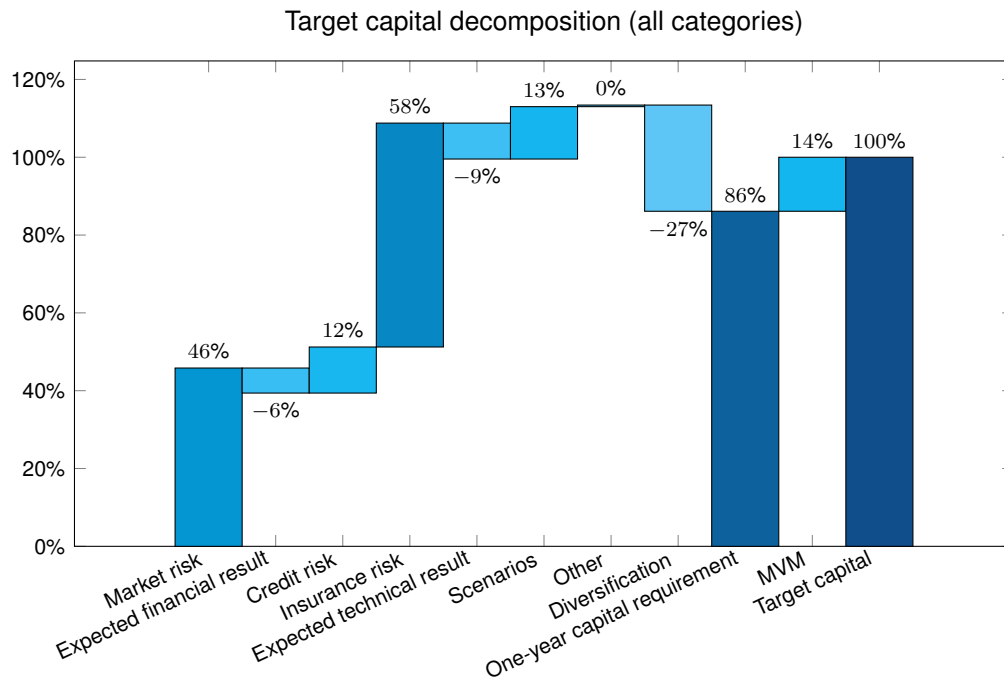


Figure 12a: General insurance (mean values by sector)

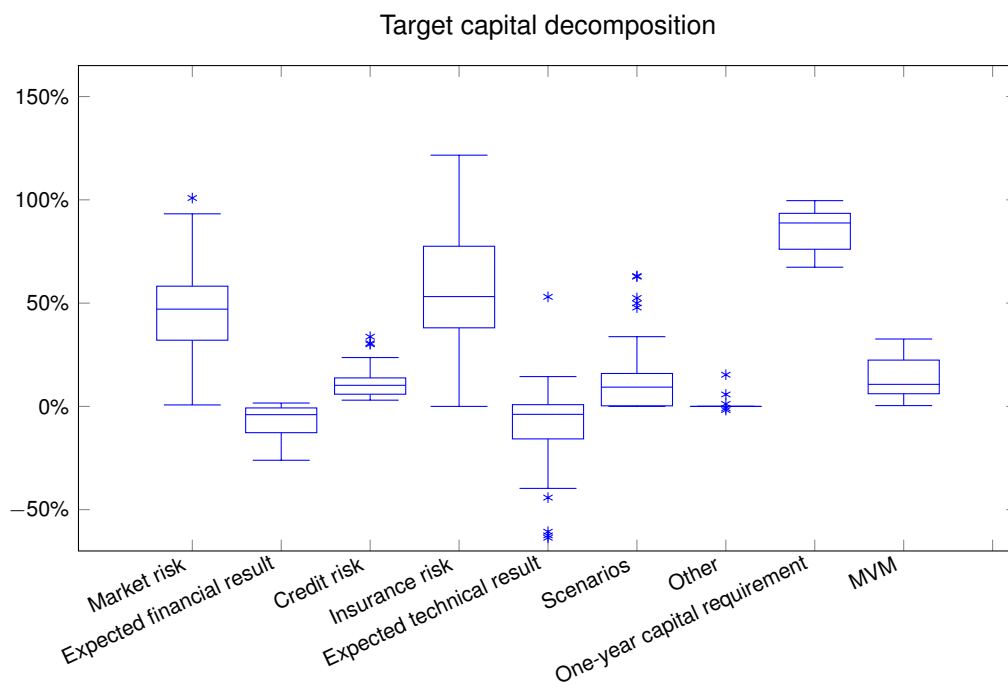


Figure 12b: General insurance (distribution as box-plot)

5.6 Market risk analysis

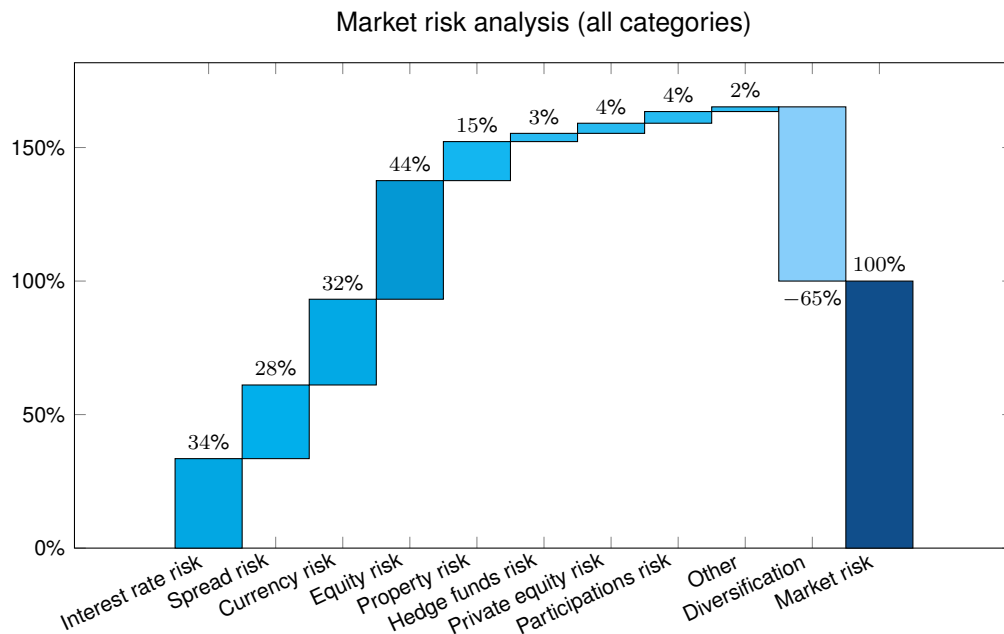


Figure 13a: General insurance (mean values by sector)

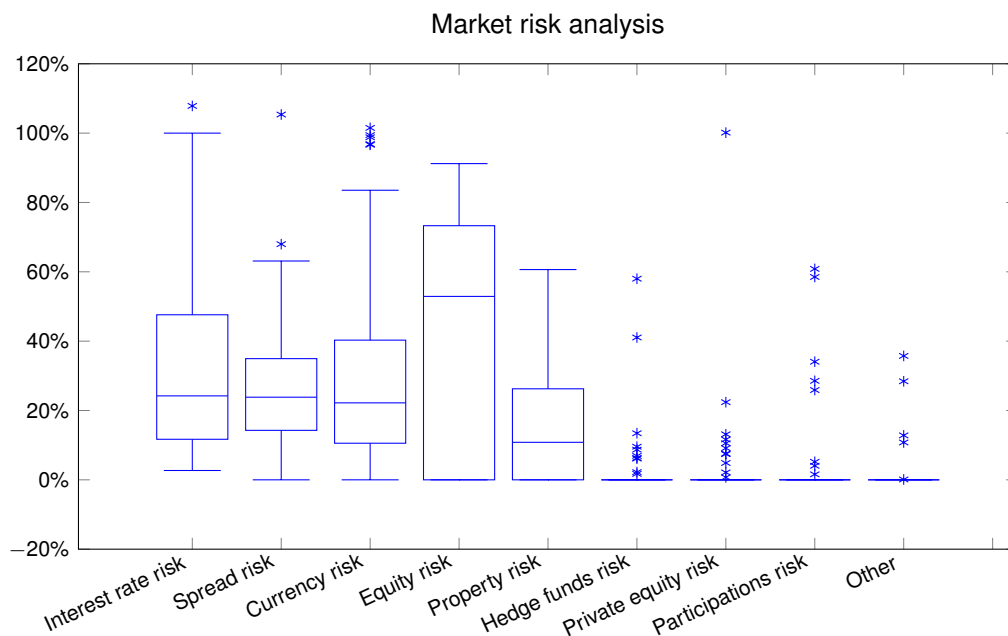


Figure 13b: General insurance (distribution as box-plot)

5.7 Interest rate analysis

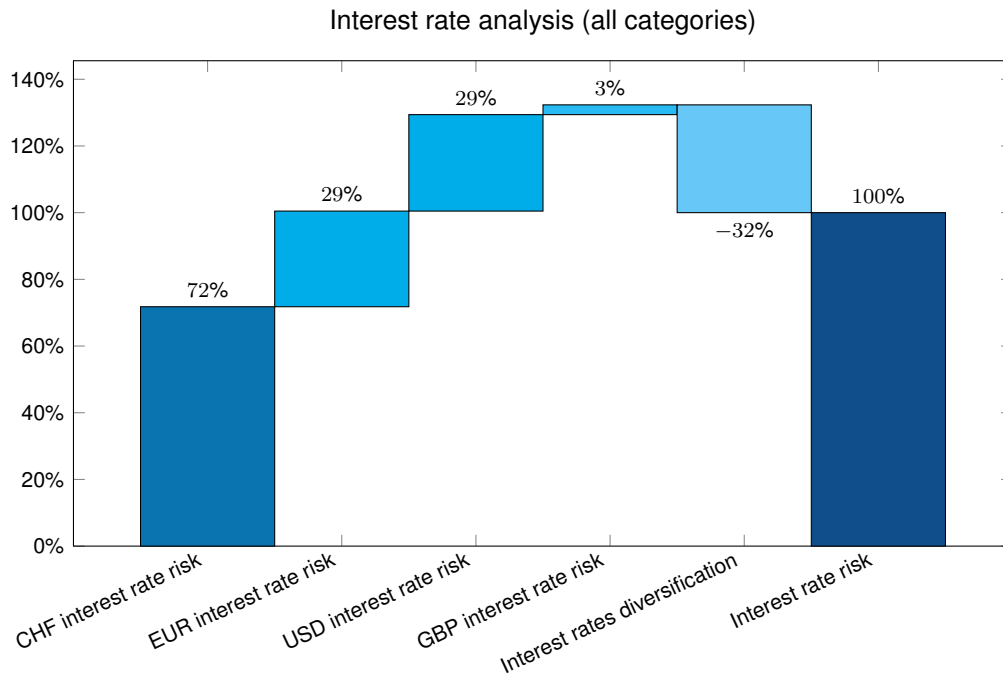


Figure 14a: General insurance (mean values by sector)

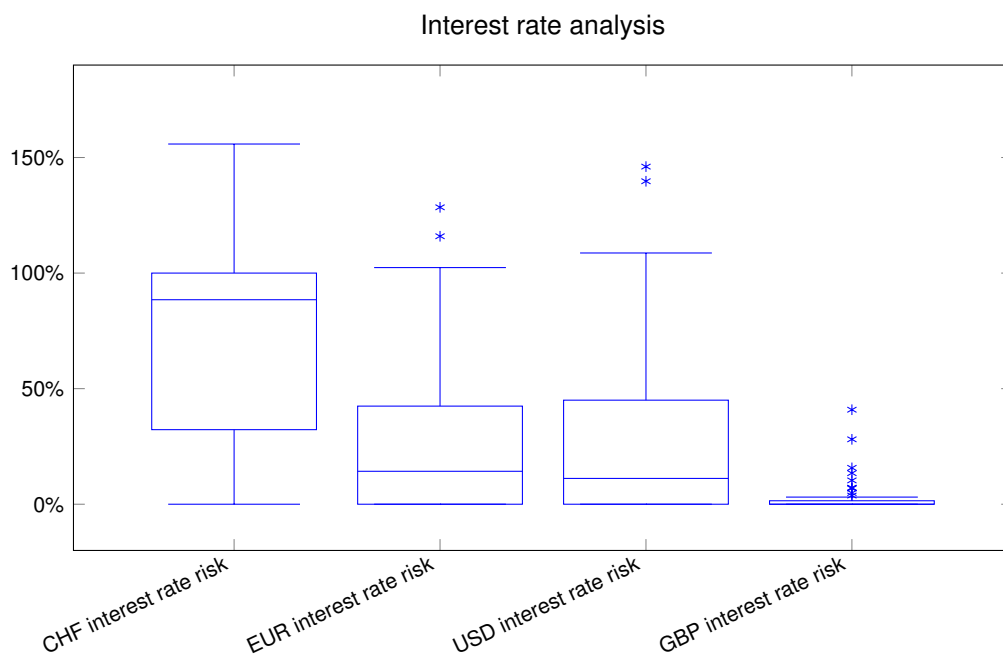


Figure 14b: General insurance (distribution as box-plot)

5.8 General insurance risk analysis

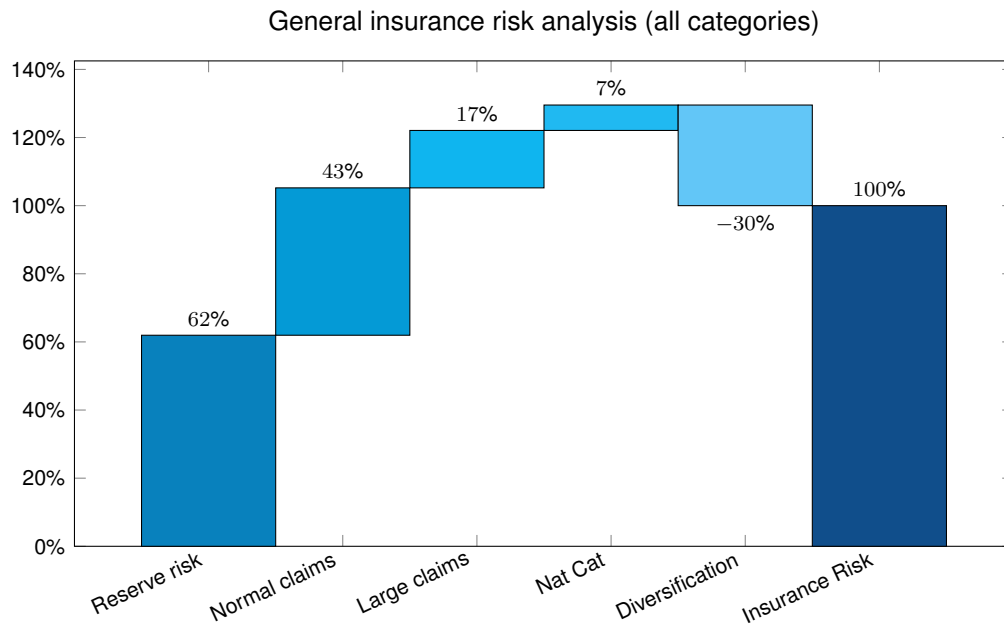


Figure 15a: General insurance (mean values by sector)

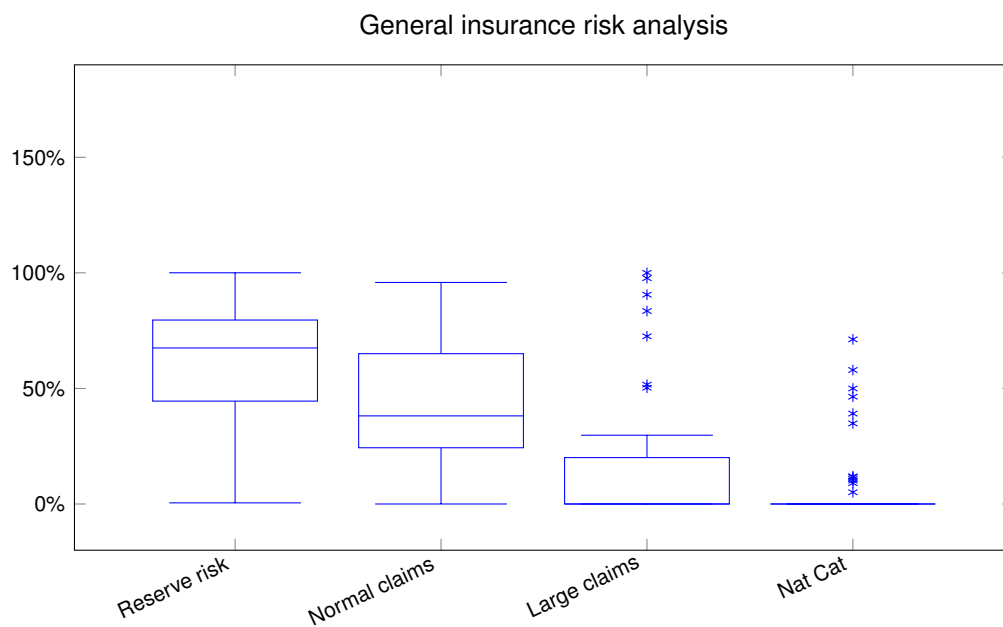


Figure 15b: General insurance (distribution as box-plot)

5.9 Market and credit risk scenarios

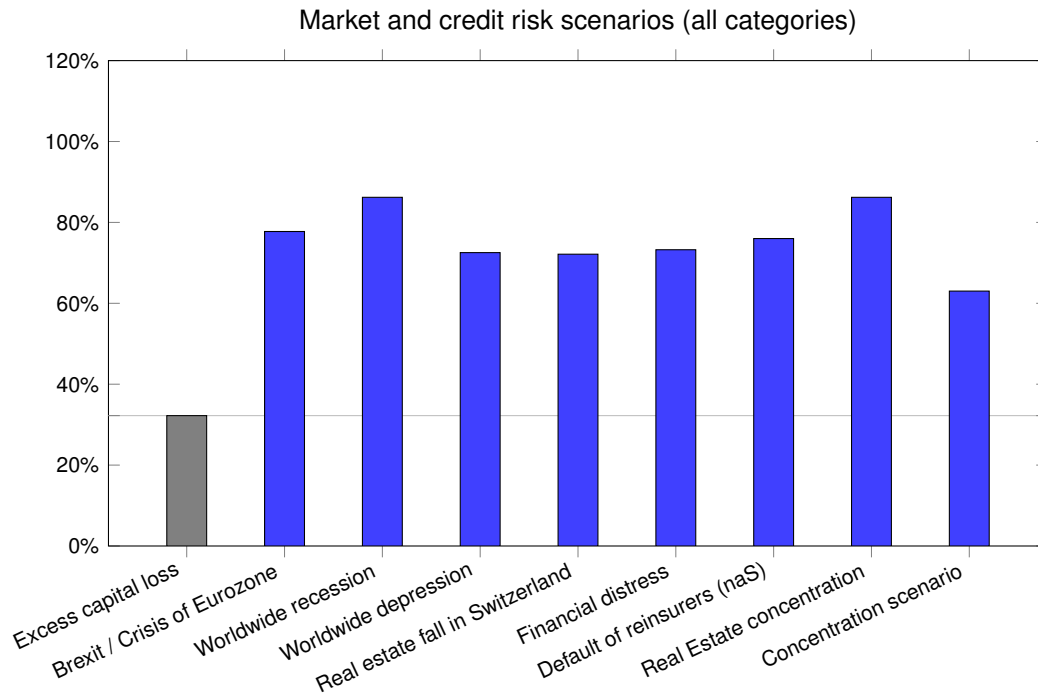


Figure 16a: General insurance (mean values by sector)

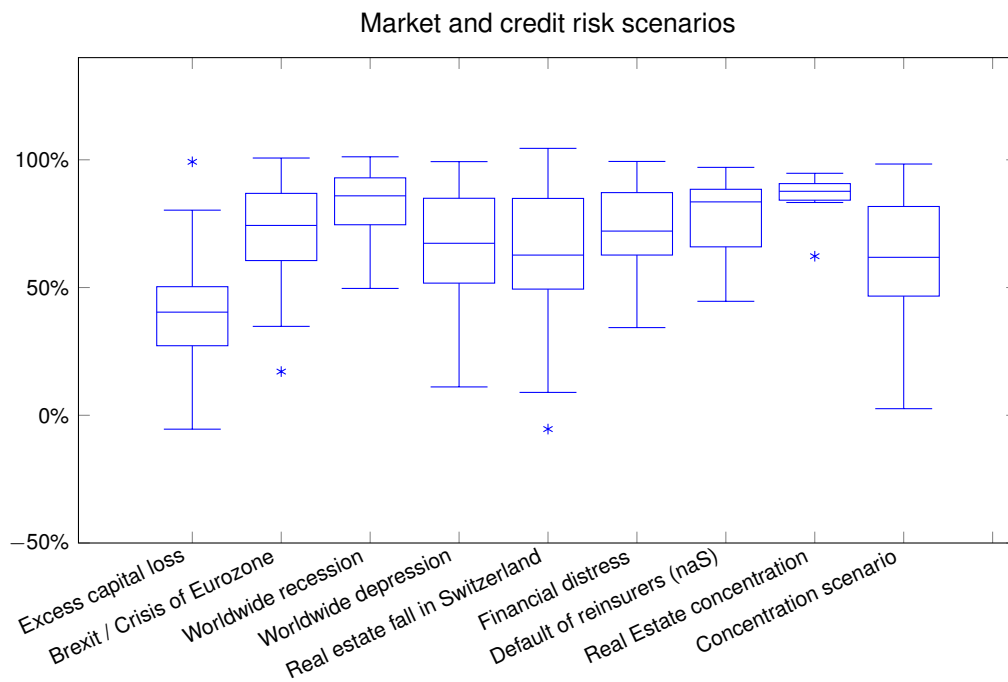


Figure 16b: General insurance (distribution as box-plot)

5.10 Insurance risk and global scenarios

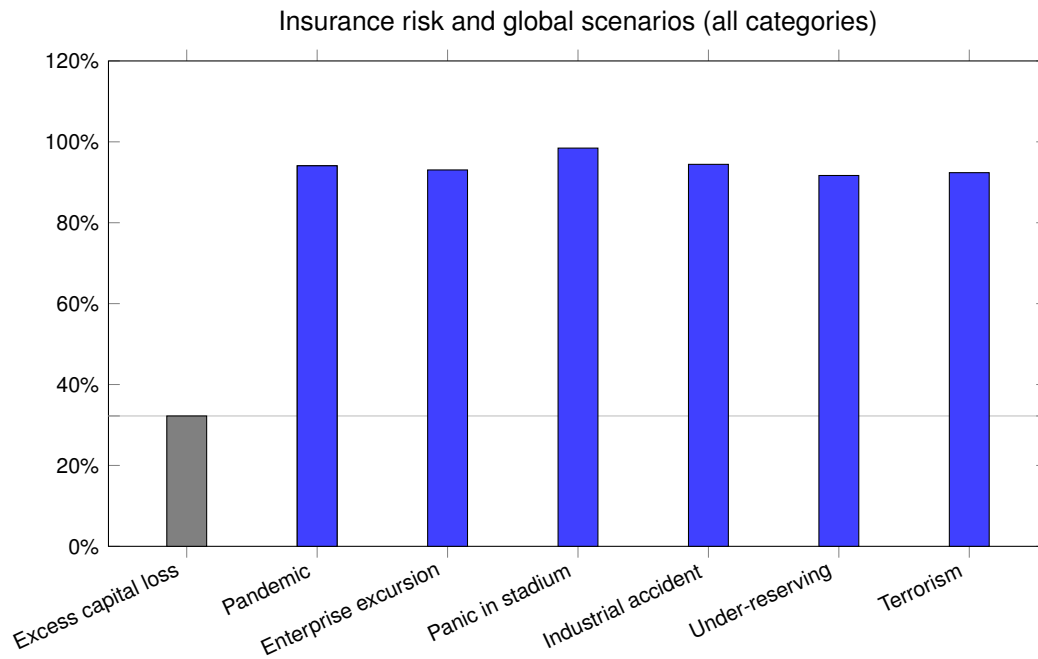


Figure 17a: General insurance (mean values by sector)

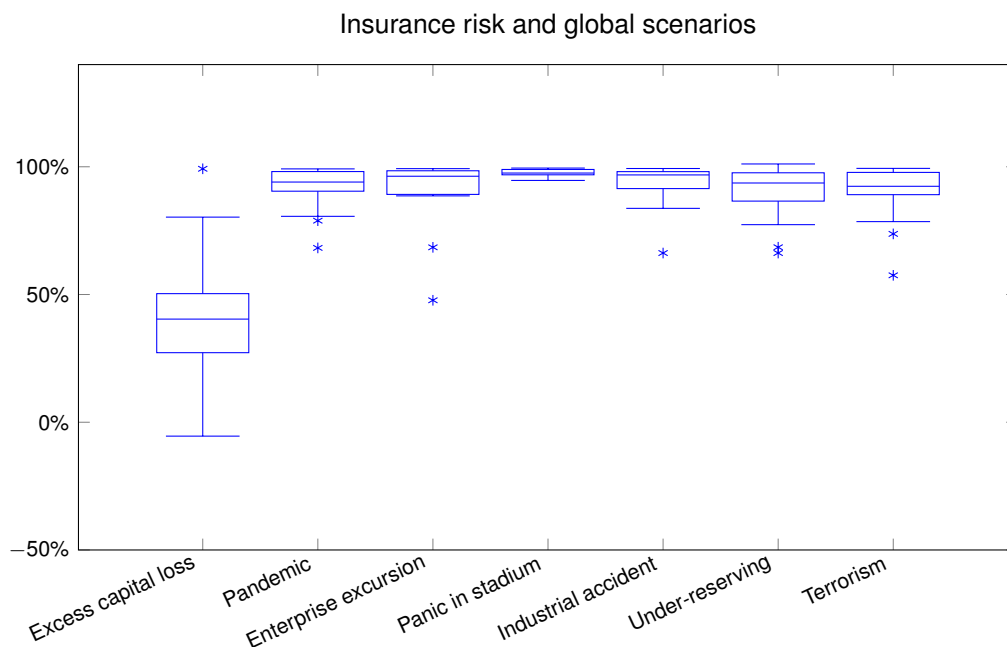


Figure 17b: General insurance (distribution as box-plot)

6 Health

The overall SST ratio calculated over all health insurers increased by 16 percentage points from 250% in 2017 to 266% in 2018. The risk bearing capital increased by 10.5% to CHF 10,687 million, while target capital went up by 4.4% to CHF 4,178 million. The comparison is based on aggregate numbers obtained by summing over all health insurers (19 in total).

With regard to the individual analysis, in order to avoid that companies with larger volume dominate the results, an average over the percentages for each company is shown.

6.1 Comments on results

The asset portfolios of health insurers are mainly concentrated in bond investments (48%) followed by share investments (18%), as illustrated in Figure 18a “Assets”. A further breakdown⁴ of the investment categories bonds and shares is shown in Table 7.

Health	FDS component	
Bonds	Investment funds: bonds	18.6%
	Fixed income securities, loans	81.4%
Shares	Investment funds: equities	57.6%
	Equities	42.4%

Table 7: Breakdown of investment categories *bonds* and *shares* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

As shown in Figure 19a “Liabilities”, the liabilities of health insurers are dominated by the loss reserves (38%) followed by the other liabilities (37%). In Table 8, a breakdown of loss reserves and other liabilities into their components is shown.

In Figure 21a “Target capital decomposition” it is shown that the one-year capital and market value margin correspond to 97% and 3% of the target capital, respectively. The one-year capital is driven (before diversification) by the market risk (66%) followed by the insurance risk (37%) and the capital add-on (health) (25%). “Capital add-on (health)” denotes the impact of the factor 1.5 that replaced since SST 2017 the effect of the scenarios (for companies writing exclusively health business).

The main drivers of the market risk (before diversification) are the equity risk (59%) followed by the spread risk (36%) and the interest rate risk (32%). As shown in Figure 23a, interest rate risk is dominated by the CHF interest rate risk (77% before diversification).

It should be noted that positions that are non-empty for less than five companies (e.g., “Private equity risk” under “Market risk analysis”) are excluded from the box-plot analysis. This is the reason why the waterfall chart and the box-plot might not always show the same positions.

⁴A further decomposition is shown only for the dominating categories that have at least two different components.

Health	FDS component	
Loss reserves	Best estimate of insurance liabilities (non-life): gross	24.7%
	Best estimate of insurance liabilities (health): gross	75.3%
Other liabilities	Reserves for surplus funds	0.2%
	Liabilities from derivative financial instruments	3.2%
	Non-technical provisions	6.5%
	Liabilities from insurance business	62.2%
	Other liabilities	23.8%
	Subordinated liabilities	4.1%

Table 8: Breakdown of *loss reserves* and *other liabilities* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

6.2 Assets

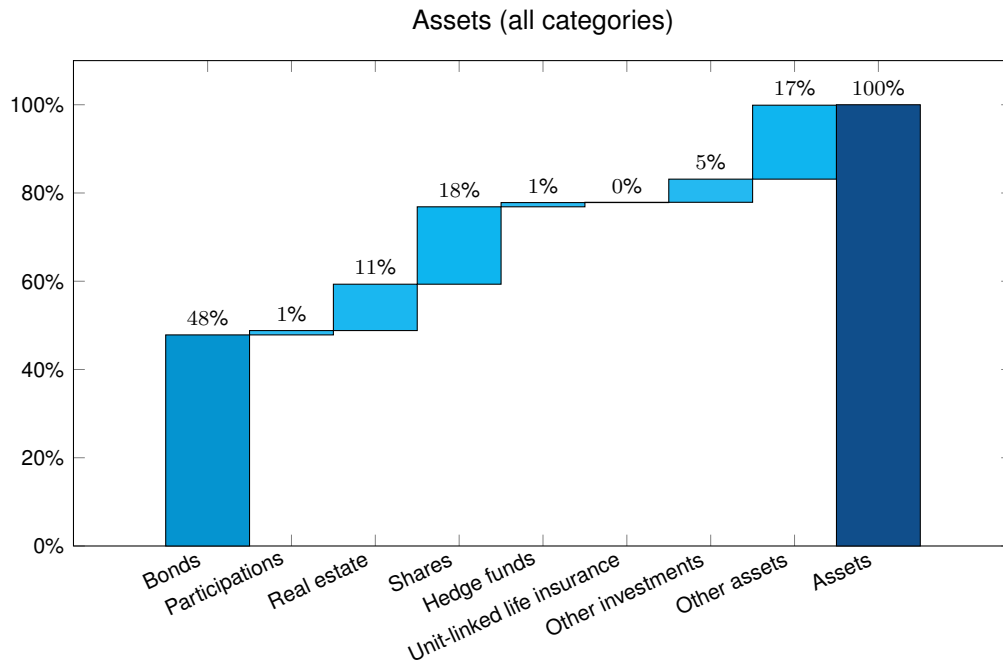


Figure 18a: Health (mean values by sector)

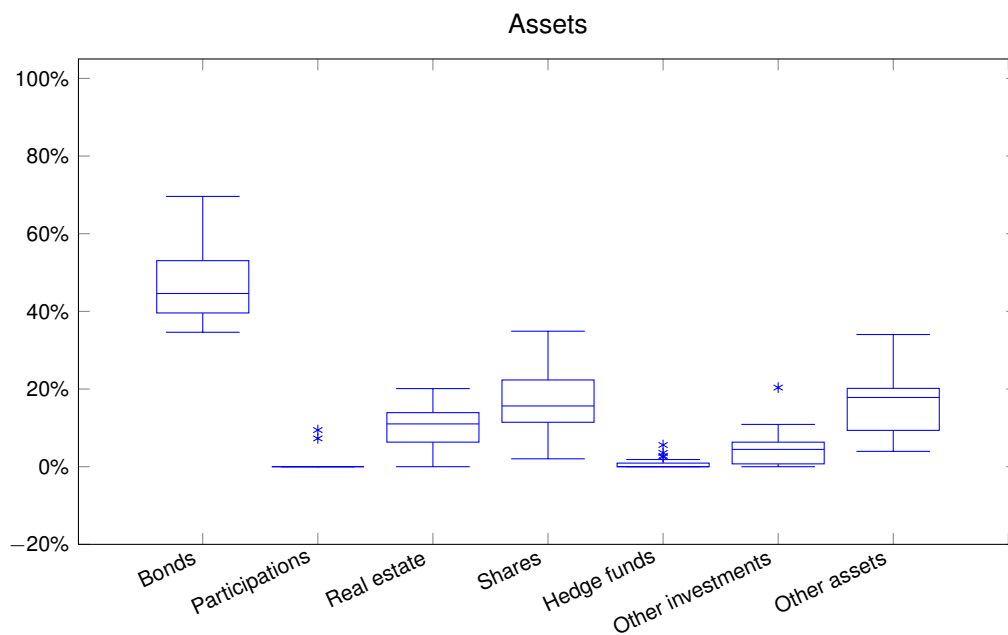


Figure 18b: Health (distribution as box-plot)

6.3 Liabilities

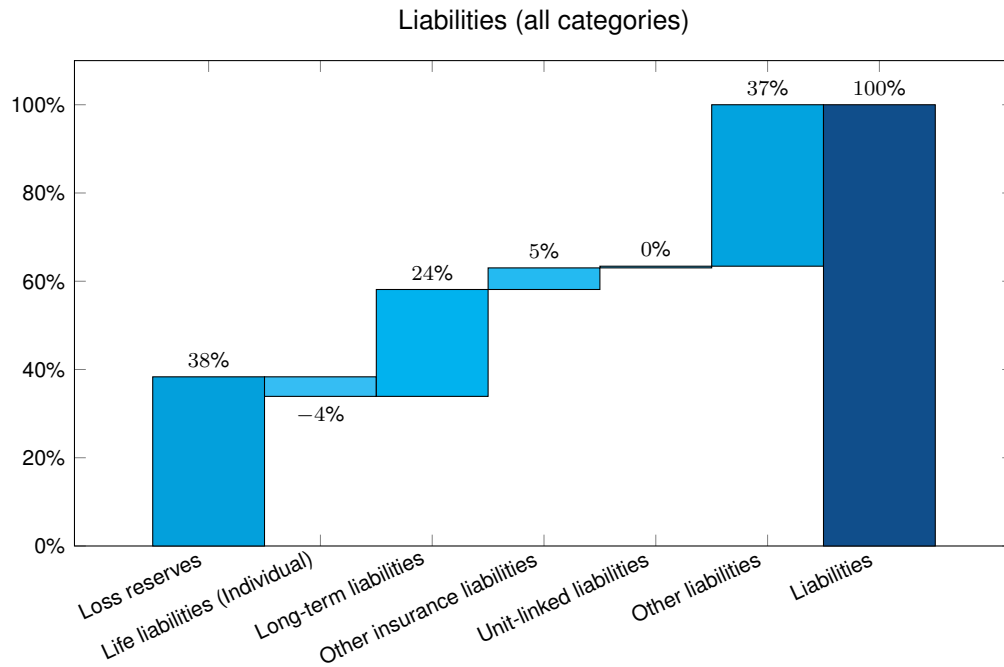


Figure 19a: Health (mean values by sector)

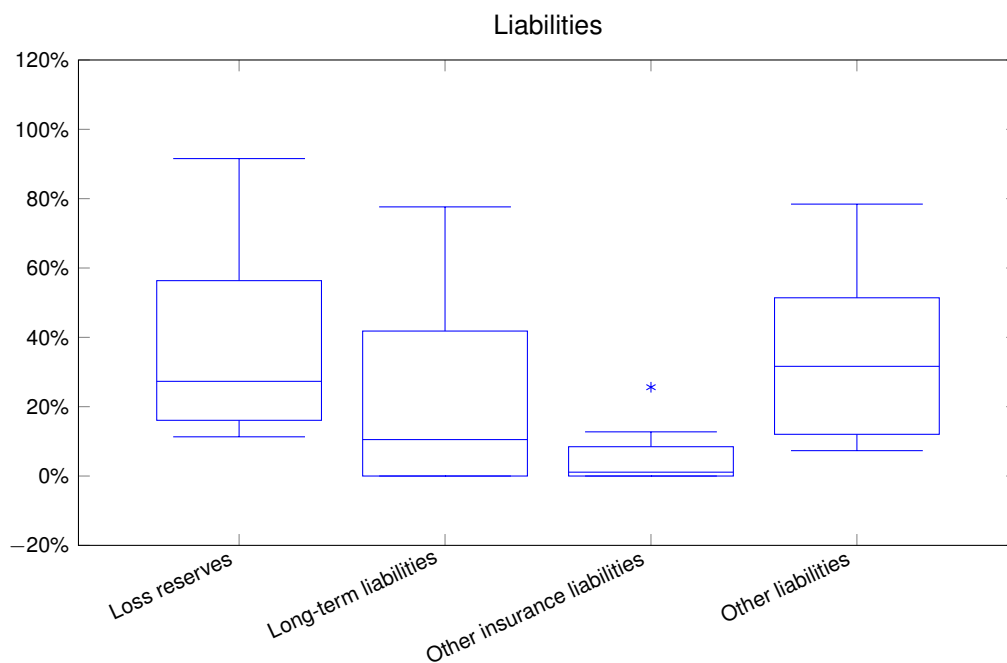


Figure 19b: Health (distribution as box-plot)

6.4 Best estimate of liability and target capital in relation to the balance sheet total

Best estimate of liability and target capital in relation to the balance sheet total (all categories)

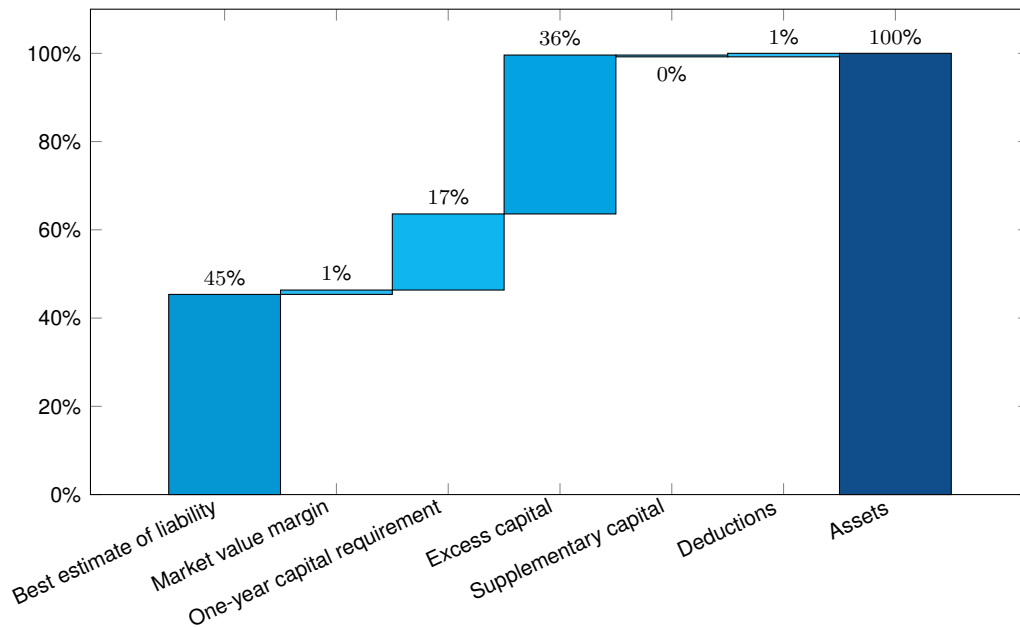


Figure 20a: Health (mean values by sector)

Best estimate of liability and target capital in relation to the balance sheet total

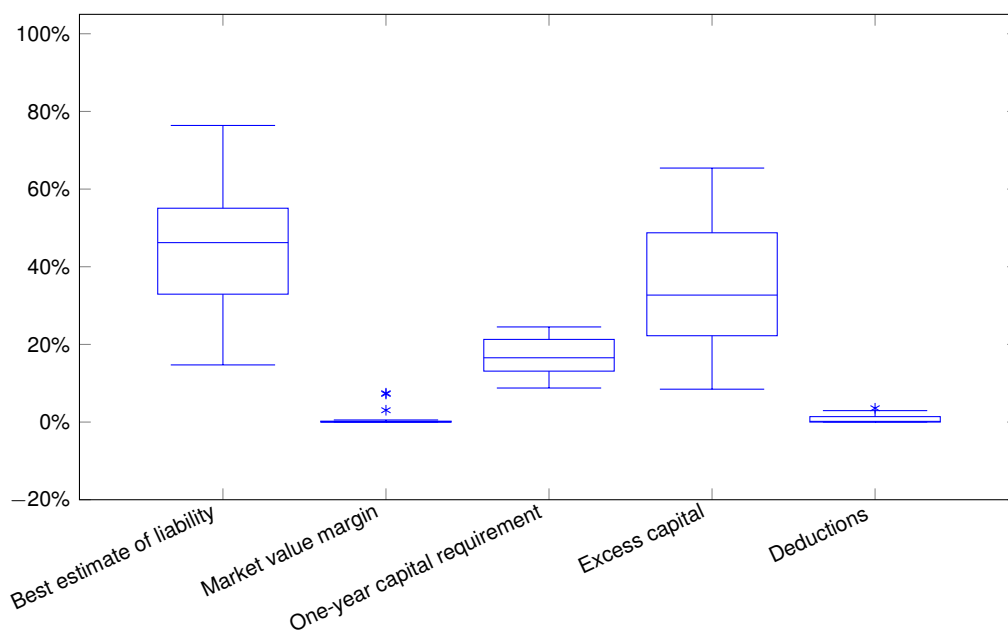


Figure 20b: Health (distribution as box-plot)

6.5 Target capital decomposition

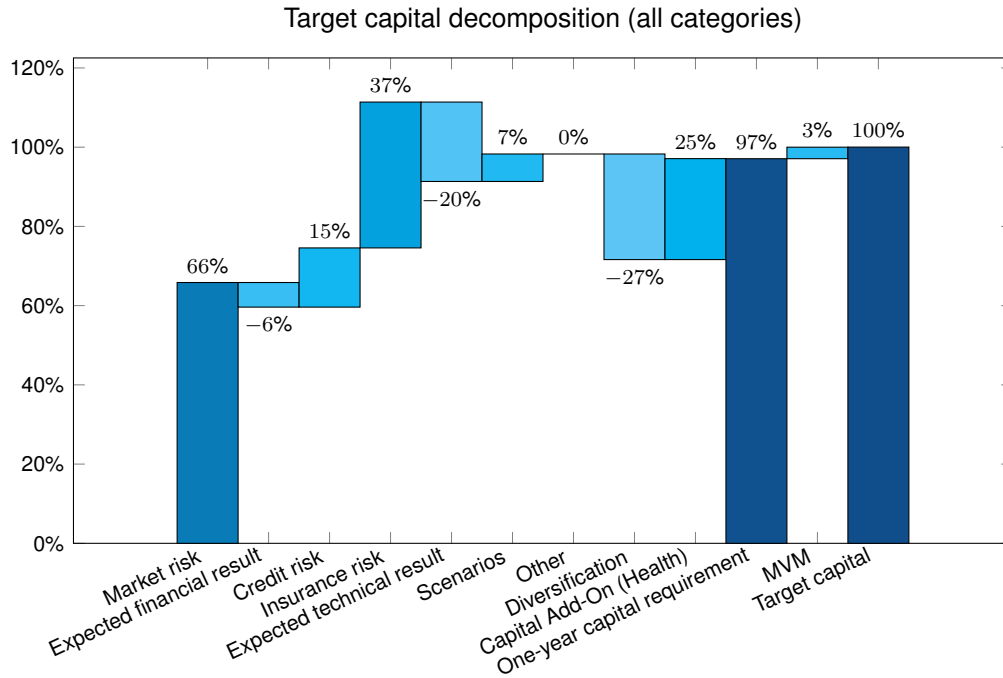


Figure 21a: Health (mean values by sector)

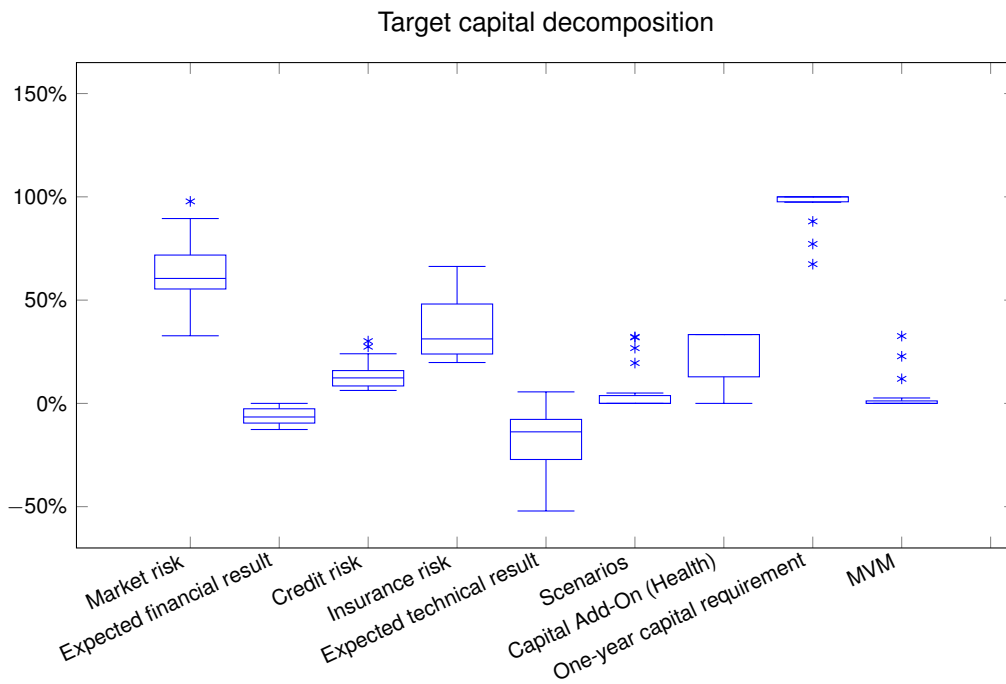


Figure 21b: Health (distribution as box-plot)

6.6 Market risk analysis

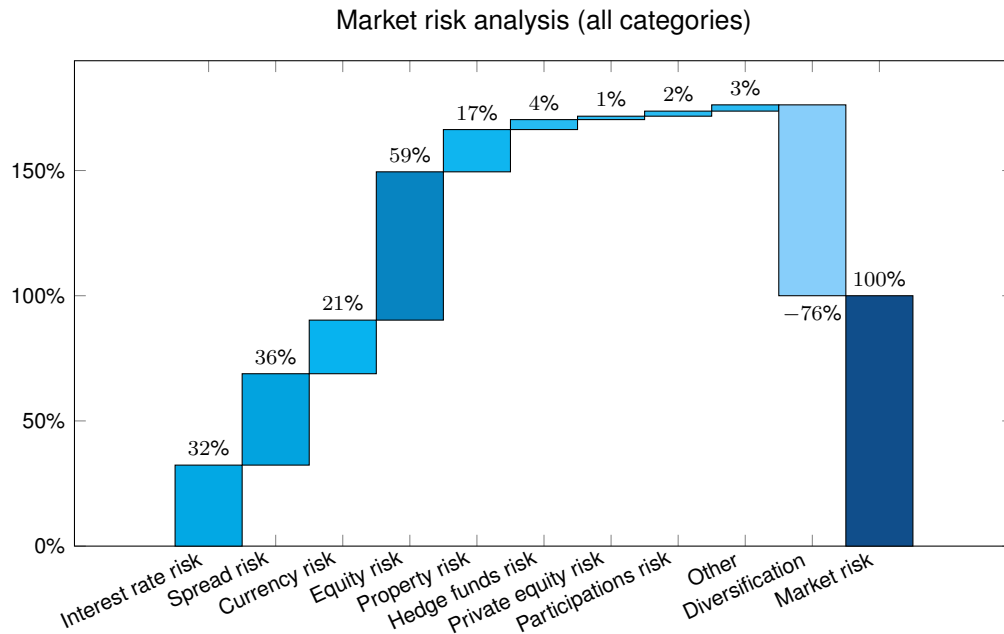


Figure 22a: Health (mean values by sector)

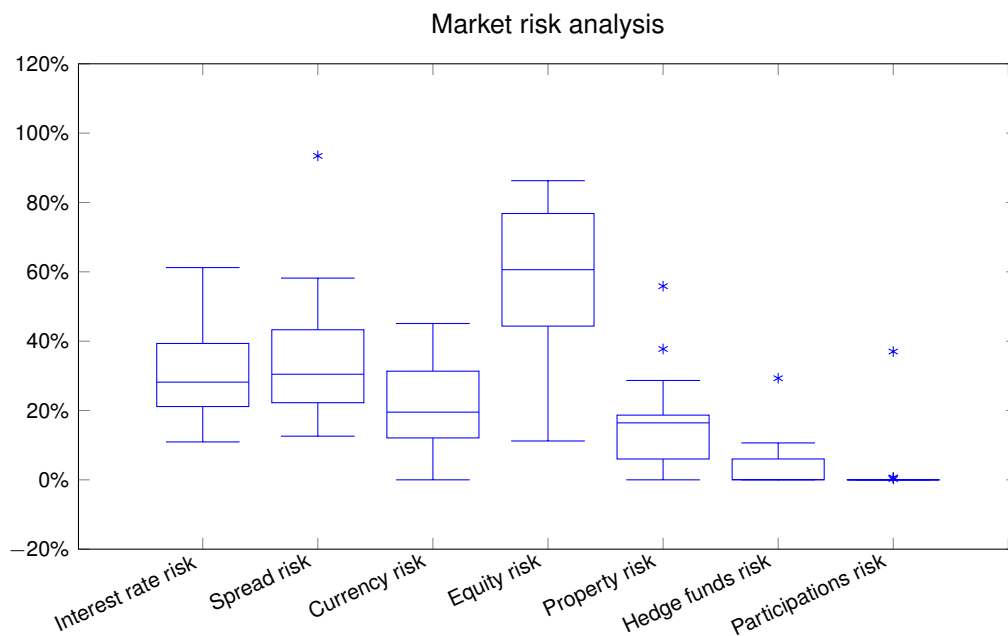


Figure 22b: Health (distribution as box-plot)

6.7 Interest rate analysis

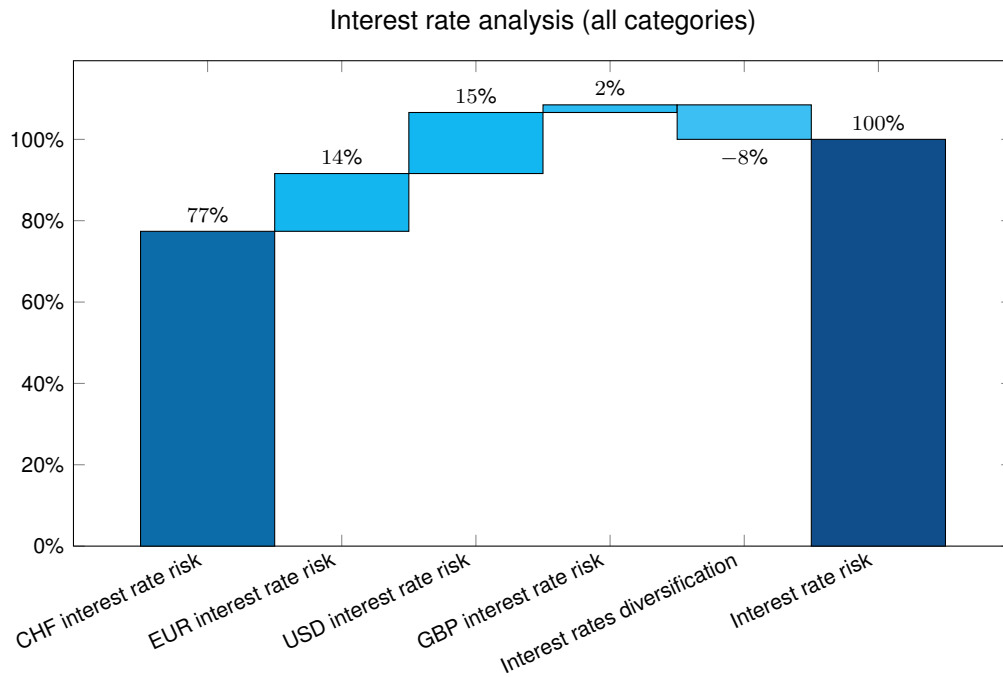


Figure 23a: Health (mean values by sector)

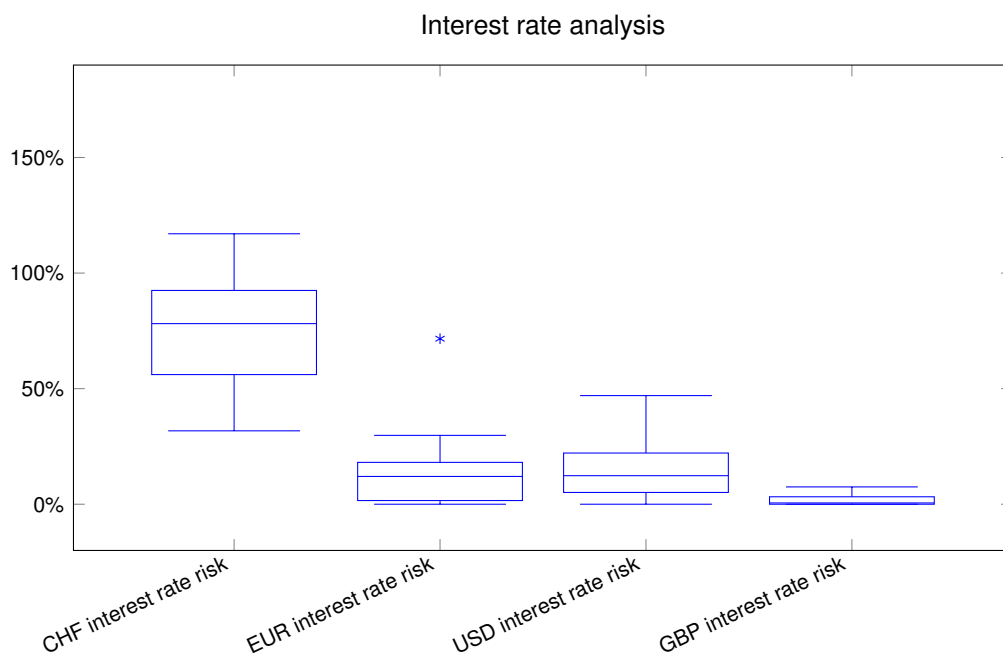


Figure 23b: Health (distribution as box-plot)

6.8 Market and credit risk scenarios

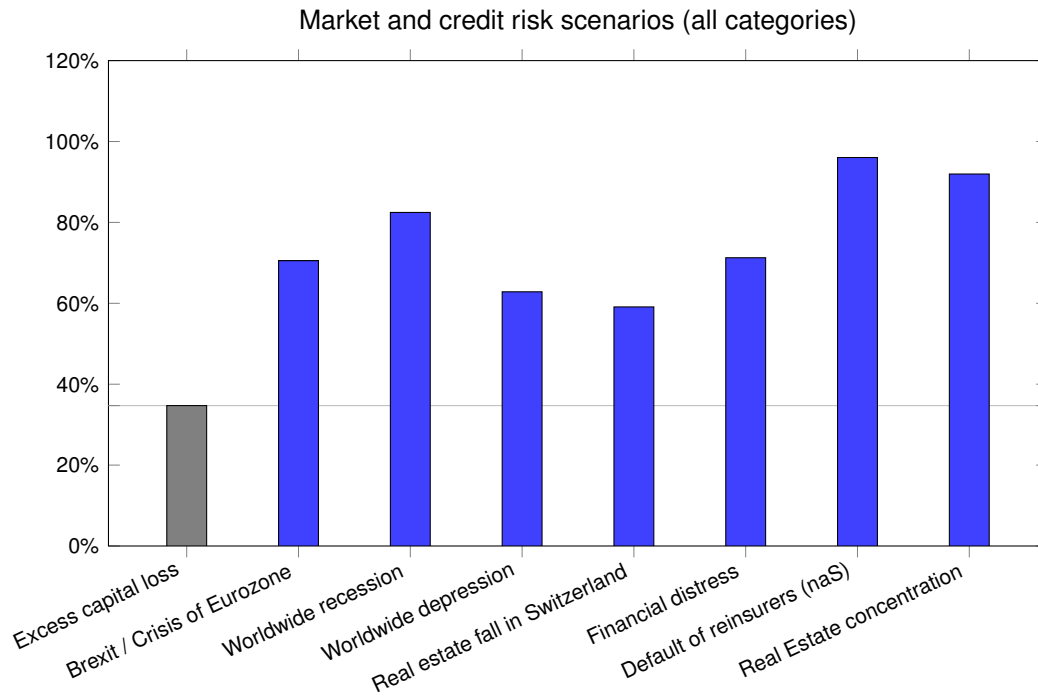


Figure 24a: Health (mean values by sector)

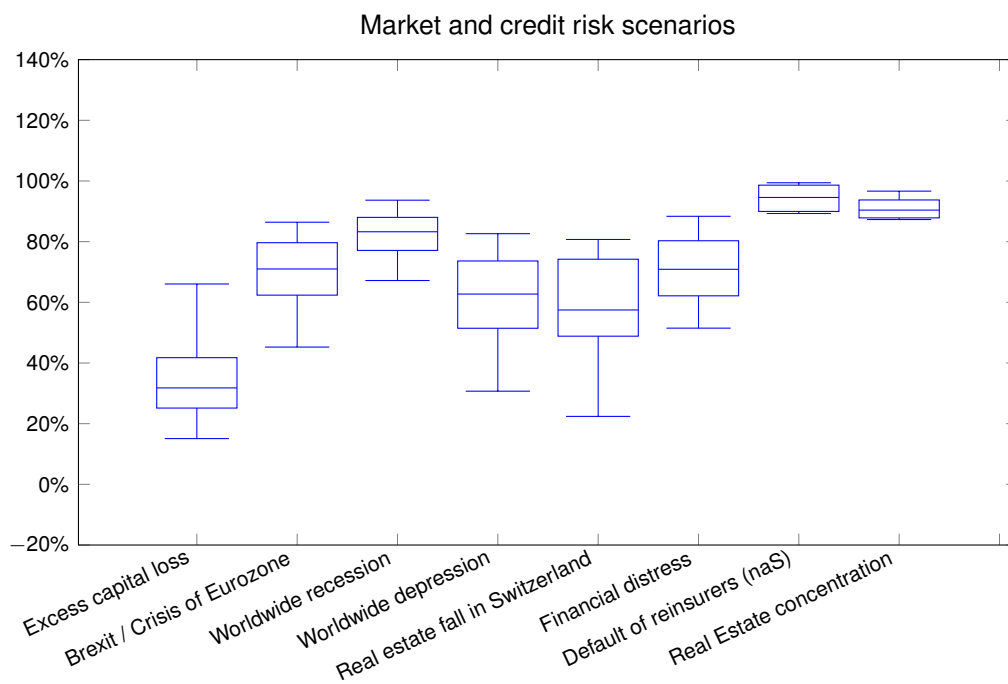


Figure 24b: Health (distribution as box-plot)

6.9 Insurance risk and global scenarios

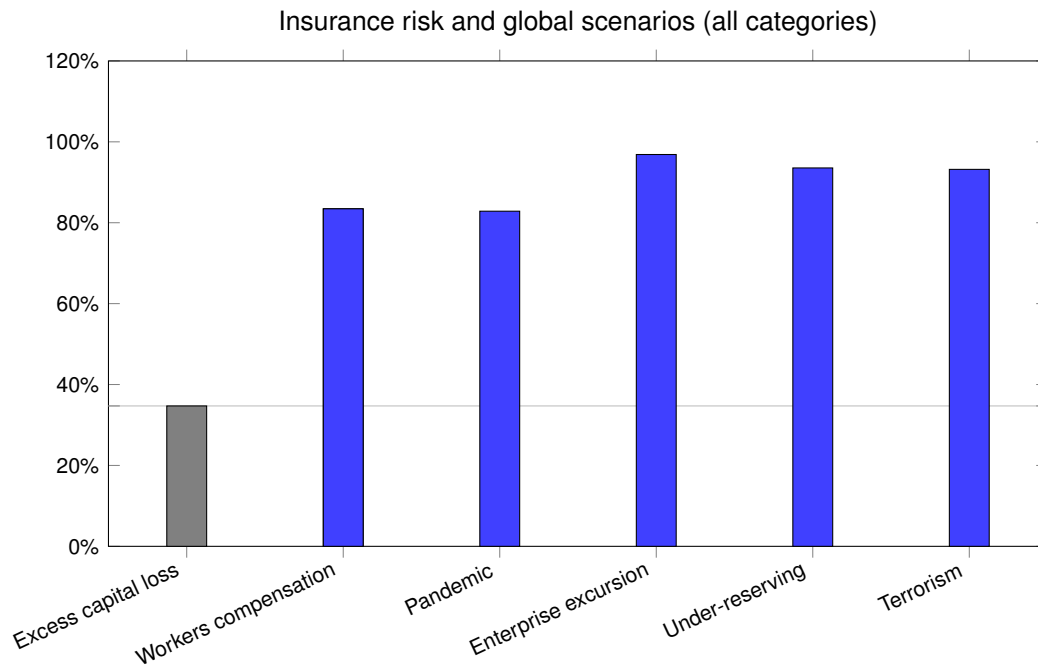


Figure 25a: Health (mean values by sector)

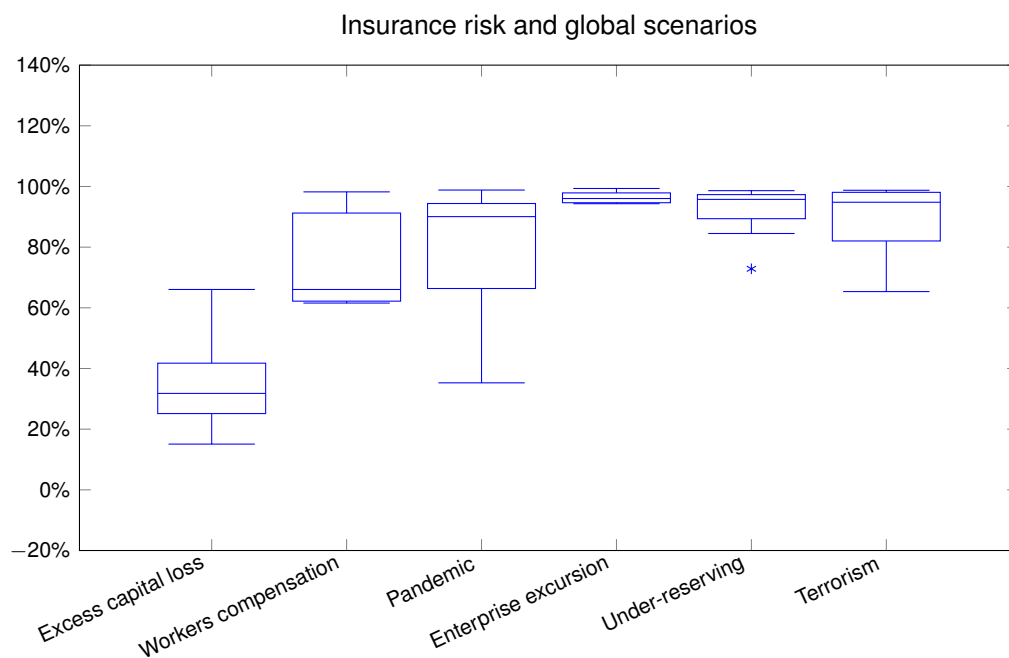


Figure 25b: Health (distribution as box-plot)

7 Reinsurance

The overall SST ratio is 220%. The risk bearing capital decreased by 9.5% to CHF 51,504 million. The target capital decreased by 9.3% to CHF 25,863 million. This effect was primarily due to a market exit. The comparison is based on aggregate numbers obtained by summing over all reinsurers (26 in total).

With regard to the individual analysis, in order to avoid that companies with larger volume dominate the results, an average over the percentages for each company is shown. As of SST 2018, a standard model for reinsurers (StandRe) has been made available for the calculation of insurance risk (excluding life and natural catastrophes). A total of 16 reinsurers have used StandRe to estimate their insurance risk.

7.1 Comments on results

The asset portfolios of reinsurers are mainly concentrated in bond investments (43%) followed by other assets (28%). A further breakdown⁵ of the investment category bonds is shown in Table 9.

General Insurance	FDS component	
Bonds	Investment funds: bonds	24.2%
	Fixed income securities, loans	75.8%

Table 9: Breakdown of investment category *bonds* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

As shown in Figure 27a “Liabilities”, the liabilities of reinsurers are dominated by the loss reserves (65%) and the other liabilities (24%). In Table 10, a breakdown of loss reserves and other liabilities into their components is shown.

In Figure 29a “Target capital decomposition” it is shown that the one-year capital and market value margin correspond to 88% and 12% of the target capital, respectively. The one-year capital is driven (before diversification) by insurance risk (72%) followed by the market risk (35%).

The main drivers of the market risk (before diversification) are the spread risk (55%) followed by the interest rate risk (41%) and the currency risk (33%). As shown in Figure 31a, interest rate risk is dominated (before diversification) by the USD interest rate risk (53%) followed by EUR interest rate risk (44%).

It should be noted that positions that are non-empty for less than five companies (e.g., “Group life liabilities” under “Liabilities”) are excluded from the box-plot analysis. This is the reason why the waterfall chart and the box-plot might not always show the same positions.

⁵A further decomposition is shown only for the dominating categories that have at least two different components.

General Insurance		FDS component
Loss reserves	Best estimate of insurance liabilities (non-life): gross	64.9%
	Active reinsurance (indirect business)	35.1%
Other liabilities	Deposit liabilities from ceded reinsurance	9.9%
	Liabilities from derivative financial instruments	2.5%
	Non-technical provisions	2.7%
	Liabilities from insurance business	43.1%
	Other liabilities	27.8%
	Interest-bearing liabilities	6.6%
	Subordinated liabilities	7.4%

Table 10: Breakdown of *loss reserves* and *other liabilities* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

7.2 Assets

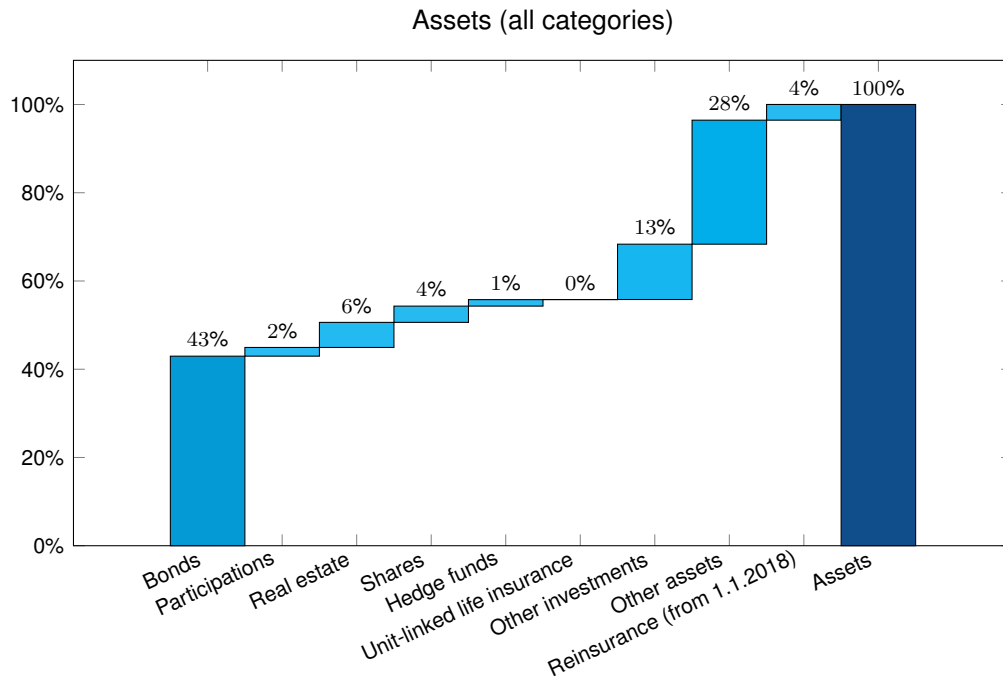


Figure 26a: Reinsurance (mean values by sector)

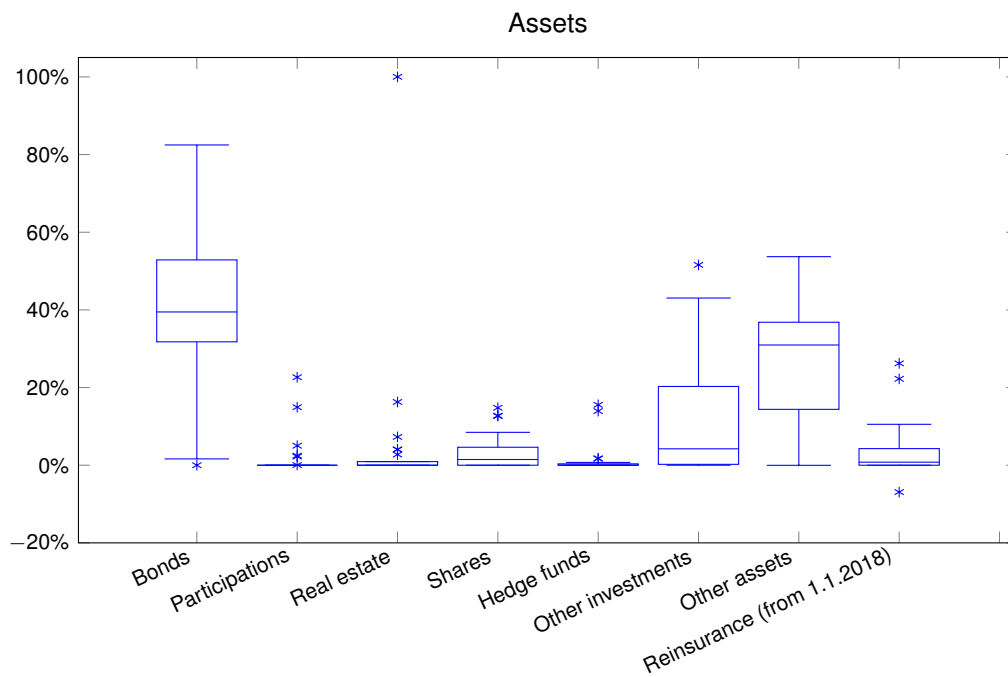


Figure 26b: Reinsurance (distribution as box-plot)

7.3 Liabilities

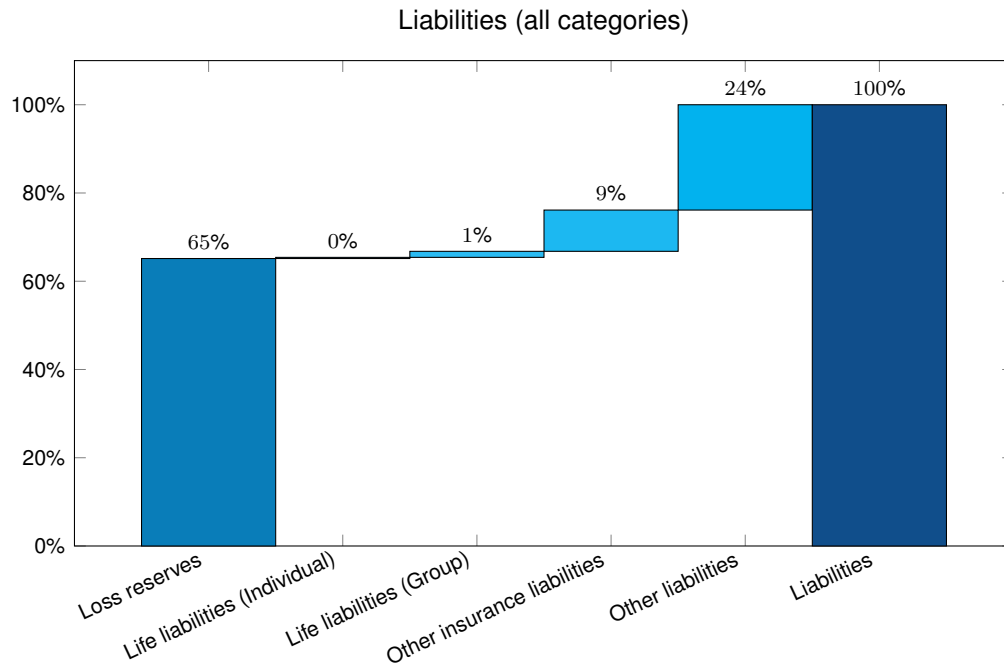


Figure 27a: Reinsurance (mean values by sector)

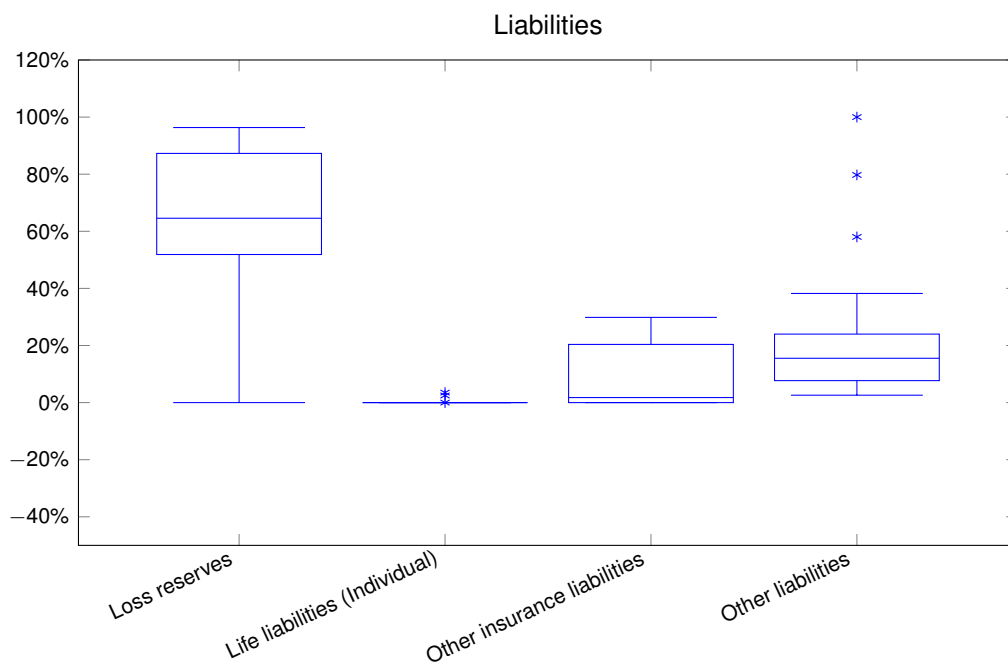


Figure 27b: Reinsurance (distribution as box-plot)

7.4 Best estimate of liability and target capital in relation to the balance sheet total

Best estimate of liability and target capital in relation to the balance sheet total (all categories)

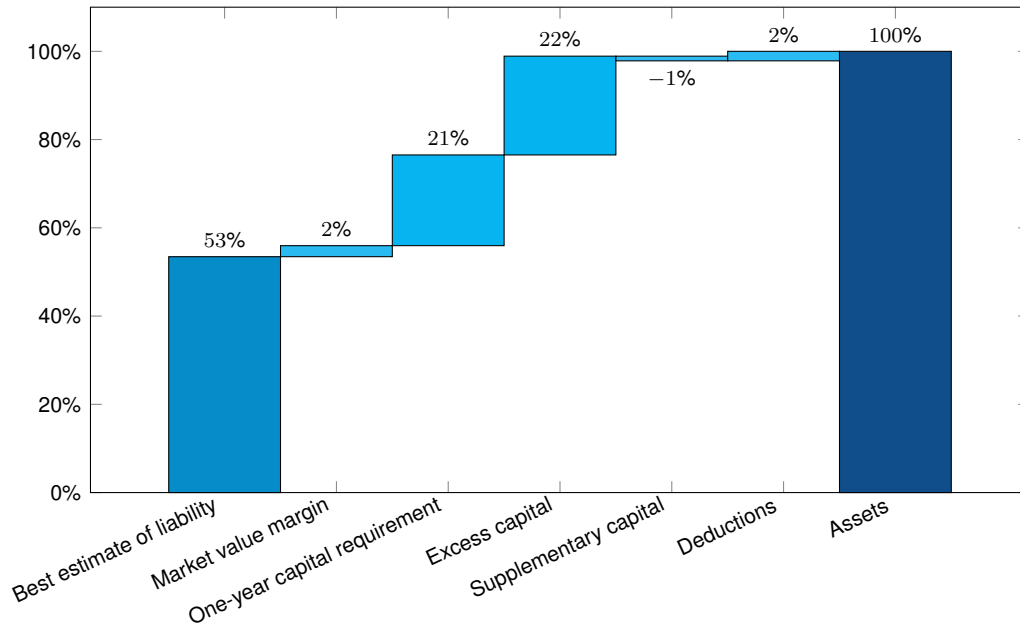


Figure 28a: Reinsurance (mean values by sector)

Best estimate of liability and target capital in relation to the balance sheet total

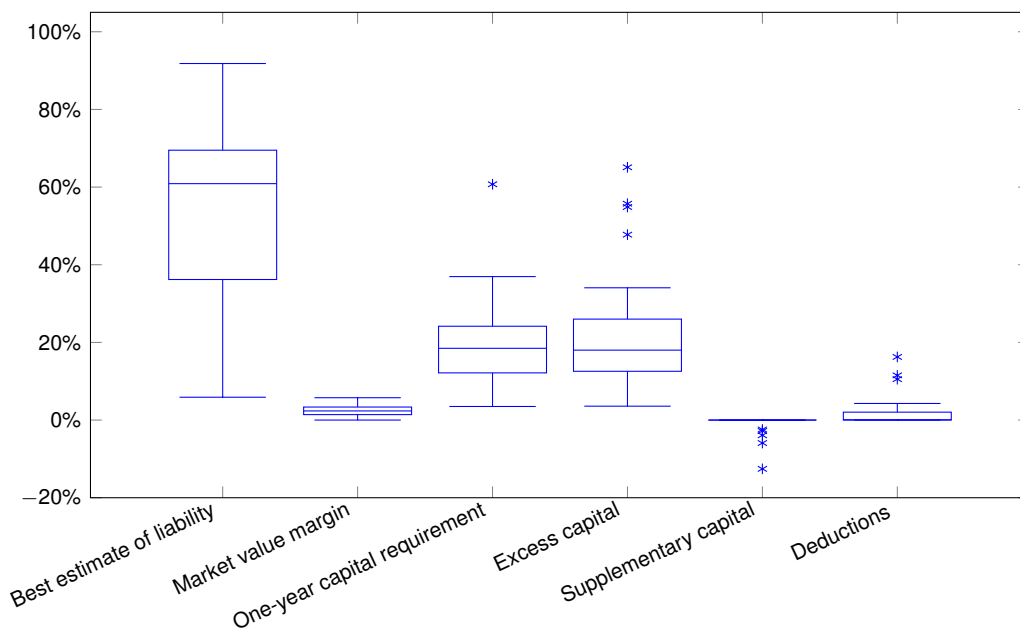


Figure 28b: Reinsurance (distribution as box-plot)

7.5 Target capital decomposition

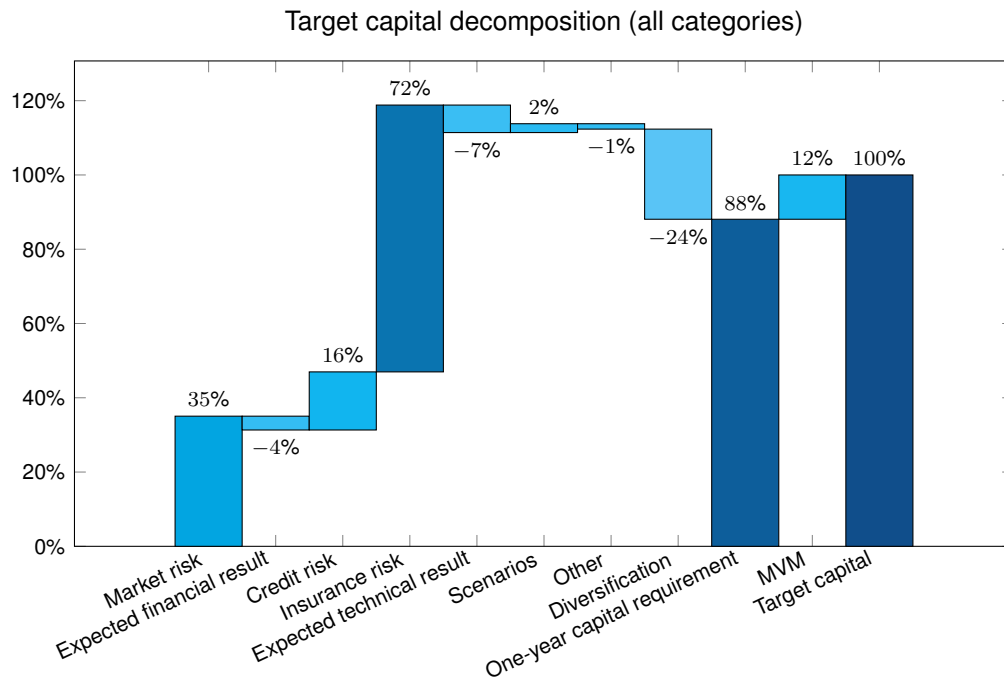


Figure 29a: Reinsurance (mean values by sector)

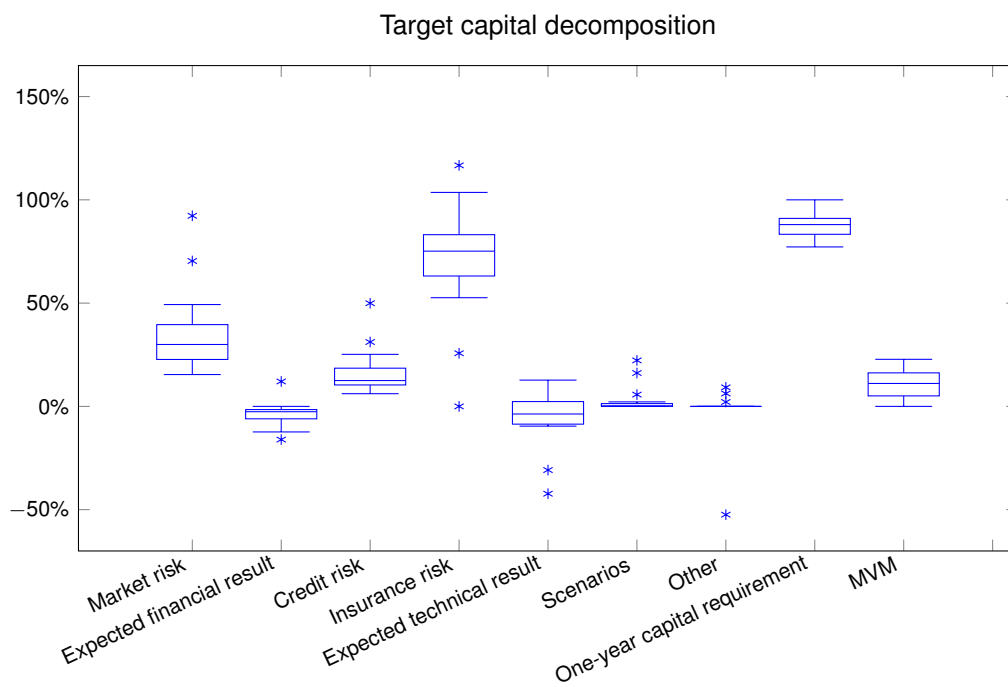


Figure 29b: Reinsurance (distribution as box-plot)

7.6 Market risk analysis

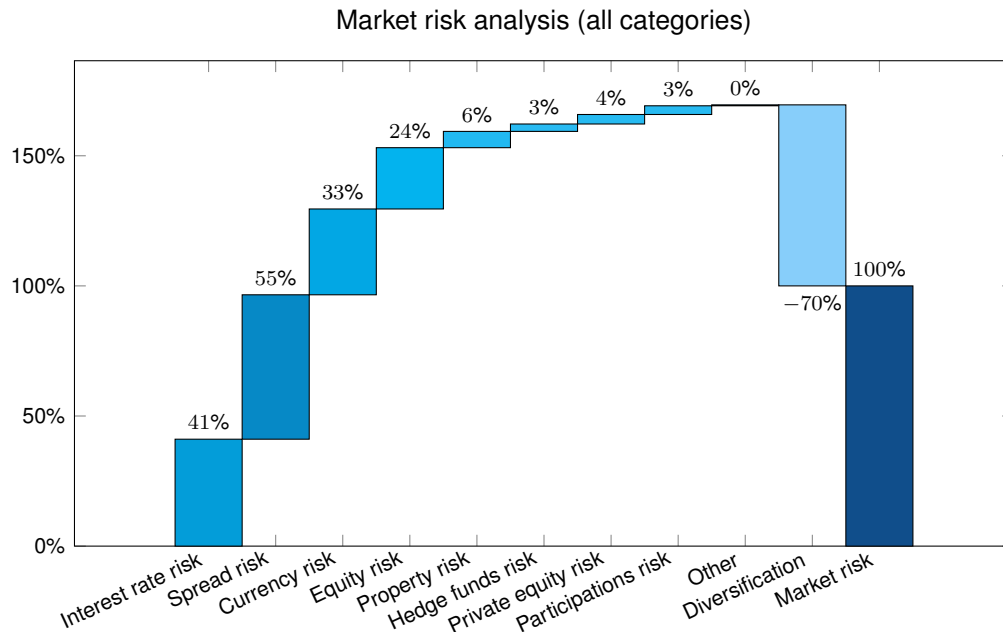


Figure 30a: Reinsurance (mean values by sector)

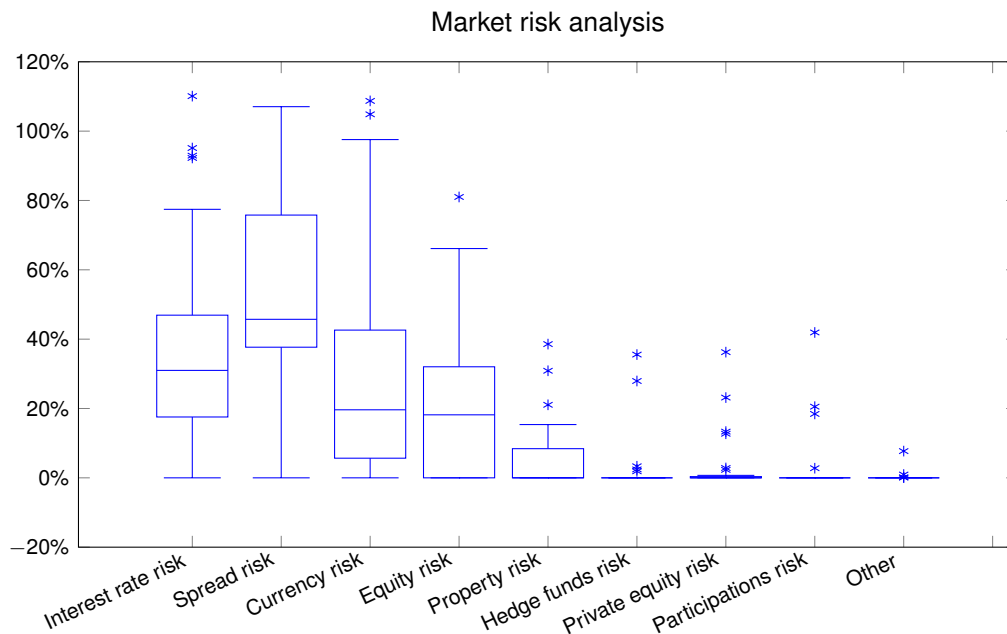


Figure 30b: Reinsurance (distribution as box-plot)

7.7 Interest rate analysis

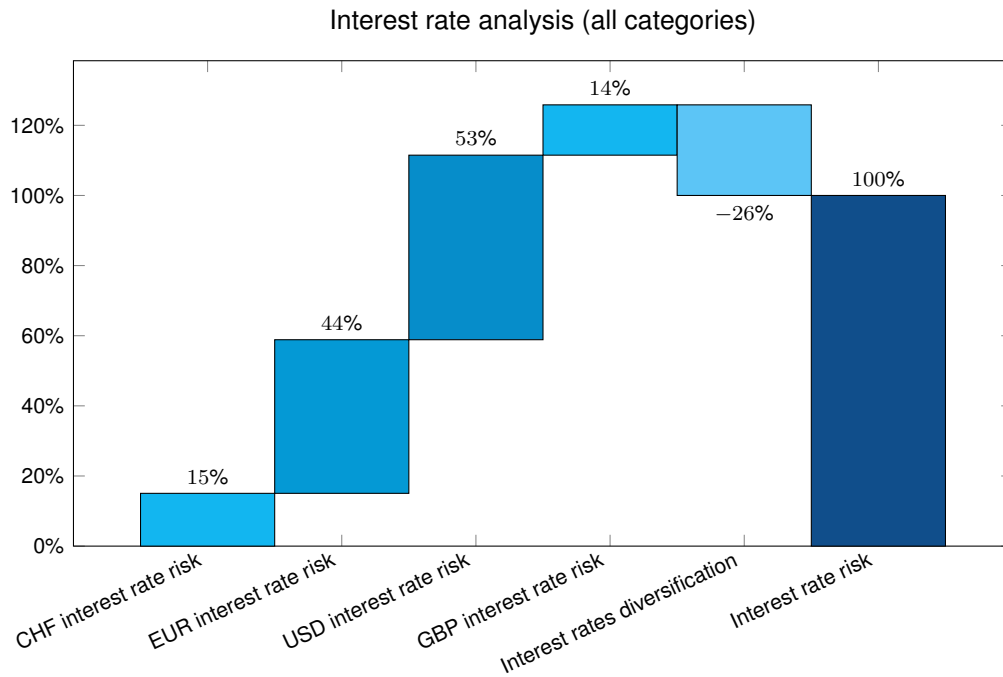


Figure 31a: Reinsurance (mean values by sector)

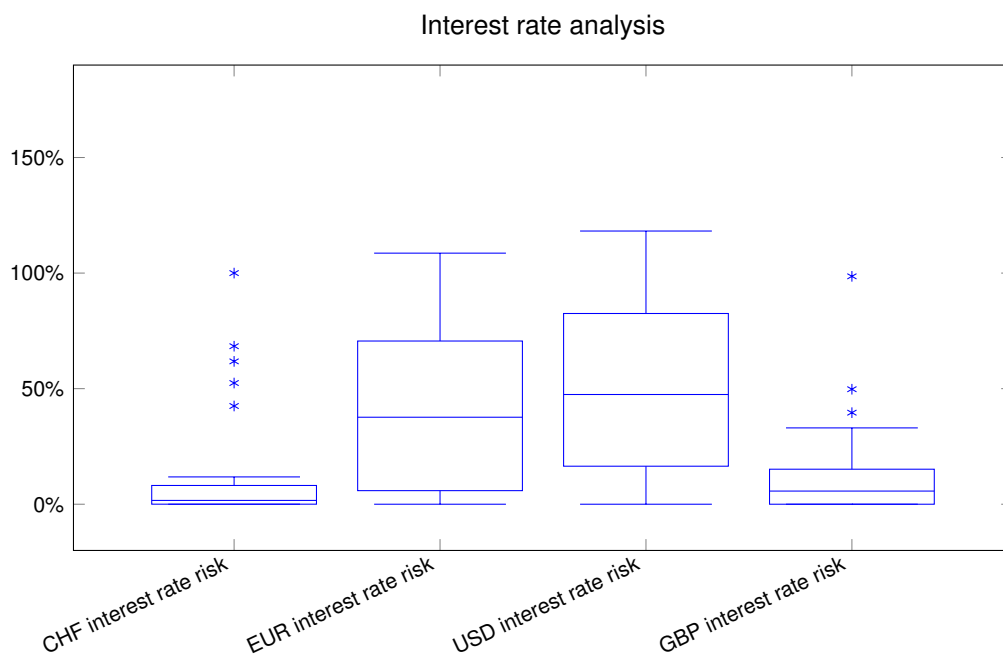


Figure 31b: Reinsurance (distribution as box-plot)

7.8 Market and credit risk scenarios

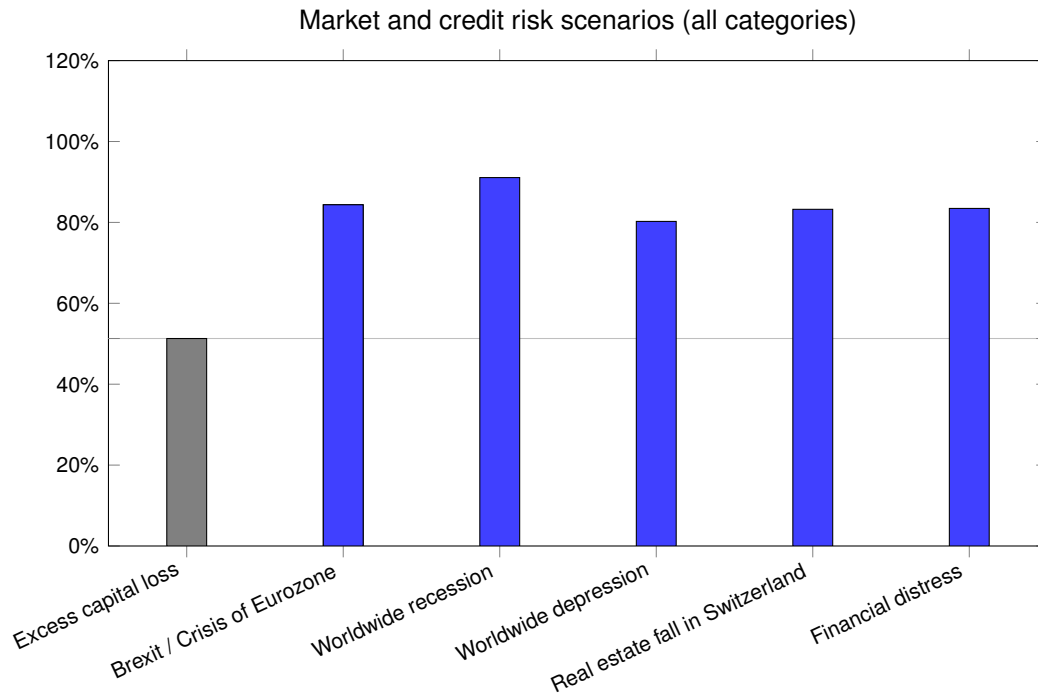


Figure 32a: Reinsurance (mean values by sector)

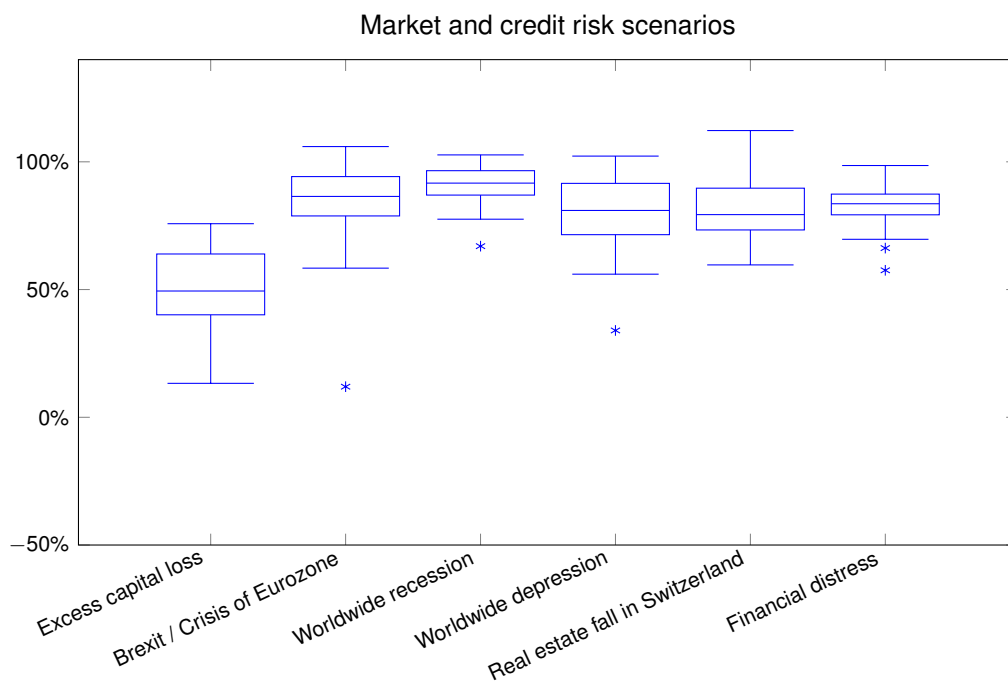


Figure 32b: Reinsurance (distribution as box-plot)

7.9 Insurance risk and global scenarios

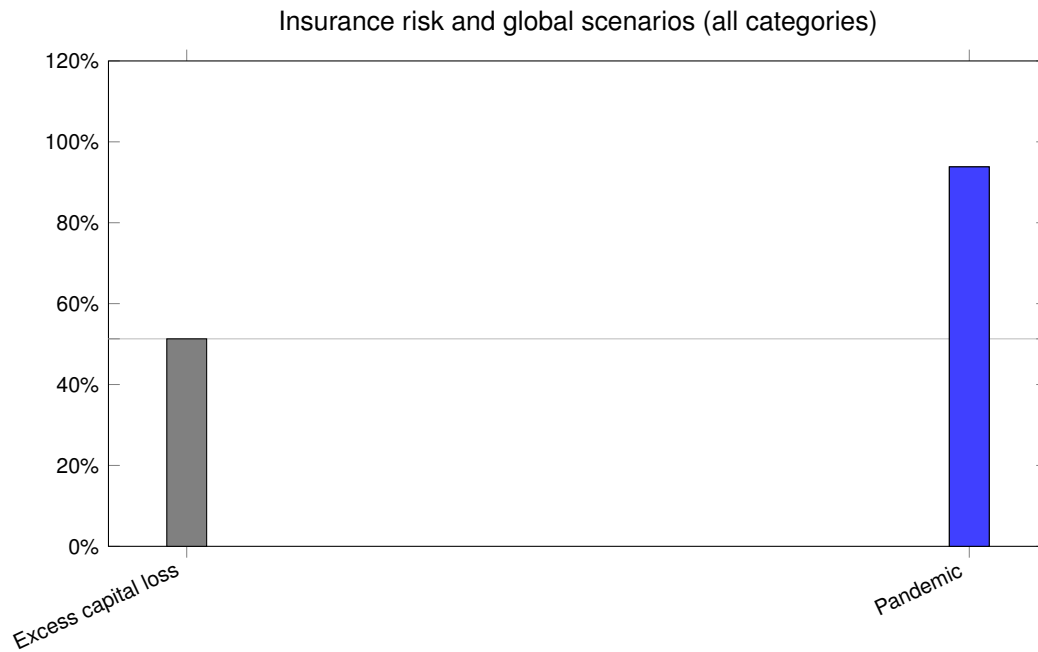


Figure 33a: Reinsurance (mean values by sector)

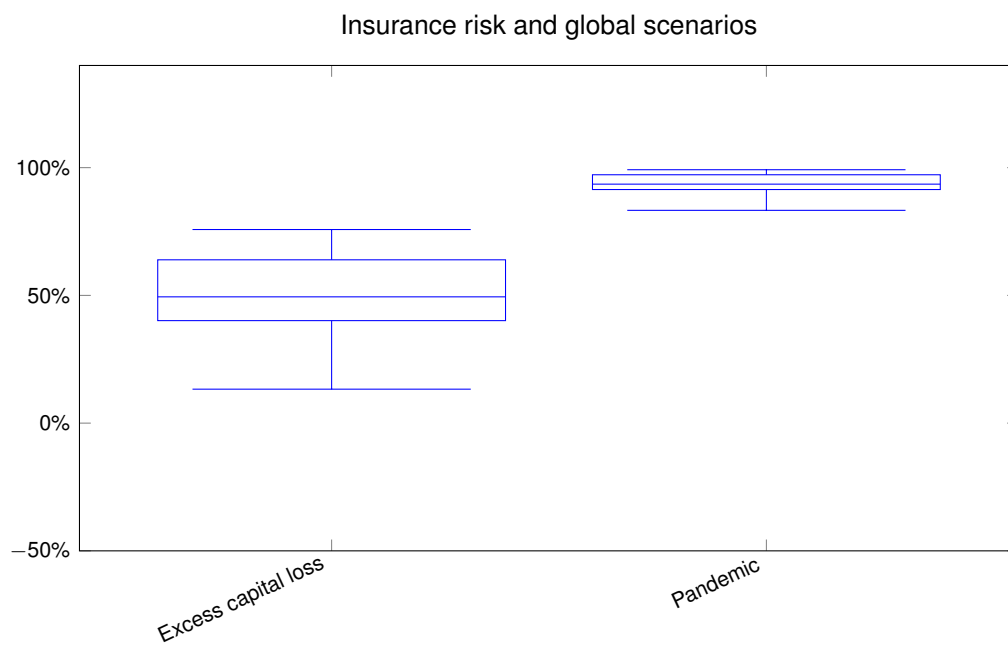


Figure 33b: Reinsurance (distribution as box-plot)

8 Re Captive

The overall SST ratio is 267%. The risk bearing capital increased by 7.1% to CHF 3,509 million. The target capital increased by 19.0% to CHF 1,365 million. This increase is mostly due to the fact that two captive insurers are now measuring their insurance risk using the standard model for reinsurers (StandRe). The comparison is based on aggregate numbers obtained by summing over all reinsurance captives (27 in total).

With regard to the individual analysis, in order to avoid that companies with larger volume dominate the results, an average over the percentages for each company is shown.

8.1 Comments on results

The asset portfolios of reinsurance captives are mainly concentrated in other assets (50%) (predominantly cash) followed by bond investments (23%). A further breakdown⁶ of the investment category bonds is shown in Table 11.

General Insurance	FDS component	
Bonds	Investment funds: bonds	36.5%
	Fixed income securities, loans	63.5%

Table 11: Breakdown of investment category *bonds* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

As shown in Figure 35a “Liabilities”, the liabilities of reinsurance captives are dominated by the loss reserves (69%) and the other liabilities (19%). In Table 12, a breakdown of other liabilities into their components is shown.

General Insurance	FDS component	
Other liabilities	Liabilities from derivative financial instruments	0.7%
	Non-technical provisions	0.7%
	Liabilities from insurance business	19.2%
	Other liabilities	72.9%
	Subordinated liabilities	6.5%

Table 12: Breakdown of *other liabilities* as reported in the “Fundamental Data Sheets” (FDS) as of 1 January 2018.

In Figure 37a “Target capital decomposition” it is shown that the one-year capital and the market value margin correspond to 98% and 2% of the target capital, respectively. The one-year capital is driven (before diversification) by the insurance risk (77%) followed by the credit risk (18%) and the market risk (16%).

⁶A further decomposition is shown only for the dominating categories that have at least two different components.

The main drivers of market risk (before diversification) are the interest rate risk (80%) and the equity risk (22%). As shown in Figure 39a the interest rate risk is dominated by the EUR interest rate risk (58% before diversification).

It should be noted that positions that are non-empty for less than five companies (e.g., "Group life liabilities" under "Liabilities") are excluded from the box-plot analysis. This is the reason why the waterfall chart and the box-plot might not always show the same positions.

8.2 Assets

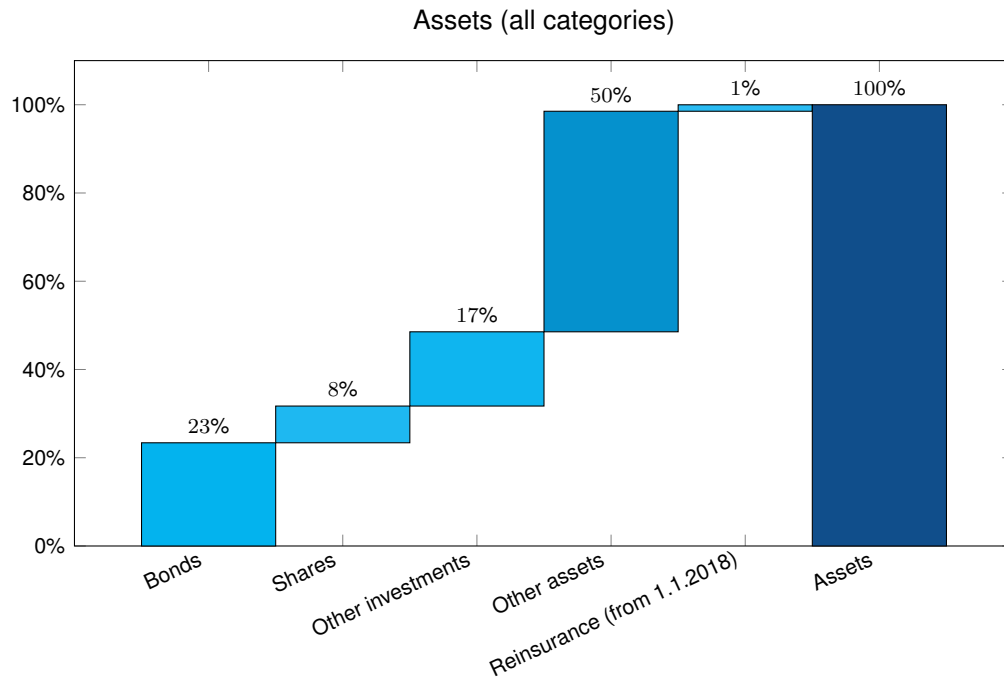


Figure 34a: Re Captive (mean values by sector)

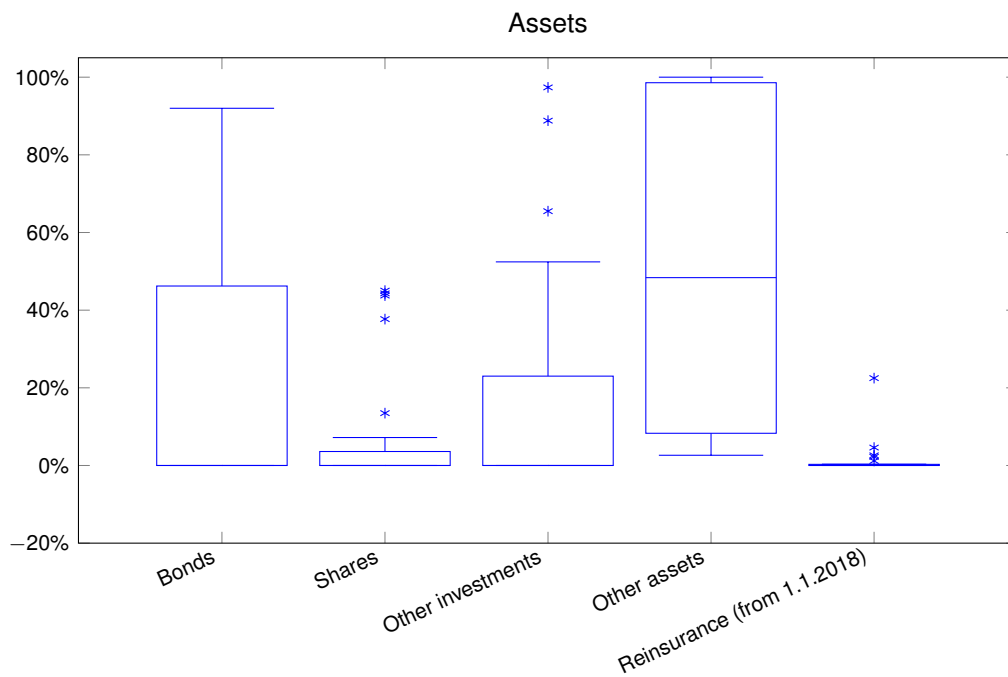


Figure 34b: Re Captive (distribution as box-plot)

8.3 Liabilities

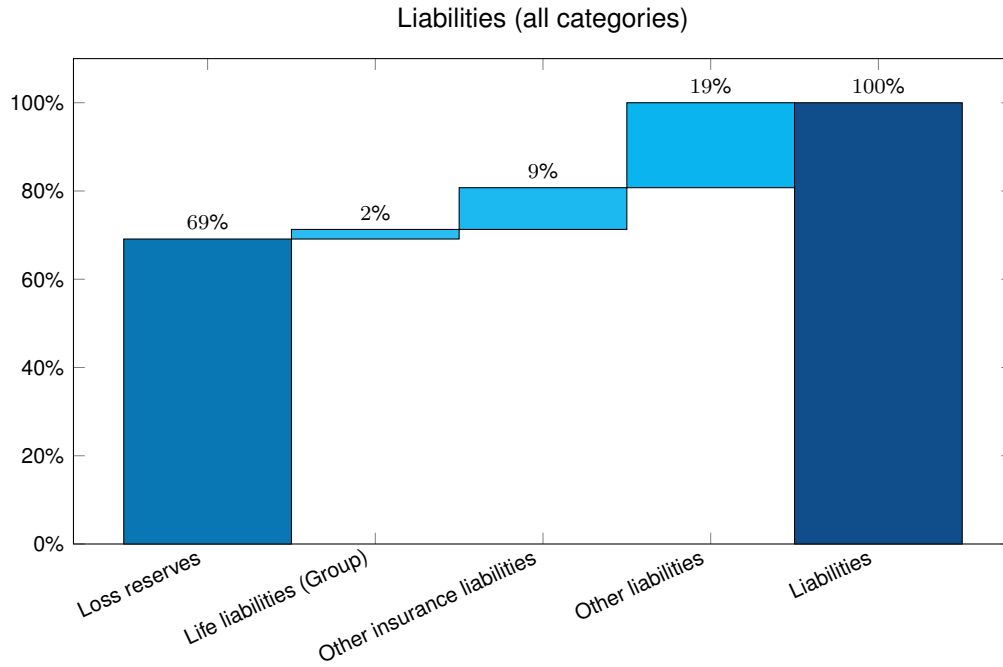


Figure 35a: Re Captive (mean values by sector)

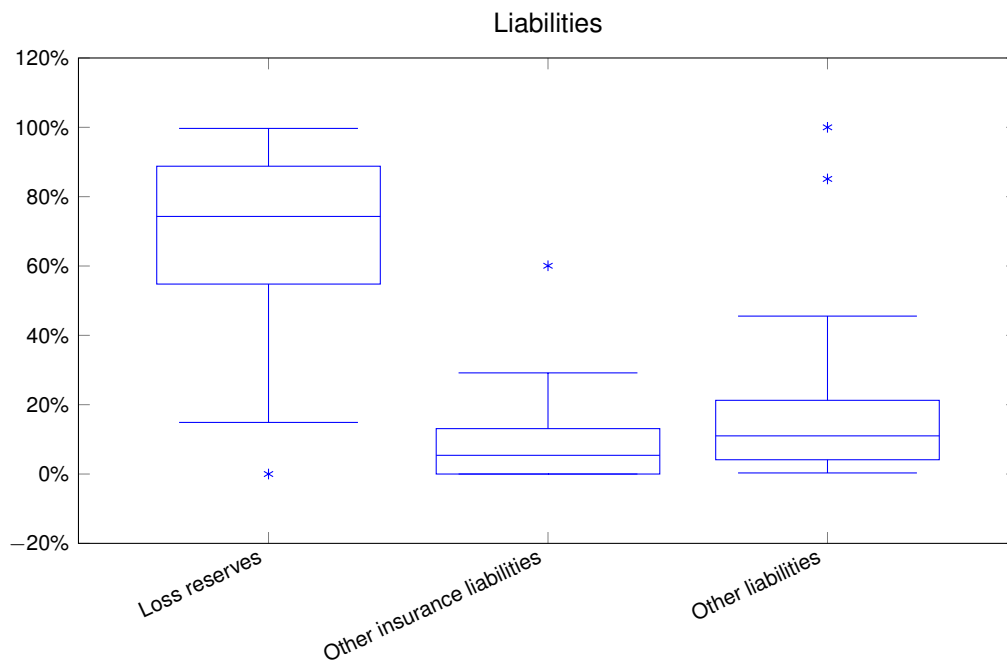


Figure 35b: Re Captive (distribution as box-plot)

8.4 Best estimate of liability and target capital in relation to the balance sheet total

Best estimate of liability and target capital in relation to the balance sheet total (all categories)

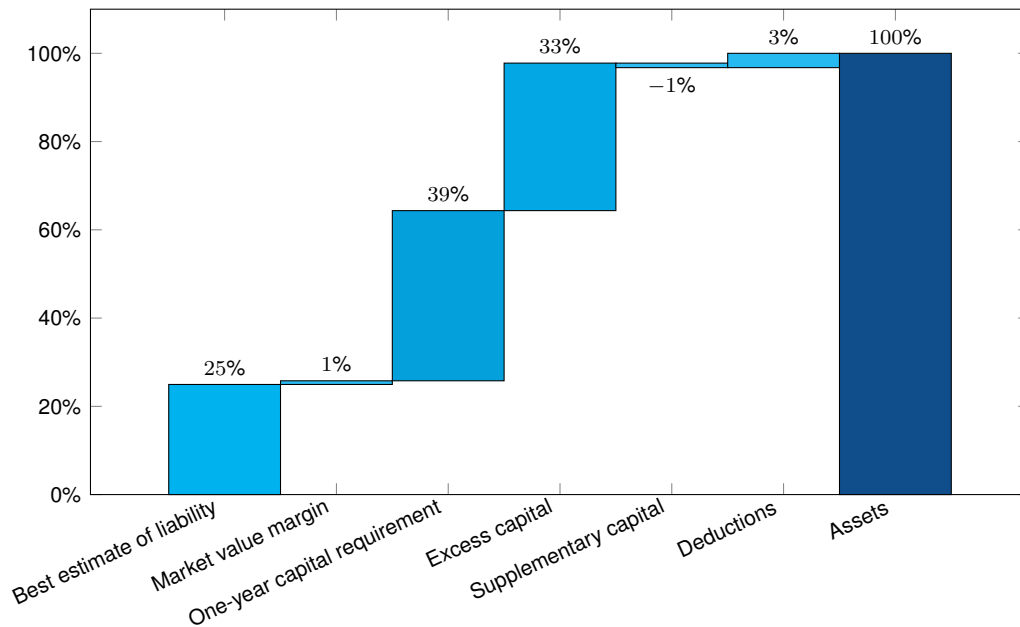


Figure 36a: Re Captive (mean values by sector)

Best estimate of liability and target capital in relation to the balance sheet total

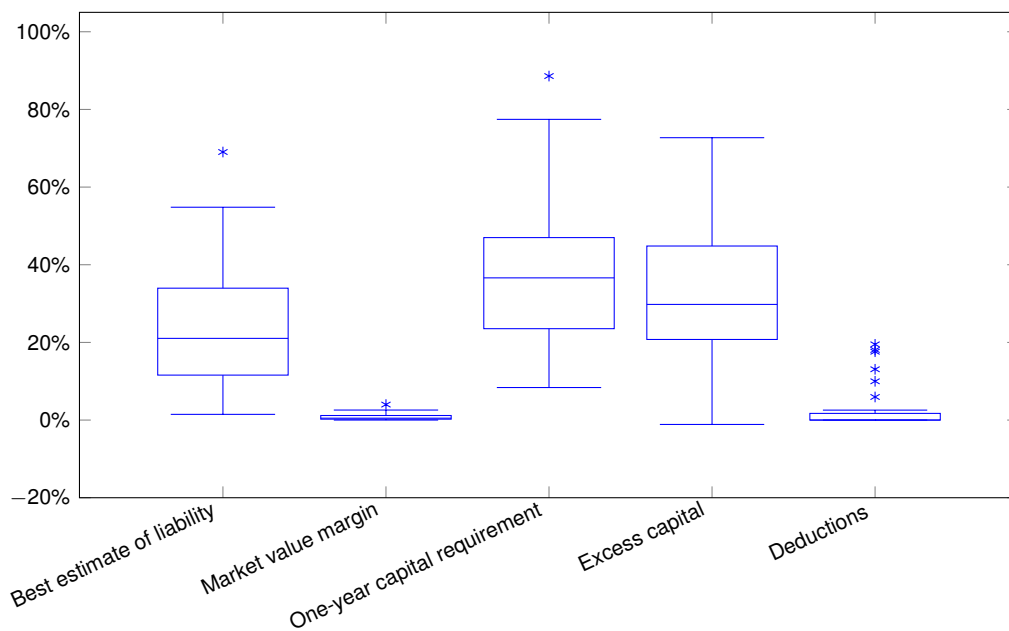


Figure 36b: Re Captive (distribution as box-plot)

8.5 Target capital decomposition

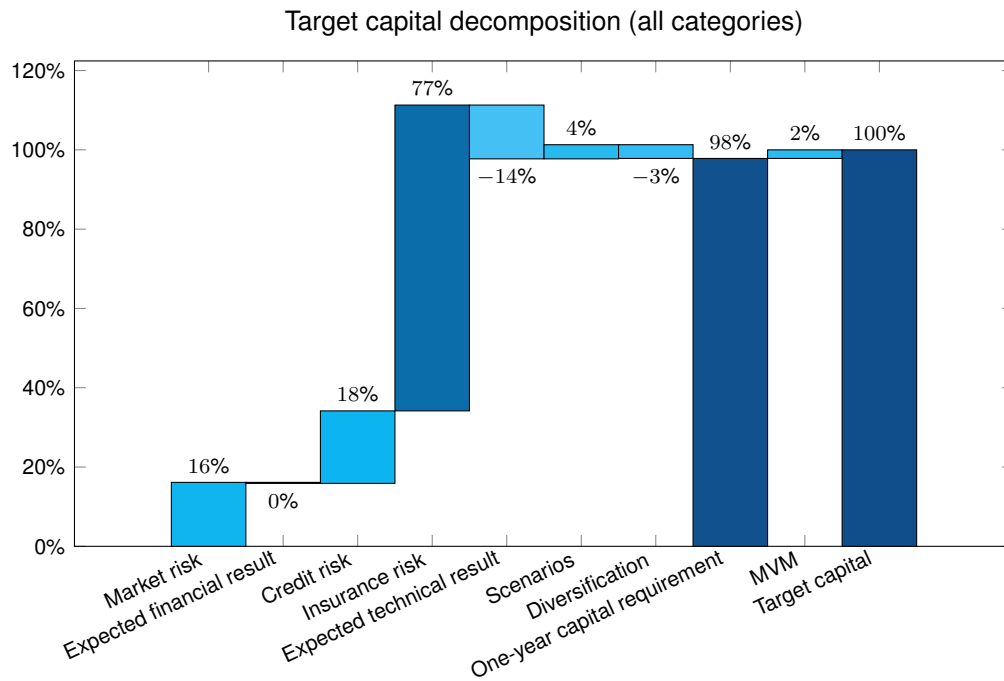


Figure 37a: Re Captive (mean values by sector)

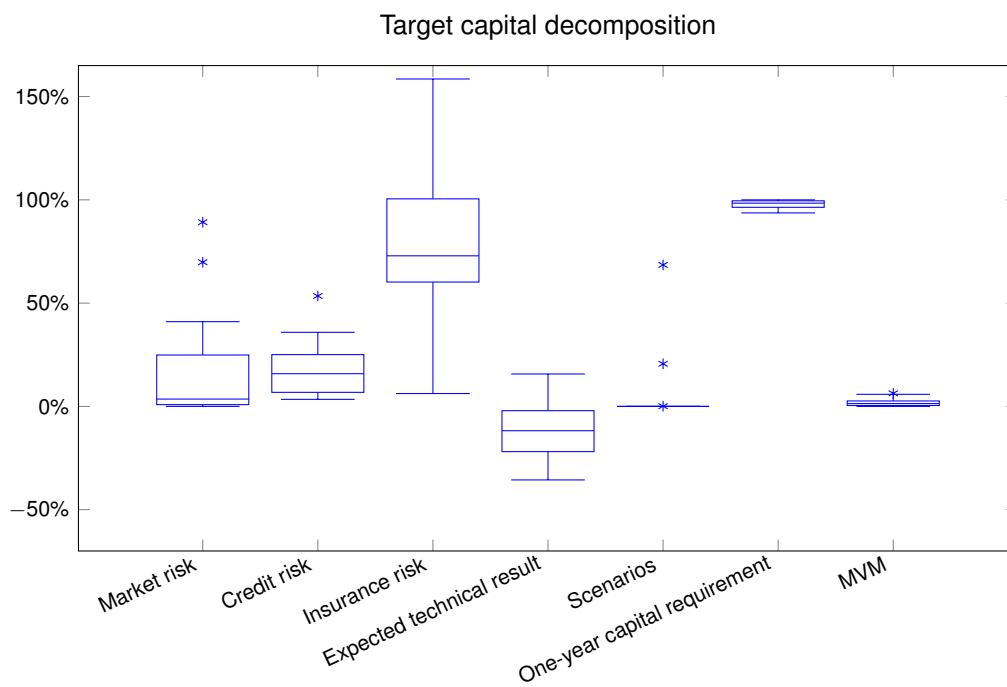


Figure 37b: Re Captive (distribution as box-plot)

8.6 Market risk analysis

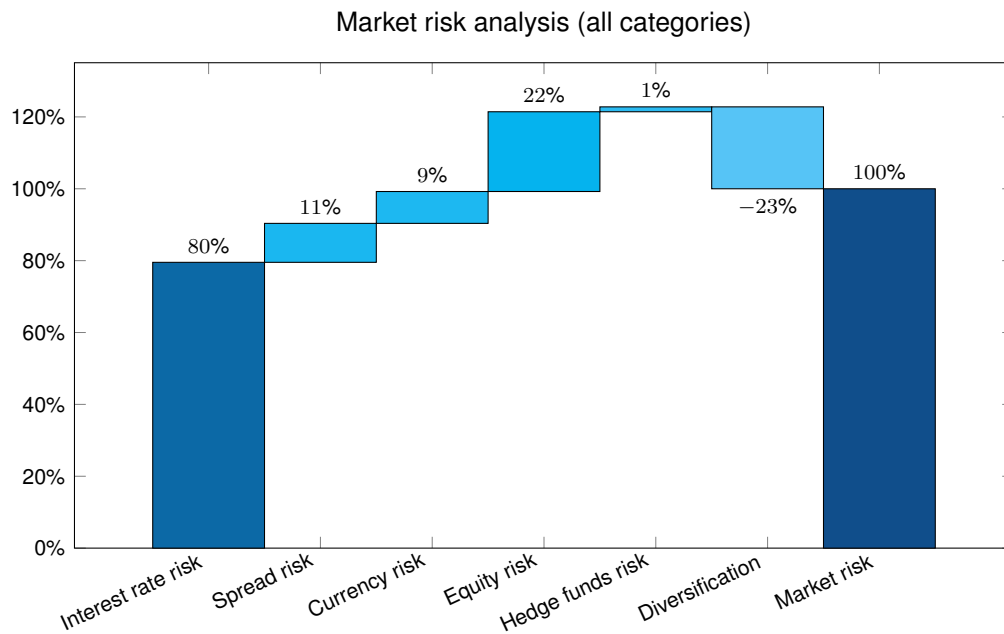


Figure 38a: Re Captive (mean values by sector)

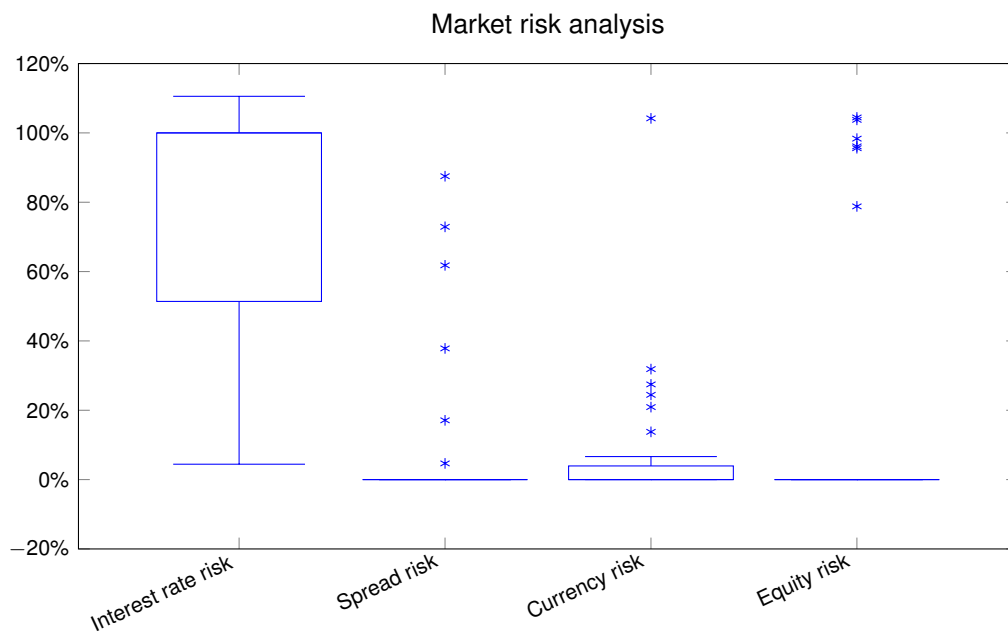


Figure 38b: Re Captive (distribution as box-plot)

8.7 Interest rate analysis

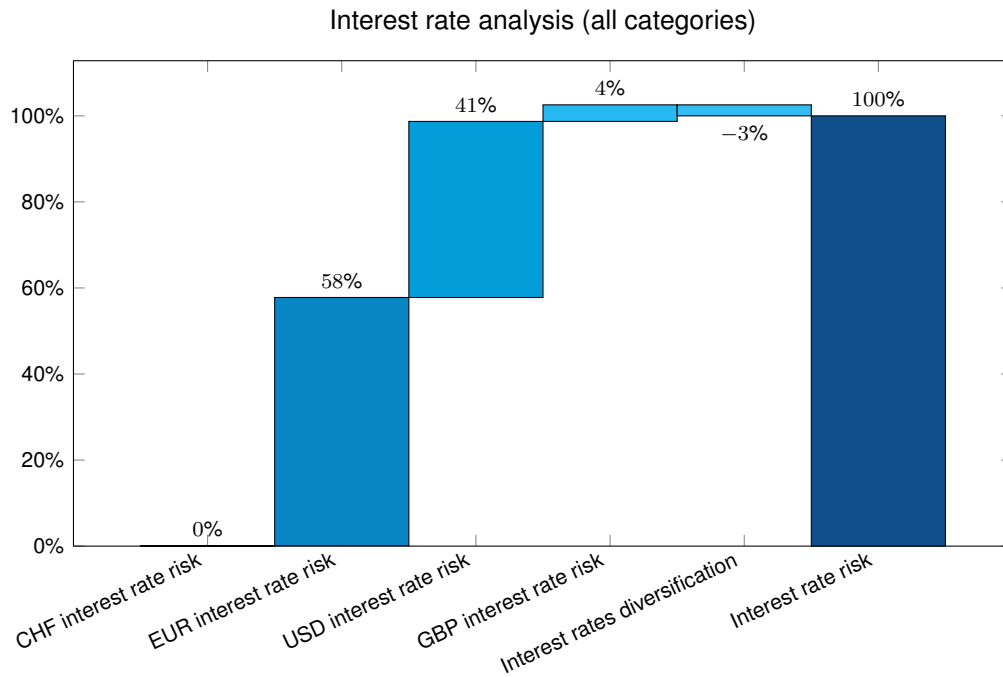


Figure 39a: Re Captive (mean values by sector)

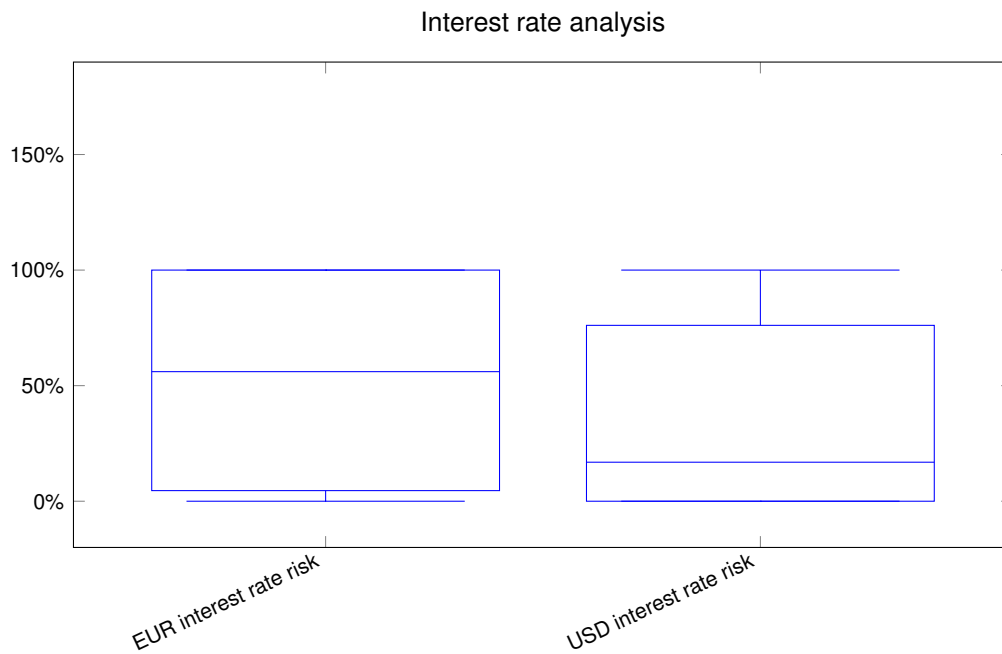


Figure 39b: Re Captive (distribution as box-plot)

8.8 Insurance risk and global scenarios

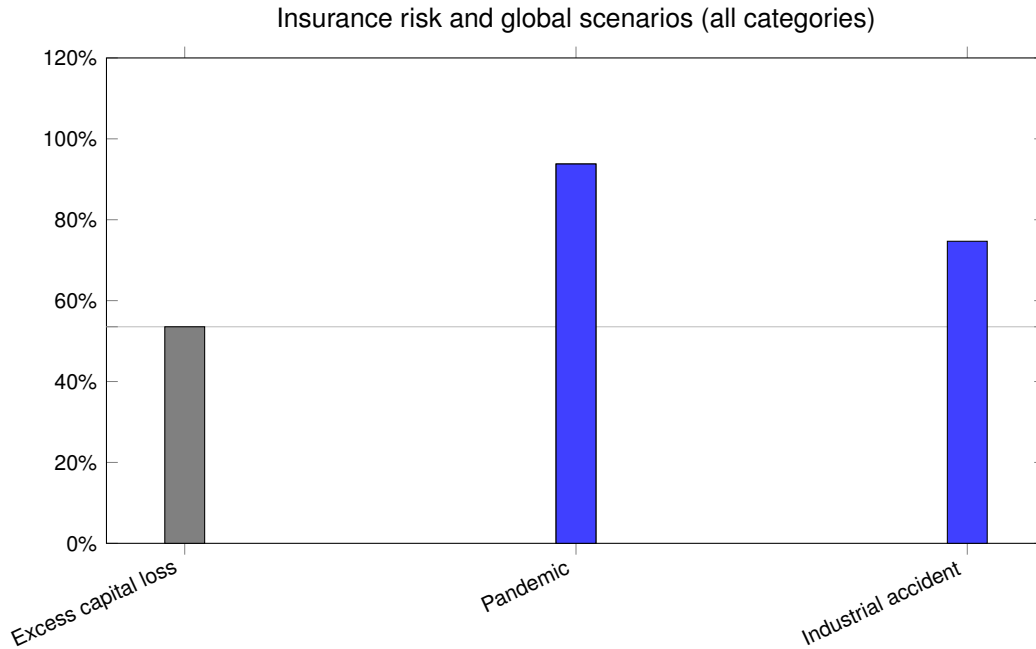


Figure 40a: Re Captive (mean values by sector)

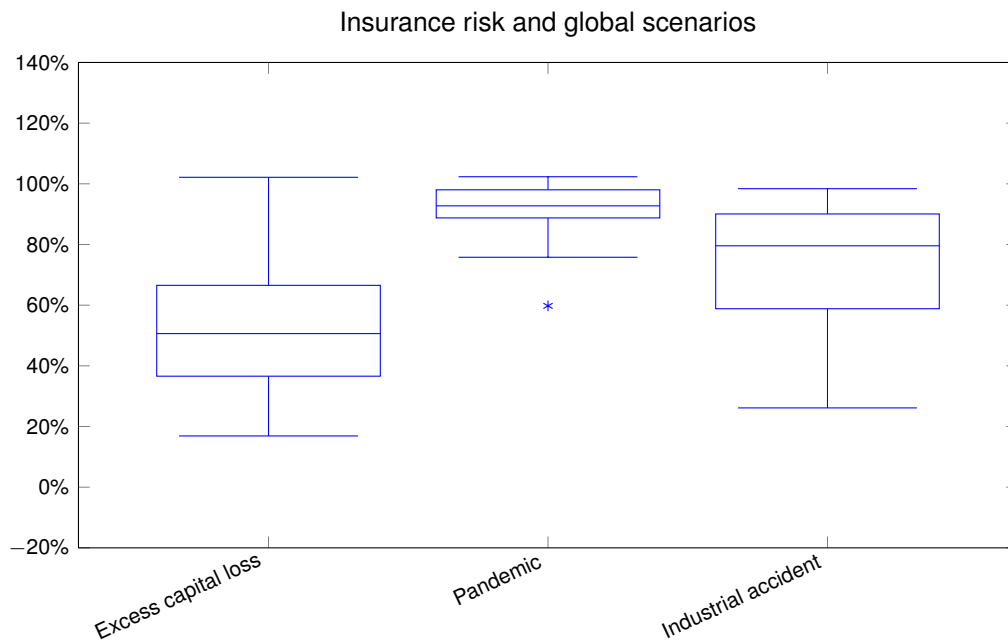


Figure 40b: Re Captive (distribution as box-plot)

A Glossary for figures

In the following Appendix, the risk is measured by the 99% expected shortfall.

A.1 Box-plot

Each box-plot graphic consists of a box and two lines extending vertically from the box, called whiskers. The box is defined through the lower quartile, the 0.25-quantile of the input data, and the upper quartile, the 0.75-quantile of the input data. The vertical line inside the box is the median, i.e. half of the points are less and half of the points are larger than the median.

The whiskers indicate variability outside the upper and lower quartiles within a defined “interquartile range”. Any data outside of the whisker range is supposed to be an outlier and is denoted with a star (individual points).

A.2 Assets

Bonds	Bonds and bonds from open-end funds.
Participations	Participations in enterprises which are not admitted for official quotation.
Real estate	Residential and commercial real estate.
Shares	Shares and own shares.
Hedge funds	Hedge funds and private equity.
Unit-linked life insurance	Assets covering unit-linked life insurance products.
Other investments	Other invested assets.
Other assets	Remaining assets, e.g. liquid assets, various claims, etc.
Reinsurance	Share of the insurance liabilities assumed by reinsurance contracts.

A.3 Liabilities

Loss reserves	Best estimate of liabilities, gross of reinsurance, for claims in general insurance or treatments in health insurance which happened prior to the reference date of the balance sheet.
Life liabilities (Individual)	Best estimate of liabilities, gross of reinsurance, for individual life insurance contracts, excluding unit-linked liabilities.

Life liabilities (Group)	Best estimate of liabilities, gross of reinsurance, for group life insurance contracts, excluding unit-linked liabilities.
Long-term liabilities	Best estimate of liabilities, gross of reinsurance, for health insurers owing to the fact that the insurer is obliged to renew the health insurance contract until the death of the insured.
Other insurance liabilities	Best estimate of other insurance liabilities, gross of reinsurance.
Unit-linked liabilities	Best estimate of liabilities, net of reinsurance, for unit-linked insurance contracts.
Other liabilities	Remaining liabilities, e.g. surplus funds, bonds/loans, various obligations, etc.

A.4 Best estimate of liabilities and target capital in relation to the balance sheet total

Best estimate of liabilities	Best estimate value of liabilities at the reference date of the SST.
Market value margin	Expected cost of the risk-bearing capital to be held for the settlement of the insurance liabilities over their lifetime.
One-year capital requirement	Risk arising from the one-year change in risk-bearing capital. The sum of the one-year capital requirement plus the market value margin equals the target capital.
Excess capital	Commonly used to refer to that part of the risk-bearing capital that is held by an insurer in excess of the target capital, i.e. risk-bearing capital minus target capital.
Supplementary capital	Additional capital eligible to cover an insurer's target capital such as hybrid capital or subordinated debt.
Deductions	Regulatory adjustments for determining an insurer's core capital. Deductions include, among others, own shares, goodwill and other intangibles, planned dividend payments or repayments of debt.

A.5 Target capital decomposition

Market risk	Standalone risk from financial market risk factors.
Expected financial result	Negative of the expected financial result on the assets in excess of the risk-free rate.
Credit risk	Standalone credit risk (default and migration).
Insurance risk	Standalone insurance risk.
Expected technical result	Negative of the expected result on the new insurance business, excluding the financial result.
Scenarios	Impact of the scenarios (prescribed and company-specific) on the target capital.
Other	Impact on the target capital of risks not included elsewhere (e.g. guarantee).
One-year capital requirement	Risk arising from the one-year change in risk-bearing capital. The sum of the one-year capital requirement and the discounted market value margin is equal to the target capital.

Market value margin	Expected cost of the risk-bearing capital to be held for the settlement of the insurance liabilities over their lifetime.
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A.6 Market risk analysis

Spread risk	Risk arising from corporate and governmental spreads over the risk-free rate.
Currency risk	Risk arising from the foreign exchange market.
Equity risk	Risk arising from quoted shares and share funds.
Property risk	Risk arising from real estate investments and real estate funds.
Hedge funds risk	Risk arising from hedge funds.
Private equity risk	Risk arising from private equity investments.
Participations risk	Risk arising from participations in enterprises not recognised for official quotation that is not private equity.
Other	Risk arising from market risk but not covered by above categories.

A.7 Interest rates analysis

CHF interest rate risk	Risk arising from Swiss risk-free interest rates.
EUR interest rate risk	Risk arising from euro risk-free interest rates.
USD interest rate risk	Risk arising from US risk-free interest rates.
GBP interest rate risk	Risk arising from British risk-free interest rates.

A.8 General insurance risk analysis

Reserve risk	Risk that ultimate costs relating to incurred claims (existing claims) vary from those assumed when the liabilities were estimated. Reserve risk arises from claim sizes being greater than expected or differences in timing of claims payments from expected.
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Normal claims	<p>Risk from claims with loss amounts below a certain threshold value, typically characterized by high frequencies and low severities.</p> <p>Related terms: frequency claims, small claims, attritional claims</p>
Large claims	<p>Risk from claims with loss amounts above a certain threshold value, typically characterized by low frequencies and high severities.</p>
Nat Cat	<p>Risk from claims triggered by a single event, or a series of events (natural hazards such as earthquake, flood, hail, storm, etc.), of major magnitude, usually over a short period (often 72 hours) that lead to a significant deviation in actual claims from the total expected claims.</p>

B Global glossary

Core capital	<p>Core measure of an insurer's strength from a regulatory perspective. Core capital equals the market-consistent value of assets minus the market-consistent value of liabilities minus deductions plus the market value margin.</p> <p>Related terms: market-consistent valuation, market value margin, deductions</p>
Cost of capital charge	<p>Cost rate used to determine the costs expected for all future one-year capital requirements until run-off.</p>
Economic balance sheet	<p>Balance sheet statement based on market-consistent values for all assets and liabilities relating to in-force business, including off-balance sheet items.</p> <p>Related terms: market-consistent valuation, total balance sheet approach</p>
Expected shortfall	<p>A coherent risk measure. For a given confidence level of $1 - \alpha$, it measures the average losses over the threshold defined (typically set as the value-at-risk for a percentile given), i.e. the conditional mean value, given that the loss exceeds the $1 - \alpha$ percentile.</p> <p>Related term: value-at-risk</p>
Fundamental data sheet	<p>Form to report figures for the annual SST reporting process. It needs to be filled in by all insurers, regardless of whether they use an internal model or the SST standard model.</p>
Market-consistent valuation	<p>The practice of valuing assets and liabilities on market values, where observable, with a given quality (mark-to-market); where not, on market-consistent valuation techniques (mark-to-model).</p>

<p>Premium risk</p>	<p>Risk that ultimate costs relating to <i>future</i> claims vary from those assumed when the obligations were estimated. Premium risk arises from claim sizes being greater than expected or differences in claims frequency from those expected. Premium risk is composed of frequency claims, large claims and catastrophe claims.</p> <p>Synonyms: current year risks, underwriting risks, pricing risk</p> <p>Related terms: reserve risk</p>
<p>Risk-bearing capital</p>	<p>Capital which may be taken into account when determining the insurer's available capital for SST purposes. Risk-bearing capital is defined as the sum of the core capital with the supplementary capital.</p> <p>Related terms: core capital, supplementary capital</p>
<p>Risk-free interest rate</p>	<p>Risk-free interest rate is the theoretical rate of return of an investment with no credit risk.</p> <p>Related term: risk-free yield curve</p>
<p>Risk-free yield curve</p>	<p>Curve that shows the relation between the risk-free interest rate (or cost of borrowing) and the time to maturity (the term) of the debt for a given borrower in a given currency. The yield curves corresponding to the bonds issued by governments in their own currency are called the government bond yield curves and considered as risk-free in the context of the SST.</p> <p>Related terms: risk-free interest rate</p>
<p>Supervisory category</p>	<p>System of six risk categories to which each supervised institution is assigned. Categorisation is based on the risks posed to creditors, investors and policyholders, as well as to the entire system, and to Switzerland's reputation as a financial centre. Supervised institutions in category 1 are characterised by their size and global relevance, and the associated significant risks posed at various levels. In the other categories, the institutions' risk potential decreases incrementally to category 5, while those in category 6 are not subject to prudential supervision.</p> <p>Reference: FINMA Newsletter 19 (2011) "Overhaul of FINMA's supervisory approach"</p>

<p>Supplementary capital</p>	<p>Additional capital eligible to cover an insurer's target capital. Supplementary capital is split between lower supplementary capital and upper supplementary capital, depending on how well the capital can absorb losses. Supplementary capital includes instruments with risk-absorbing properties such as hybrid capital or subordinated debt. For instance, perpetual subordinated loans qualify as upper supplementary capital, whereas subordinated bonds with a fixed maturity date qualify as lower supplementary capital.</p> <p>Related terms: risk-bearing capital, target capital</p>
<p>Target capital</p>	<p>The amount of capital to be held by an insurer to meet the quantitative requirements under the SST. The target capital equals the sum of the one-year capital requirement plus the market value margin.</p> <p>Related terms: one-year capital requirement, market value margin</p>
<p>Total balance sheet approach</p>	<p>Principle which states that the determination of the amount of capital an insurer has available and needs for solvency purposes should be based upon all assets and liabilities, as measured in the insurer's regulatory balance sheet (e.g. market-consistently), and how they interact.</p> <p>Related terms: economic balance sheet, market-consistent valuation</p>
<p>Value-at-risk</p>	<p>Value-at-risk is a percentile of a distribution and is used as a (non-coherent) risk measure.</p> <p>Related term: expected shortfall</p>