

Investors' Day – Reserves workshop

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Swiss Re's reserving approach ensures transparent assessment of insurance liabilities

Principles for Reserving

- Based on all latest, relevant information
- ✓ • Enable a consistent, global view across the Group
- Ensure we understand the uncertainties and risks to the reserves

- Not to build buffers or under-reserve
- ✗ • Not to manage results, or perform "step-reserving"
- ✗ • Not to manage capital or create an effective statutory "equalisation reserve" where not required

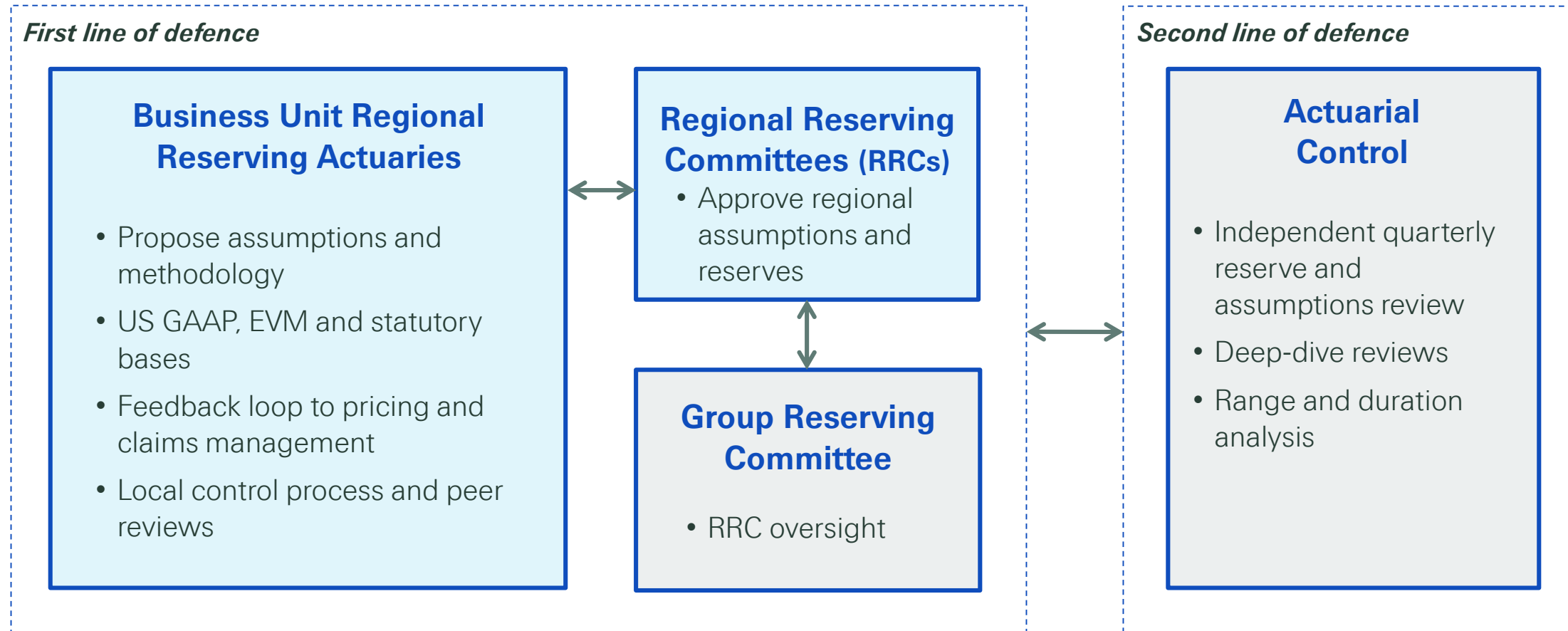
US GAAP

- P&C: Best estimate, but with no discounting of expected future cashflows
- L&H: Primarily rules-based, with many product lines "locked-in" at inception

EVM

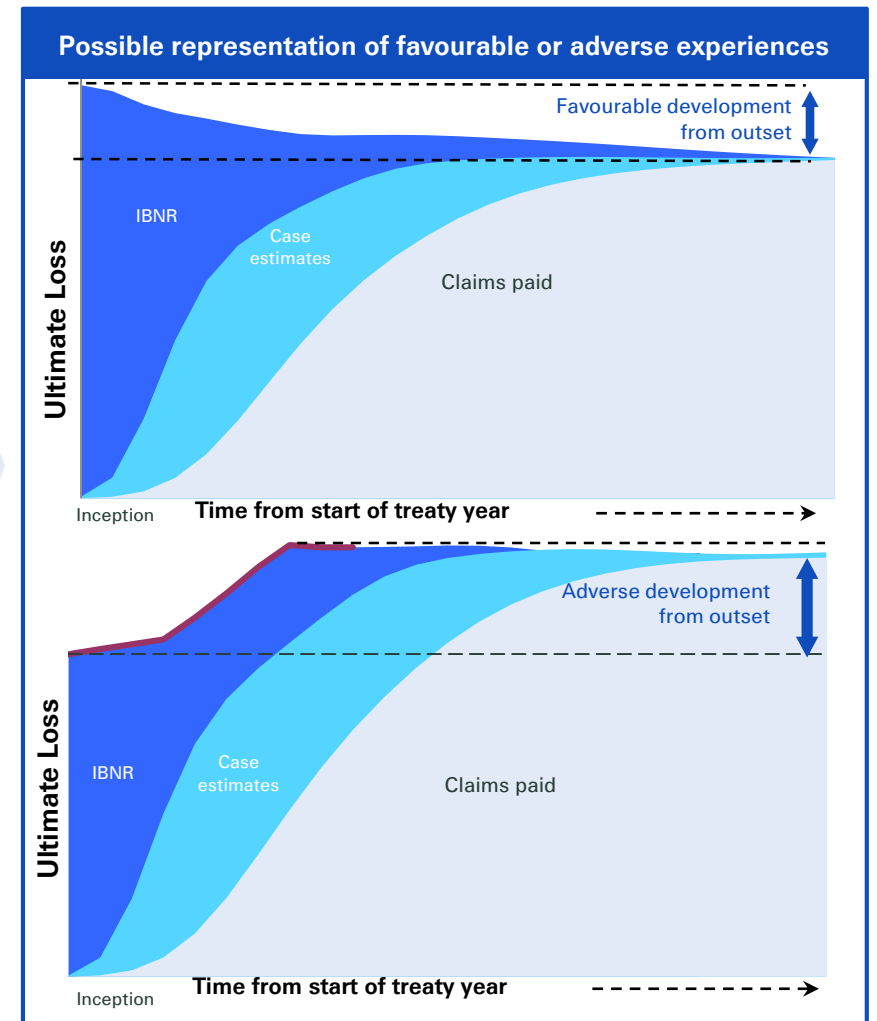
- Principles-based, best estimate reserves with discounting of expected future cashflows
- Market-consistent

Robust process and governance for appropriate reserve setting



Swiss Re's P&C initial loss reserving is gradually updated based on actual loss experience

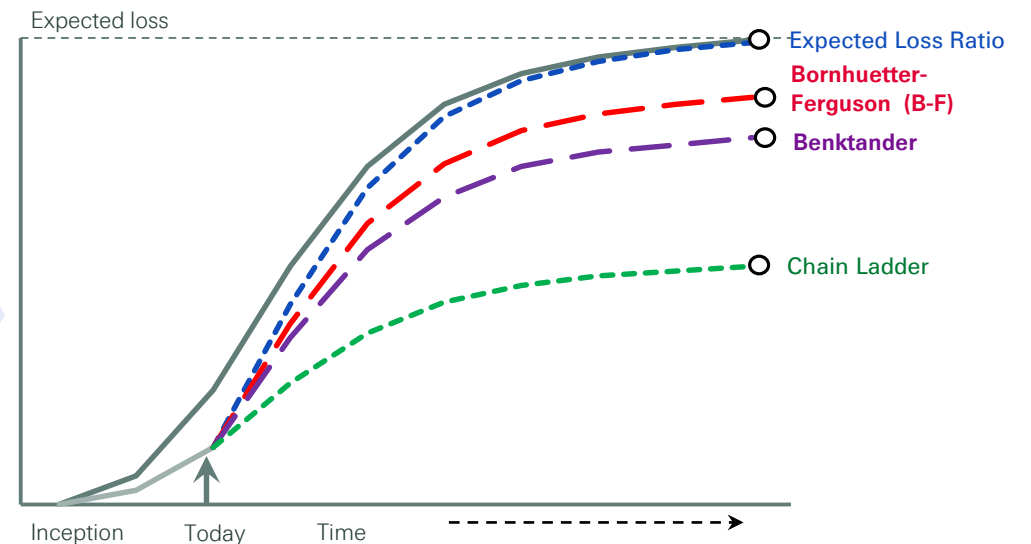
- Initial loss reserving is determined at the time of writing the business
- Subsequently, initial loss estimates are gradually replaced by taking into account actual loss experience; ultimate loss estimates are periodically updated
- IBNR (Incurred but not reported) reserves are based on a weighted average between the initial loss estimate and a projected ultimate loss estimate



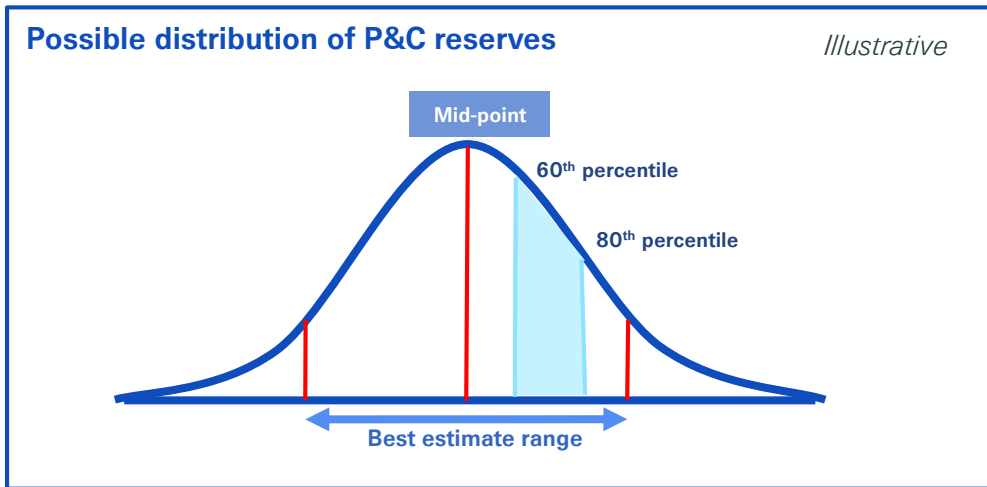
P&C reserving approach depends on the type of claims

- For **large events** which are sudden and unexpected, a separate process combines the knowledge of all relevant areas of expertise in estimating the initial ultimate loss
- Reserving for **asbestos and environmental** claims is based on industry benchmarks which are reassessed annually
- Reserving for claims subject to periodic payments depending on survival, such as **motor liability**, is performed separately and depends on the level of information provided by our cedents
- Reserving for **non-traditional business**, such as retroactive deals or multi-year deals, is carried out on a deal-by-deal basis according to each deal's specifications

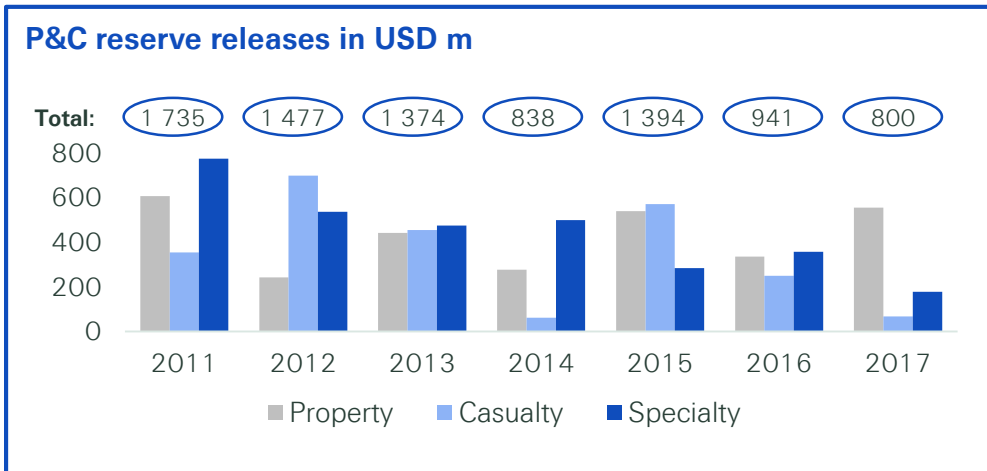
Loss development triangles for homogeneous portfolios are used for reserving traditional reinsurance and direct insurance claims. Standard actuarial techniques such as the Chain Ladder or the Benktander methods are applied using past claims experience



Swiss Re's P&C reserving strength is demonstrated by being in the upper half of a range of best estimates

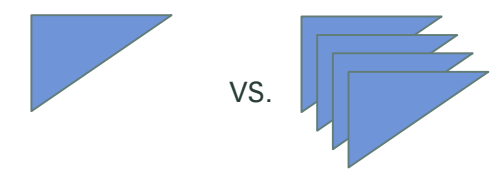
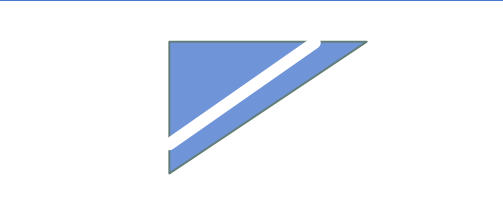
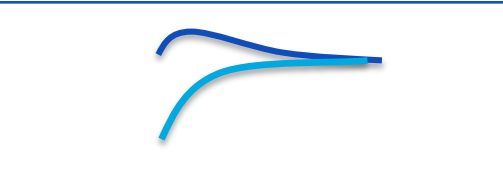
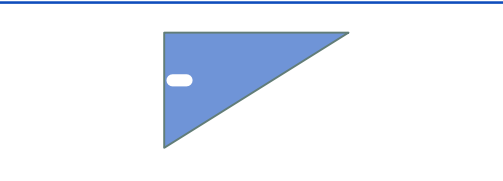


- Swiss Re's reserving strength is independently assessed every quarter by the Actuarial Control team
- Booked reserves are positioned on a range of best estimates – for more than 15 years, Swiss Re's P&C reserves have been between the 60th and 80th percentile
- Swiss Re does not target a specific percentile in the range



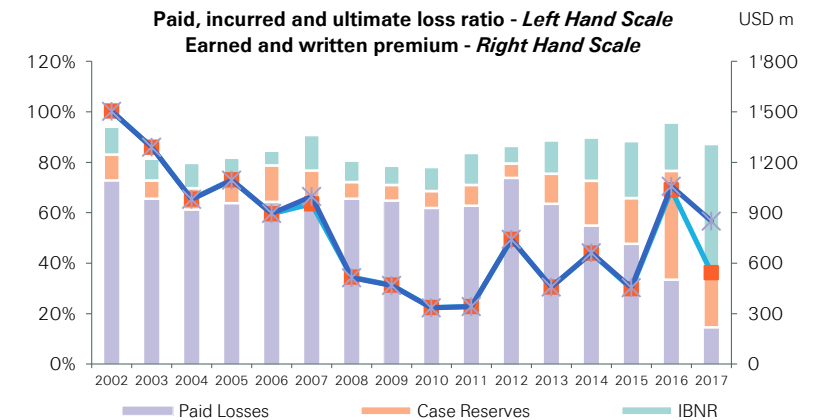
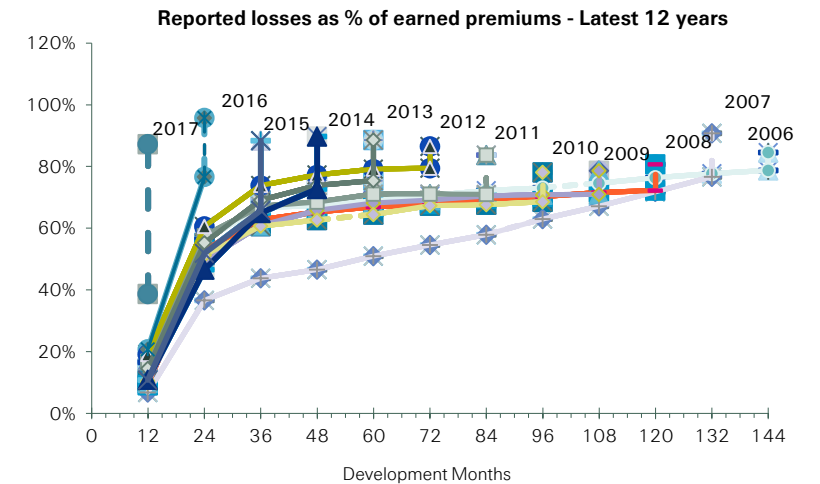
- Reserves were released over the last few years
- All major lines of business contributed to reserve releases
- Strength in reserves remained strong and even increased between 2011 and 2017

Considerations when analysing P&C claims development triangles

Reasons for potential pitfalls		Implications
Segmentation of claims into triangles		Large number of triangles might contribute to a certain degree of conservatism
Changes in cedent reporting practices, changes to internal claims processes or one-off diagonal effect such as changes to discount rate for bodily injury claims		Workers' comp and liability triangles for 2016 and 2017 show higher reported claims because of a change in cedent practice. Motor triangles are also impacted by one-off diagonal effects
Market specific practices; in some countries, cedents often overestimate the initial case reserves		Motor triangles need to be analysed by country to adequately assess trend (not possible based on aggregated information); negative IBNR in accident year triangles for proportional business
Atypical or unusual large losses		Risk of mis-projection

Accident & Health – distorted due to changes in cedent reporting

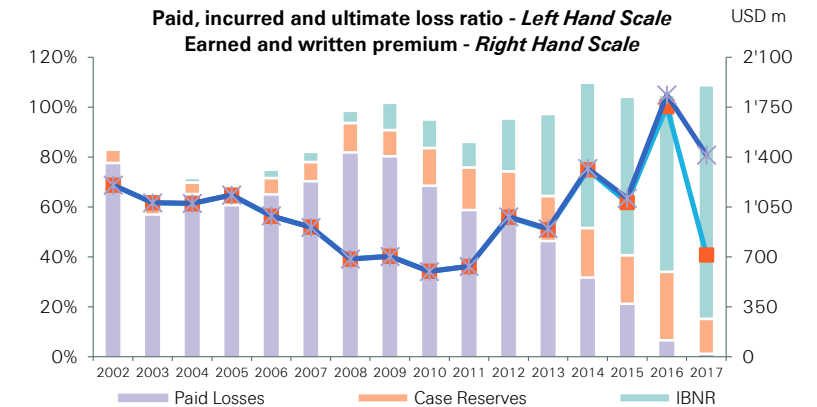
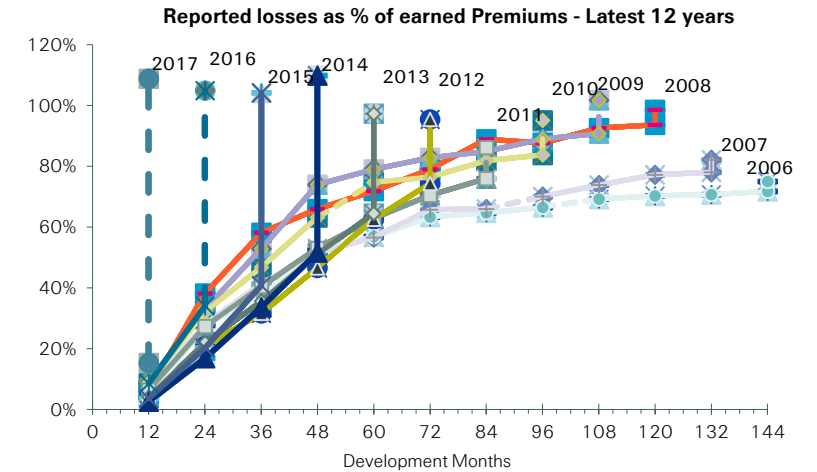
Treaty Year	Earned Premium in USDm	Reported Loss Ratios per Development Month																	Ult Loss Ratio	Paid Losses	Case Reserves	IBNR
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192					
2002	1'506	16%	57%	70%	69%	71%	76%	77%	75%	77%	79%	80%	81%	83%	82%	83%	83%	94%	73%	10%	11%	
2003	1'289	16%	43%	59%	63%	64%	65%	69%	68%	68%	69%	69%	71%	72%	72%	73%		81%	66%	7%	9%	
2004	982	24%	51%	59%	63%	63%	63%	66%	66%	66%	67%	68%	69%	69%	70%		80%	61%	8%	10%		
2005	1'095	19%	51%	60%	63%	65%	67%	68%	69%	70%	71%	72%	72%	72%			82%	64%	8%	10%		
2006	894	17%	56%	67%	67%	69%	71%	72%	73%	75%	76%	78%	79%				85%	64%	14%	6%		
2007	953	7%	37%	44%	47%	51%	55%	58%	63%	67%	72%	77%					91%	66%	11%	14%		
2008	518	9%	53%	63%	65%	67%	68%	70%	70%	72%	72%						81%	66%	7%	9%		
2009	470	10%	50%	61%	66%	68%	69%	70%	71%	71%							79%	65%	6%	8%		
2010	336	11%	51%	61%	63%	64%	67%	68%	69%								78%	62%	7%	10%		
2011	341	17%	58%	67%	68%	71%	71%	71%									84%	63%	8%	13%		
2012	742	19%	61%	74%	77%	79%	79%										86%	74%	6%	7%		
2013	458	15%	55%	69%	74%	75%											89%	64%	12%	13%		
2014	661	11%	47%	65%	73%												90%	55%	18%	17%		
2015	450	11%	52%	66%													88%	48%	18%	23%		
2016	1'036	21%	77%														96%	34%	43%	19%		
2017	544	39%															87%	15%	24%	49%		



- 2016 and 2017 show larger than usual reported losses as these years include “cedent” IBNR
- 2007 underwriting year should be ignored when projecting to Ultimate because it contains a high share of business that is fully retroceded

Liability proportional – reflects recent growth

Treaty Year	Earned Premium in USDm	Reported Loss Ratios per Development Month																	Ult Loss Ratio	Paid Losses	Case Reserves	IBNR
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192					
2002	1'204	12%	28%	42%	55%	65%	73%	78%	80%	80%	80%	82%	81%	82%	82%	82%	83%	84%	78%	5%	1%	
2003	1'082	13%	27%	33%	42%	51%	55%	56%	56%	57%	58%	58%	59%	59%	60%	61%		62%	57%	4%	0%	
2004	1'075	10%	26%	34%	43%	52%	57%	61%	63%	65%	65%	65%	66%	67%	70%			72%	65%	5%	2%	
2005	1'135	2%	25%	34%	41%	52%	55%	57%	59%	61%	61%	62%	63%	65%				68%	61%	4%	3%	
2006	988	4%	28%	37%	52%	57%	63%	65%	66%	69%	70%	71%	72%					75%	65%	7%	3%	
2007	911	7%	28%	41%	52%	57%	66%	66%	70%	74%	77%	78%						82%	70%	8%	4%	
2008	686	6%	38%	58%	66%	72%	79%	89%	88%	93%	94%							99%	82%	12%	5%	
2009	705	9%	33%	53%	74%	79%	83%	85%	89%	91%								102%	80%	10%	11%	
2010	600	9%	32%	47%	63%	75%	76%	82%	84%									95%	69%	15%	11%	
2011	634	6%	27%	40%	53%	63%	71%	76%										86%	59%	17%	10%	
2012	981	4%	21%	32%	47%	63%	74%											95%	56%	19%	21%	
2013	893	4%	22%	36%	51%	64%												97%	46%	18%	33%	
2014	1'311	2%	17%	34%	52%													110%	32%	20%	58%	
2015	1'083	4%	20%	41%														104%	21%	20%	63%	
2016	1'755	8%	34%															105%	7%	27%	71%	
2017	715	15%																109%	1%	14%	94%	

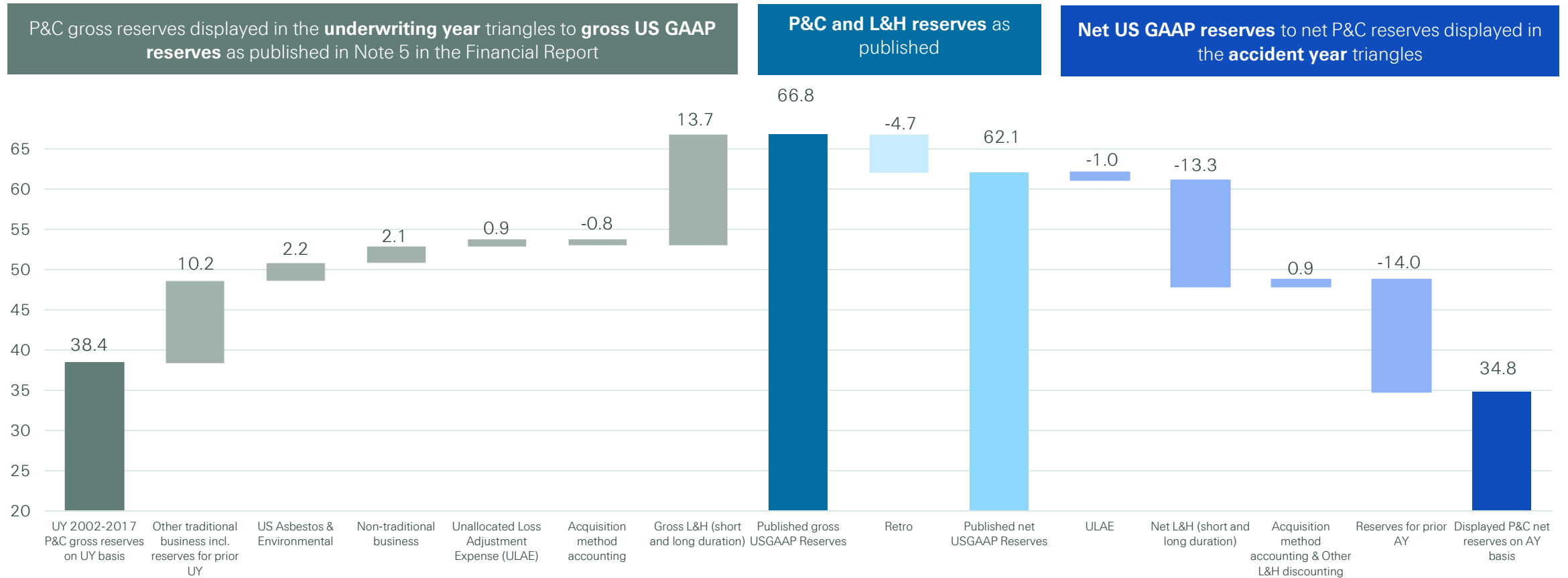


- Higher IBNR on recent years given the immature nature of the business
- This portfolio is also impacted by the change in the cedent reporting, however to a lesser extent

Underwriting and accident year triangles serve different purposes

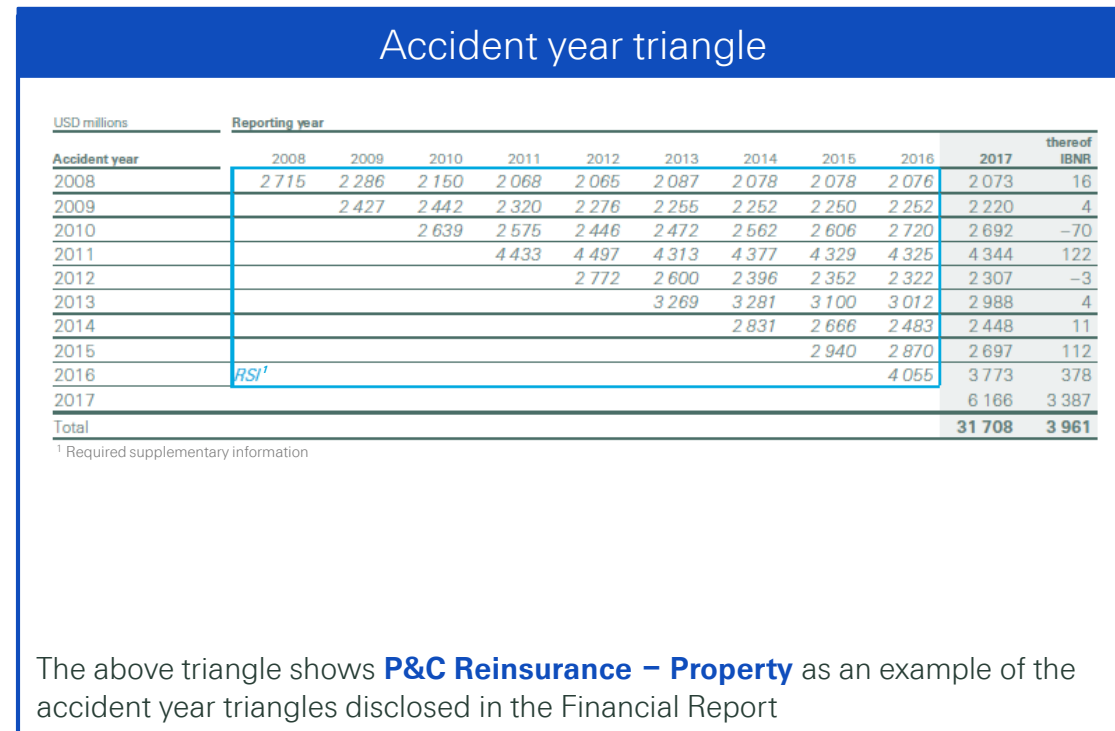
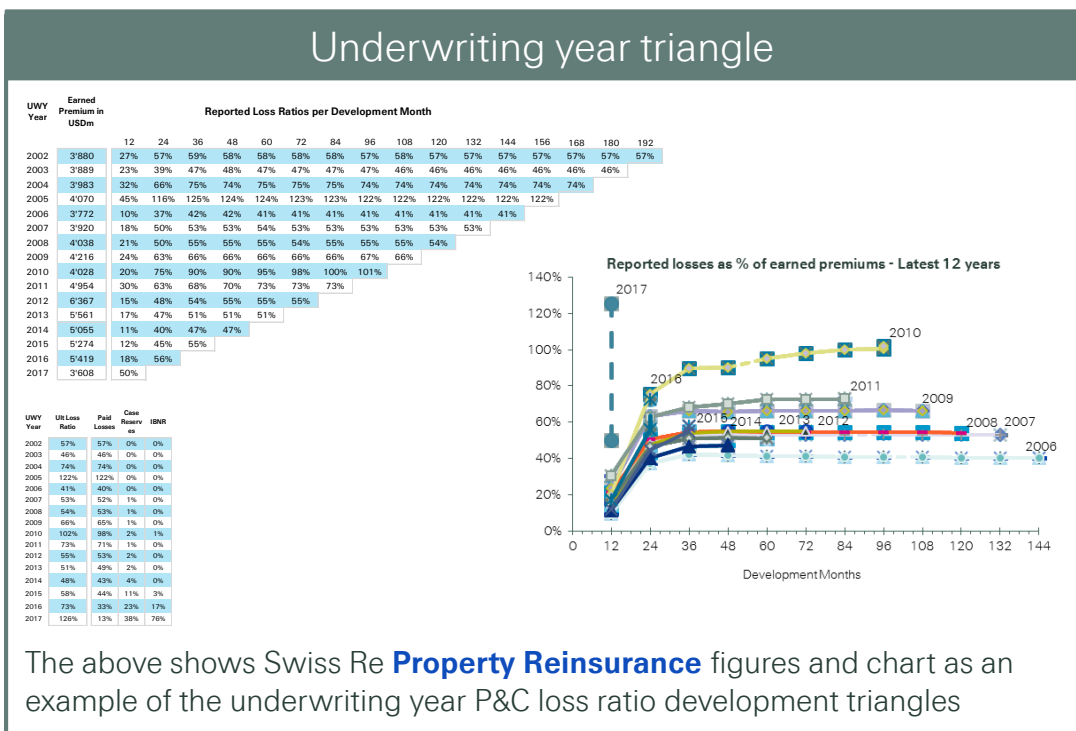
	Underwriting year (UY) triangle	Accident year (AY) triangle
Definition	Underwriting year groups claims information according to the calendar year in which the original policy or reinsurance contract was incepted	Accident year groups claims information by the calendar year in which the claim event (the date of loss) falls
Basis	Gross of external retrocession	Net of internal and external retrocession
Data	Paid and reported loss ratio triangles, earned premiums net of commissions and <i>latest</i> IBNR	Paid and incurred (i.e. reported plus IBNR) claims triangles
Scope	Traditional P&C business	Traditional and non-traditional business
Purpose	<ul style="list-style-type: none"> • Project paid or reported claims to ultimate and are the basis for deriving the best estimate reserves • Used internally to project to ultimate 	<ul style="list-style-type: none"> • Give an indication on how the ultimate loss (i.e. <i>reported plus IBNR</i>) developed over time • Constructed in order to comply with US GAAP reporting requirement
Number of years disclosed	16 underwriting years	10 accident years for Reinsurance and 6 accident years for Corporate Solutions

Reserves walk between underwriting and accident year triangles



- Underwriting year triangles and accident year triangles are used for different purposes and are on a different basis
- Accident year triangles show incurred claims, i.e. reported claims and IBNR, while, underwriting year triangles show reported triangles

Swiss Re discloses its underwriting year triangles online and its accident year triangles in the Financial Report



- Underwriting year triangle is the basis to determine best estimate ultimate claims
- Accident year triangle can give an indication of how Swiss Re's initial estimation has developed over time

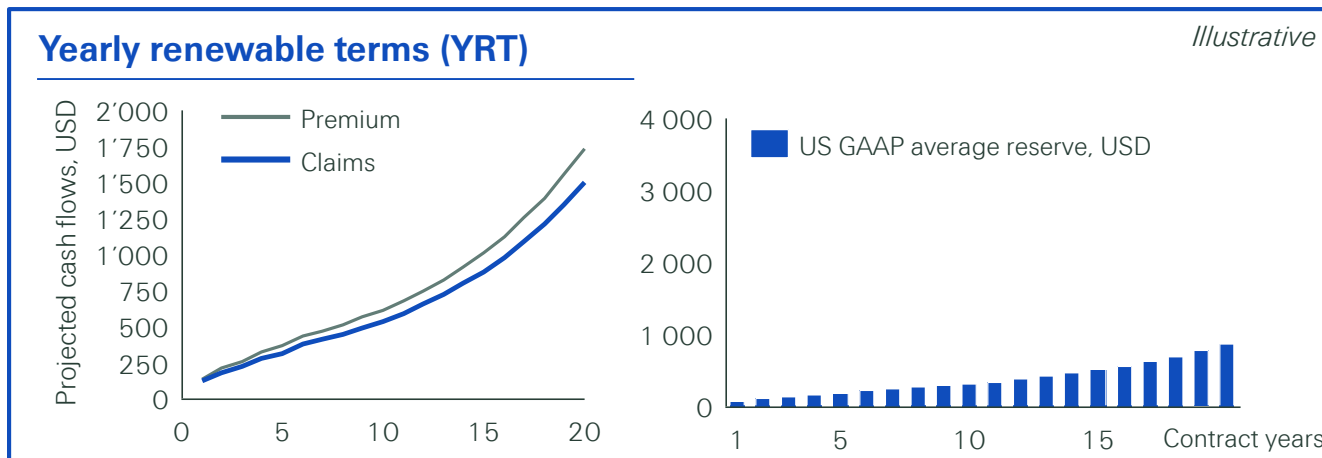
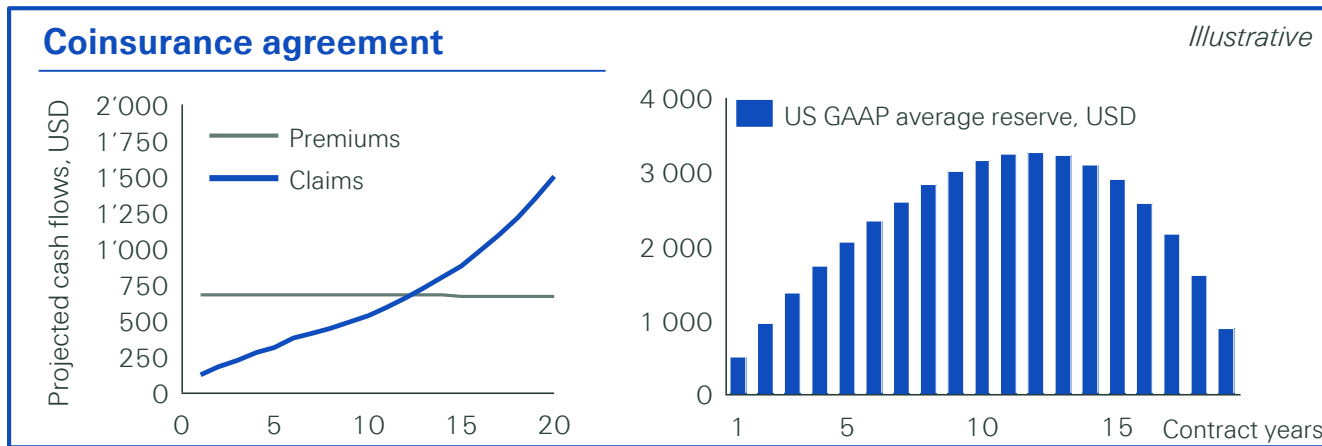
Significant share of Swiss Re's US GAAP L&H reserves are calculated using assumptions 'locked-in' at inception

As of 31 December 2017, USD billions	Life & Health Reinsurance	Life Capital
Liabilities		
Unpaid claims and claim adjustment expenses	12 129	2 308
Liabilities for life and health policy benefits	18 230	29 491
Policyholder account balances	1 574	35 963
Other reinsurance liabilities	5 528	4 410
Short-term debt	4 766	904
Long-term debt	6 914	1 603
Other	7 197	2 954
Total liabilities	56 338	77 633
Shareholders' equity	8 221	7 088

- Claims reserves are best estimate and reflect the expected future payments due for claims that have been incurred prior to the valuation date – they are mostly driven by L&H Reinsurance
- Policy reserves are the net amount held to fund claims to be incurred after the valuation date; they take into account premiums due after the valuation date. These reserves are calculated using assumptions that are 'locked-in' at inception of the business, and include a margin for adverse deviation
- Policyholder account balances are amounts held on behalf of the policyholder, for example in unit-linked funds – the vast majority stems from Life Capital closed book

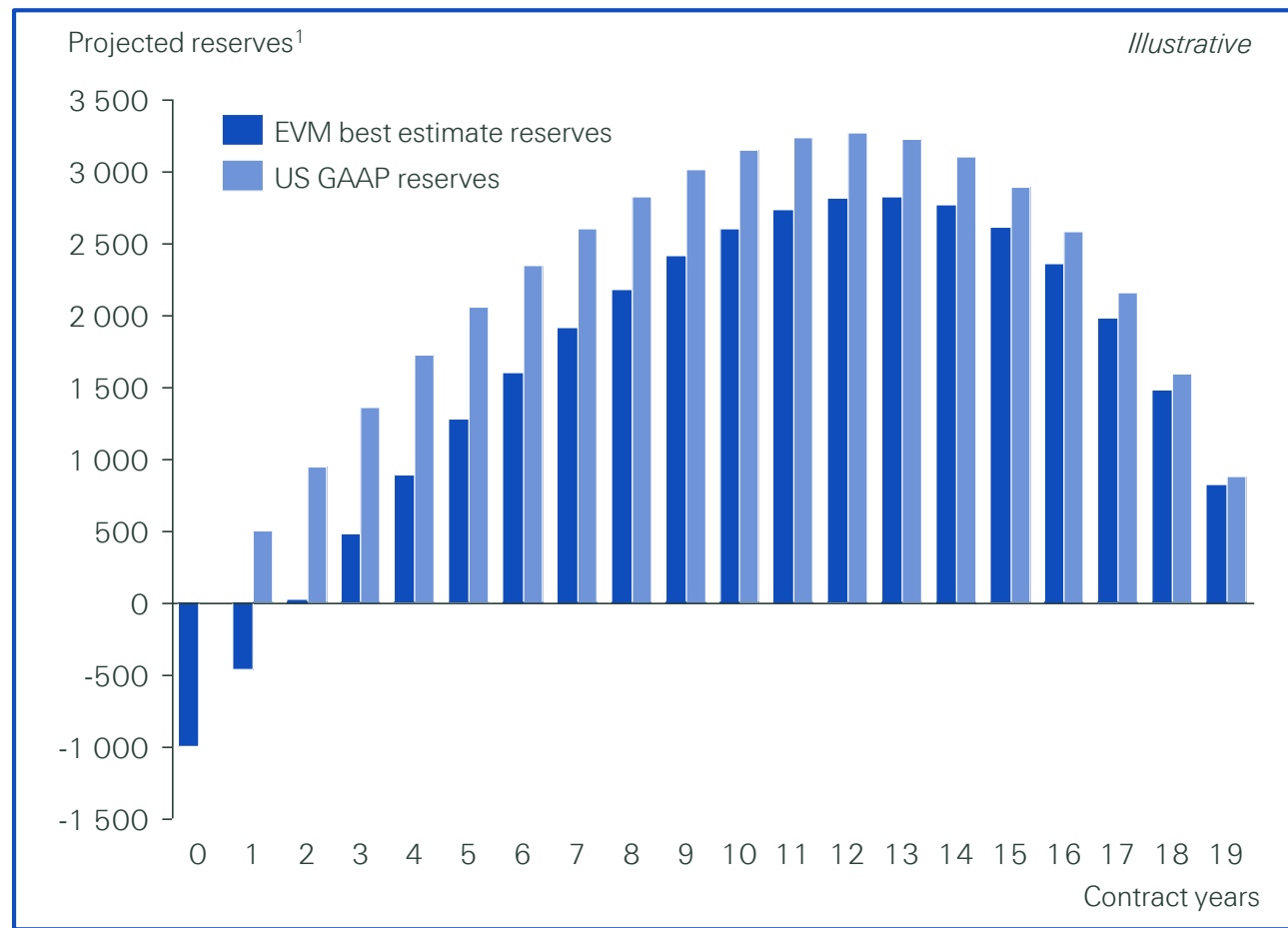
Source: Swiss Re Financial Report 2017, page 203

Life & Health reserve patterns vary with contract type – size of Swiss Re’s reserves is not a good indicator for the amount of risk



- Life & Health contracts cover risks over many years, in some cases for the whole of life
- Structure of premium rates affects how reserves build up
- For coinsurance life contracts, reserves build up in the early years to fund the cashflow shortfall in later years
- For YRT contracts, there is minimal reserve build-up if the premiums and claims cashflows are well matched

EVM best estimate reserves show that Swiss Re's US GAAP L&H reserves are conservative with significant margin to emerge over time



- Under EVM, the full value of expected profits are recognised upfront; this is represented in the chart by the negative reserves at inception
- Future assumptions are regularly re-assessed for EVM
- The conservatism in the US GAAP reserves is gradually released into reported earnings – this difference is called GAAP margin
- Swiss Re uses EVM as it shows the true economic value of a transaction – indicating the future US GAAP earnings potential (before allowance for taxes and capital costs)

¹ Projected reserves = Present value of claims – Present value of premiums

More than USD 20bn L&H margin within Swiss Re's US GAAP reserves

As of 31 December 2017, USD billions	Life & Health Reinsurance	Life Capital	Total L&H
US GAAP shareholders' equity	8.2	7.1	15.3
Discounting	-0.3	-4.2	-4.5
Investments and debt	-2.3	0.0	-2.3
Reserving basis			0.0
GAAP margins	17.3	3.3	20.6
Other	0.1	-0.5	-0.4
Recognition differences	0.0	-0.5	-0.5
Goodwill and other intangibles	-1.9	-0.2	-2.1
Taxes	-0.9	0.6	-0.3
Capital costs	-7.1	-1.6	-8.7
Other	0.0	0.0	0.0
Total EVM valuation adjustments	4.9	-3.1	1.8
Economic net worth	13.1	4.0	17.1

- US GAAP margin has increased from USD 13.8bn at year end 2012 to USD 20.6bn at year end 2017
- The margin is diversified across geography and product lines
- Significantly more margin in L&H Reinsurance than in Life Capital despite higher reserves in the latter

Source: Swiss Re Financial Report 2017, page 63

EVM sensitivities demonstrate resilience of Swiss Re's L&H reserves to changes in assumptions

Change in economic net worth as of 31.12.2017, USD billions	Life & Health Reinsurance	Life Capital
Reduce lapse rates by 10% (eg from 8.0% to 7.2%)	0.1	0.1
Mortality and morbidity rates reduced by 5%:		
Mortality	2.8	0.1
Longevity	-0.4	-0.1
Morbidity	0.6	0.0
Remove all allowance for future mortality improvement:		
Mortality	-8.0	-0.3
Longevity	1.0	0.3
Increase future mortality improvement assumption by 100bps p.a.:		
Mortality	5.9	0.2
Longevity	-1.1	-0.3

- The margin in the L&H reserves may be higher or lower depending on the eventual outcome of mortality, morbidity and lapse rates
- Even with no mortality improvements there would be positive margin emerging in future

Source: <http://reports.swissre.com/2017/financial-report/evm/evm-sensitivities-online-only-content.html>

Swiss Re is strongly reserved

- Swiss Re's reserving approach ensures best estimate and transparent assessment of insurance liabilities
- Swiss Re's reserving approach is not a way of managing capital or creating artificially high reserve buffers
- Despite significant reserve releases, the strength in P&C reserves remained strong and even increased between 2011 and 2017
- US GAAP L&H reserves margin amounts to USD 20.6bn at year-end 2017

P&C reserves
consistently in
60th to 80th
percentile

USD 20.6bn
US GAAP margin
in L&H reserves

Robust
governance
ensures strong
reserve
adequacy



Cautionary note on forward-looking statements

Certain statements and illustrations contained herein are forward-looking. These statements (including as to plans, objectives, targets, and trends) and illustrations provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to a historical fact or current fact.

Forward-looking statements typically are identified by words or phrases such as “anticipate”, “assume”, “believe”, “continue”, “estimate”, “expect”, “foresee”, “intend”, “may increase”, “may fluctuate” and similar expressions, or by future or conditional verbs such as “will”, “should”, “would” and “could”. These forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause the Group’s actual results of operations, financial condition, solvency ratios, capital or liquidity positions or prospects to be materially different from any future results of operations, financial condition, solvency ratios, capital or liquidity positions or prospects expressed or implied by such statements or cause Swiss Re to not achieve its published targets. Such factors include, among others:

- the frequency, severity and development of insured claim events, particularly natural catastrophes, man-made disasters, pandemics, acts of terrorism and acts of war;
- mortality, morbidity and longevity experience;
- the cyclical nature of the insurance and reinsurance sectors;
- instability affecting the global financial system;
- deterioration in global economic conditions;
- the effect of market conditions, including the global equity and credit markets, and the level and volatility of equity prices, interest rates, credit spreads, currency values and other market indices, on the Group’s investment assets;
- changes in the Group’s investment result as a result of changes in the Group’s investment policy or the changed composition of the Group’s investment assets, and the impact of the timing of any such changes relative to changes in market conditions;
- the Group’s ability to maintain sufficient liquidity and access to capital markets, including sufficient liquidity to cover potential recapture of reinsurance agreements, early calls of debt or debt-like arrangements and collateral calls due to actual or perceived deterioration of the Group’s financial strength or otherwise;
- any inability to realize amounts on sales of securities on the Group’s balance sheet equivalent to their values recorded for accounting purposes;
- changes in legislation and regulation, and the interpretations thereof by regulators and courts, affecting us or the Group’s ceding companies, including as a result of shifts away from multilateral approaches to regulation of global operations;
- the outcome of tax audits, the ability to realize tax loss carryforwards, the ability to realize deferred tax assets (including by reason of the mix of earnings in a jurisdiction or deemed change of control), which could negatively impact future earnings, and the overall impact of changes in tax regimes on business models;
- failure of the Group’s hedging arrangements to be effective;
- the lowering or loss of one of the financial strength or other ratings of one or more Swiss Re companies, and developments adversely affecting the Group’s ability to achieve improved ratings;
- uncertainties in estimating reserves;
- policy renewal and lapse rates;
- uncertainties in estimating future claims for purposes of financial reporting, particularly with respect to large natural catastrophes and certain large man-made losses, as significant uncertainties may be involved in estimating losses from such events and preliminary estimates may be subject to change as new information becomes available;
- extraordinary events affecting the Group’s clients and other counterparties, such as bankruptcies, liquidations and other credit-related events;
- legal actions or regulatory investigations or actions, including those in respect of industry requirements or business conduct rules of general applicability;
- changes in accounting standards;
- significant investments, acquisitions or dispositions, and any delays, unexpected costs, lower-than expected benefits, or other issues experienced in connection with any such transactions;
- changing levels of competition, including from new entrants into the market; and
- operational factors, including the efficacy of risk management and other internal procedures in managing the foregoing risks and the ability to manage cybersecurity risks.

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Corporate calendar & contacts

Corporate calendar

2018

20 April	154th Annual General Meeting	Zurich
4 May	First Quarter 2018 Key Financial Data	Conference call
3 August	Half-Year 2018 Results	Conference call
1 November	Nine Months 2018 Key Financial Data	Conference call

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