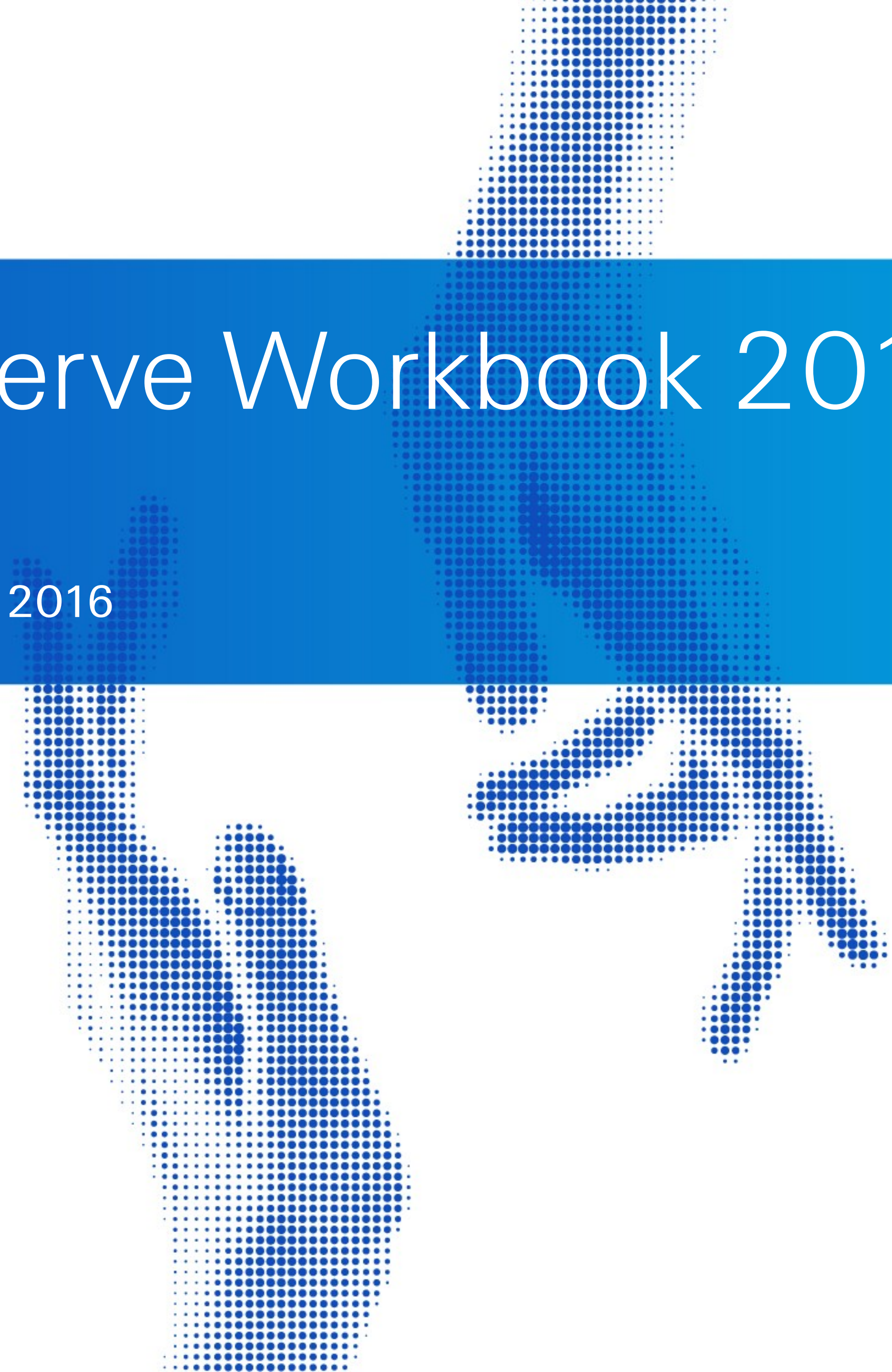
Swiss Re



P&C Reserve Workbook 2016

As of 31 December 2016

Disclaimer

The 2016 P&C Reserve Workbook (the "Workbook") is provided by Swiss Re for informational purposes only. The information in the Workbook is as at 31 December 2016. Swiss Re is under no obligation to, and does not intend to, update or revise any of the information included in this Workbook or referred to in this Workbook, whether as a result of new information, future events or other developments, even when any such new information, events or developments have been reflected in any report or other document published by Swiss Re or any of its business units. Although the information in this Workbook bears directly on estimating loss reserves, it is not the only basis used by Swiss Re to establish its reserves.

Please see the cautionary note on forward-looking statements on slide 16 of this Workbook and the notes on risk factors beginning on page 308 of Swiss Re's 2016 Financial Report, which are incorporated herein by reference.

2016 P&C reserving highlights

Highlights of 2016 P&C prior years claims development by line of business

P&C total (USD 941m release)

In 2016, claims development on prior years was driven by favourable experience on most lines of business. Property includes adverse development on the New Zealand earthquakes that occurred in 2010. Casualty showed a consistent favourable development on older underwriting years, while the more recent years were in some cases strengthened on a prudential basis in view of the unfavourable prevailing market conditions. Reserve releases continued within specialty.

Swiss Re reserve releases in USDm by financial year

Property (USD 335m release)

Favourable claims development across most of the underwriting years with the main exception being New Zealand earthquakes affecting underwriting years 2010 and 2011, which continued to deteriorate.

Casualty (USD 249m release)

Liability showed a consistent level of releases on older underwriting years, which more than offset increases for US asbestos and environmental losses. Following large commutation and positive claim experience, accident and health claims contributed to the overall positive claims development on casualty. This was partially offset by the motor line of business, which experienced adverse trends in the US and in Europe on most recent underwriting years.

Specialty lines (USD 357m release)

Similarly to last year, specialty lines showed a favourable trend. Experience has been significantly below what was expected, particularly for engineering and marine, enabling reserves to be released. However, two large claims impacted credit & surety on underwriting year 2015.

Underwriting and accident year triangles disclosure 2016

- From year-end 2016 onwards, following the new US GAAP disclosure requirements for short-duration contracts, Swiss Re publishes **loss development triangles on an accident year basis** in its 2016 Financial Report, from page 206 to 214
- **Swiss Re continues** its historical practice of **disclosing loss ratio development triangles on an underwriting year basis**
- Because the underwriting year triangles are **the basis for deriving best estimate reserves**, Swiss Re believes this information **provides a more useful view** on the loss development
- **Loss ratio development triangles on an underwriting year basis** are available on Swiss Re's website. The triangles should be read in conjunction with this Workbook
- Further details on differences between the two sets of triangles are shown on the next page

Underwriting and accident year triangles serve different purposes

	Underwriting year (UY) triangle	Accident year (AY) triangle
Definition	Underwriting year presents claim information according to the calendar year in which the original policy or reinsurance contract was incepted	Accident year presents claim information according to 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 *latest* Incurred But Not Reported (IBNR)	**Paid and incurred** (i.e. *reported plus IBNR*) **claims triangles**
Scope	Traditional P&C business	Traditional and non-traditional business
Purpose	• **Project paid or reported claims to ultimate loss** and are the basis for deriving the best estimate reserves • **Used internally to project to ultimate loss**	• Give an indication on **how the ultimate loss** (i.e. *reported plus IBNR*) **developed over time** • Constructed[1] in order to comply with US GAAP **reporting requirement**
Number of years disclosed	16 underwriting years	10 accident years for Reinsurance and 5 accident years for Corporate Solutions

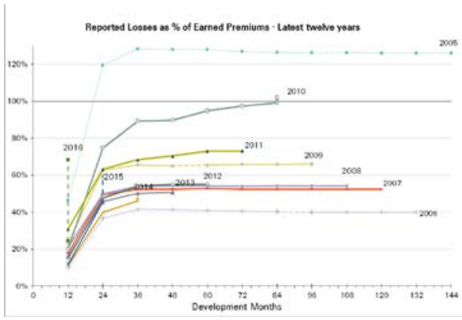
[1] Although accident year reporting is fairly standard across the insurance market, it is not always well-defined for reinsurers, since the reinsurer depends on information provided by its cedants which often does not include details on individual claims. For these reasons, accident year information requires approximation

How to read information from underwriting and accident year triangles?

Underwriting year triangle

Underwriting Year	Earned Premium in USD m	Reported Loss Ratios per Development Month															
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
2001	3'470	39%	95%	103%	105%	105%	106%	106%	105%	106%	105%	105%	105%	105%	104%	104%	104%
2002	3'657	26%	55%	58%	57%	57%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	
2003	3'646	22%	39%	47%	48%	47%	47%	47%	47%	46%	46%	46%	46%	46%	46%		
2004	3'743	33%	67%	77%	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%			
2005	3'843	46%	119%	128%	128%	128%	127%	126%	126%	126%	126%	126%	126%				
2006	3'548	10%	37%	41%	41%	41%	40%	40%	40%	40%	40%	40%					
2007	3'697	18%	49%	52%	52%	53%	52%	52%	52%	52%	52%						
2008	3'832	21%	50%	54%	54%	54%	54%	54%	54%	54%							
2009	4'021	23%	63%	66%	65%	65%	66%	66%	66%								
2010	3'844	20%	75%	89%	90%	95%	97%	99%									
2011	4'724	31%	63%	68%	70%	73%	73%										
2012	6'078	15%	48%	54%	55%	55%											
2013	5'286	16%	46%	50%	51%												
2014	4'831	11%	40%	46%													
2015	4'911	12%	45%														
2016	3'640	24%															

Underwriting Year	Ult Loss Ratio	Ultimate Claims split by: Paid Losses	Case Reserves	IBNR
2001	104%	104%	0%	0%
2002	56%	55%	0%	0%
2003	46%	46%	0%	0%
2004	76%	75%	0%	0%
2005	126%	125%	1%	0%
2006	40%	40%	0%	0%
2007	52%	51%	1%	0%
2008	54%	53%	1%	0%
2009	66%	65%	1%	0%
2010	102%	94%	5%	3%
2011	73%	70%	3%	0%
2012	55%	53%	2%	0%
2013	51%	46%	4%	0%
2014	48%	38%	8%	2%
2015	59%	27%	19%	14%
2016	68%	7%	18%	44%

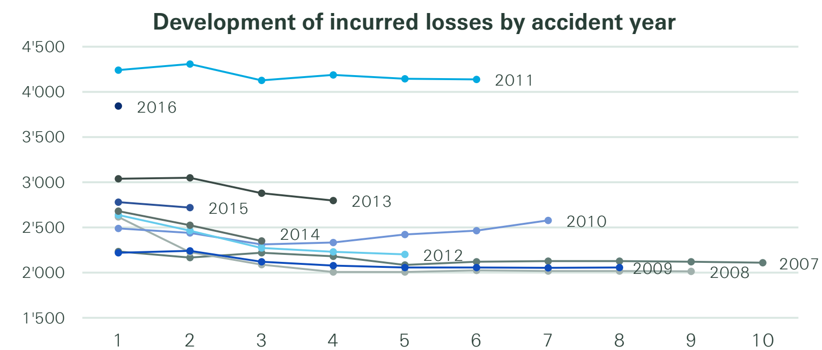


The above shows Swiss Re **Property Reinsurance** figures and chart as an example of the underwriting year triangles disclosed in the Loss Ratio Development Triangles

Accident year triangle

Property Reinsurance: Incurred claims and allocated claim adjustment expenses, net of reinsurance

USD millions / Accident year	Reporting year 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Thereof IBNR
2007	2'233	2'167	2'219	2'181	2'087	2'121	2'129	2'127	2'122	2'110	-7
2008		2'617	2'228	2'090	2'008	2'006	2'026	2'017	2'017	2'014	-14
2009			2'221	2'241	2'122	2'079	2'059	2'056	2'053	2'056	1
2010				2'489	2'439	2'314	2'334	2'423	2'466	2'577	-5
2011					4'240	4'308	4'126	4'187	4'143	4'139	123
2012						2'637	2'466	2'273	2'231	2'202	14
2013							3'038	3'050	2'880	2'799	-3
2014								2'681	2'525	2'351	57
2015	RSI								2'781	2'720	405
2016										3'842	2'044
Total										**26'810**	**2'615**

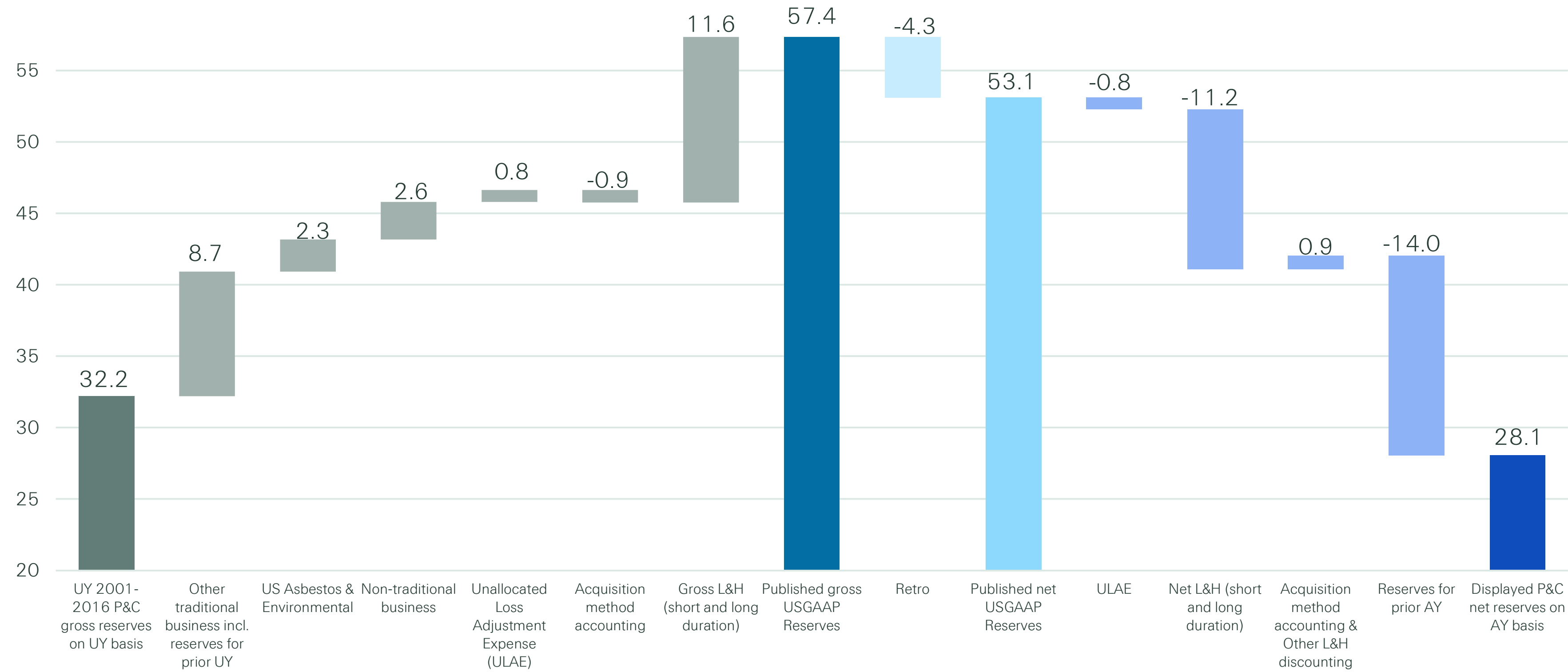


The above triangle shows **P&C Reinsurance – Property** as an example of the accident year triangles disclosed in the Financial Report; the chart is an illustration of the figures shown above

- **Underwriting year triangle is the basis to determine the best estimate ultimate claims**. The Property Reinsurance underwriting year 2010, for example, is impacted by New Zealand earthquake
- **Accident year triangle can give an indication on how Swiss Re's initial estimation has developed historically.** The property triangle, for example, shows positive development on most recent years. The negative development on accident year 2010 in calendar year 2016 was driven by a deterioration in loss estimates for the 2010 New Zealand earthquake

Reserves scope for underwriting and accident year triangles

P&C gross reserves displayed in the **underwriting year** triangles to **gross US GAAP reserves** as published in Note 5 in the Financial Report	**P&C and L&H reserves** as published in the Financial Report	**Net US GAAP reserves** to net P&C reserves displayed in the **accident year** triangles



- Gross and net US GAAP reserves can be found on Note 5 on p. 199 in Swiss Re's 2016 Financial Report. The gross reserves on underwriting year (UY) basis are displayed for UY 2001 to 2016 in the Loss Ratio Development Triangles xls file
- The net reserves on accident year (AY) basis are displayed for AY 2007 to 2016 for Reinsurance and for AY 2012 to 2016 for Corporate Solutions on pages 206 to 214 in Swiss Re's 2016 Financial Report

Reserving at Swiss Re

Swiss Re's reserving process provides transparency on best estimate of ultimate claims

- Reserves at inception of business are **determined at the time of writing** the business, based on the pricing loss ratio. If business performs exactly as priced there will be no run-off profit (or loss). Swiss Re does not add margins to pricing loss ratios unless they are assessed as deficient
- Initial loss estimates are gradually replaced by **actual loss experience**. Ultimate loss estimates are updated quarterly to take into account the latest claims development information as well as recent trends and any additional information
- Swiss Re uses actuarial techniques such as the Benktander or Bornhuetter/Ferguson (BF) methods, which use a **weighted average** of the initial loss estimate and a projected ultimate loss estimate, based on emerging claims experience
- Actual losses are likely to differ from initial estimates, producing **reserve development** (favourable or adverse). This can have **multiple causes** including bias in the initial loss ratios, changing assumptions e.g. inflation, normal claims volatility or commutations and premium development
- Areas where actuarial judgment is used are described on slide 14
- The reserving actuary estimates the ultimate value of claims. However, only the earned portion of the ultimate value is reported on a US GAAP basis. This earned portion is derived following standard accounting principles

The key purpose of reserving is to estimate the ultimate value of claims, i.e. the amount that will be paid to fulfil all contractual obligations

Swiss Re has strong governance around the setting of reserves

- The reserving process is performed quarterly by local reserving teams for each business unit and region. Each portfolio is fully reviewed at least once a year. In a quarter during which no full review is carried out, Swiss Re conducts an analysis to compare actual with expected reported claims movements
- The Regional Reserving Committees and Group Reserving Committee review the assumption changes proposed by local teams and sign off on the reserves

Local Reserving Actuaries

- Set assumptions
- Produce results with local control process (e.g. peer reviews)
- Discuss results with local management and Group

Regional Reserving Committees (RRC)

- Approval bodies for the setting of actuarial assumptions and reserves
- 4 voting members per committee from senior management representing the main functions

Group Reserving Committee (GRC)

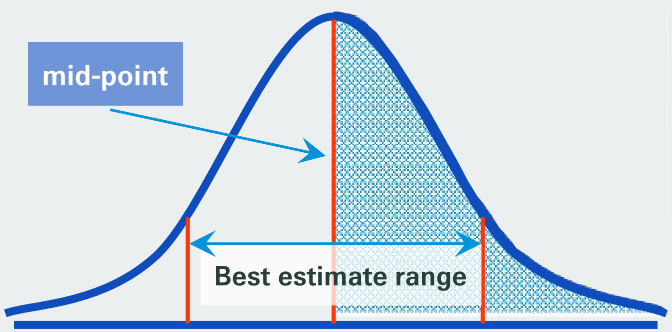
- Oversees the decisions of the RRC
- Approves certain Group level assumptions
- 4 voting members from the Group Executive Committee

- In addition, a second line of defense control is carried out on a quarterly basis by an actuarial control team. This team performs an independent reserve review on a higher level of aggregation which provides assurance to the Board of Directors on the overall adequacy of the reserves

Swiss Re's reserving strength is demonstrated by being in the upper half of a range of best estimate

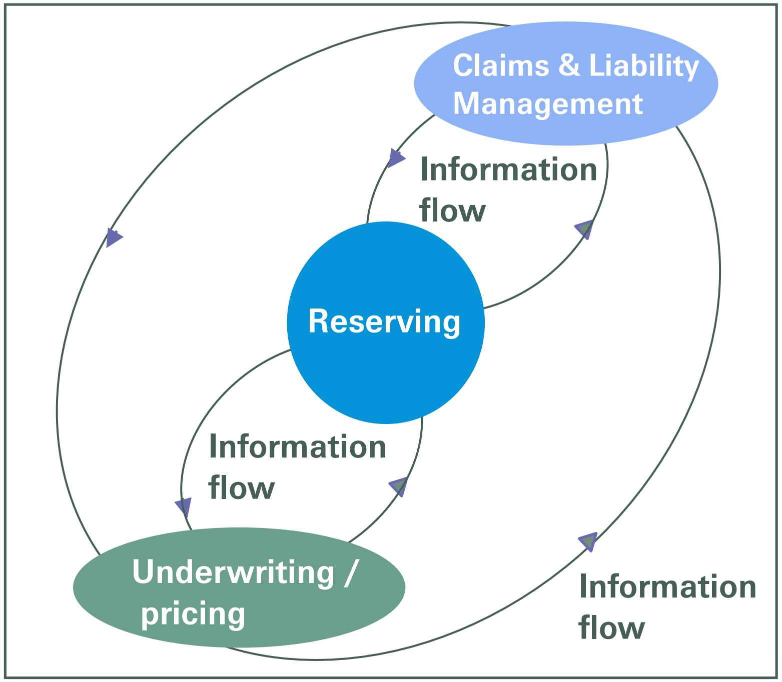
Distribution of possible reserves

Illustrative



- Swiss Re's reserving strength is independently assessed every quarter by the actuarial control team. This team determines a range of reasonable "best estimate" reserves at a higher level of aggregation than used locally
- The reserves booked by management are then positioned on that range to determine the overall percentile (or position) within the range of best estimate
- Such a review has been conducted at Swiss Re for more than 15 years, with booked reserves typically between the 60th and 80th percentile

Reserving uses additional information via a strong feedback loop with pricing teams



- Qualitative information feeds into the reserving process via a constant dialogue between claims management teams and underwriting/pricing functions
- Reserving detects deviations between pricing and ultimate loss ratios, while underwriting and client teams provide intelligence on market conditions
- Such feedback loops allow Swiss Re to both update reserves and adjust pricing, improving the quality of business written; pricing errors are less likely to accumulate over time

Avoiding artificially high reserve buffers allows for a timely recognition of profits, thereby providing transparency to stakeholders

Reserving approach varies by type of business

- For **traditional reinsurance and direct insurance**, which represent the majority of the business written by Swiss Re, the best estimate reserves are calculated using standard actuarial methods
- Reserving for **non-traditional business**, such as retroactive deals or deposit accounted deals, is carried out on a deal by deal basis according to each deal's specifications
- 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 claims subject to periodic payments depending on survival, such as **workers' compensation or motor liability**, is performed separately and depends on the level of information provided by our cedants
- Reserving for **asbestos and environmental** (A&E) claims is based on benchmarks which are reassessed annually
- **Loss triangles** are an important source of information to estimate reserves. Other information such as current market conditions, changes in portfolio composition, and additional expert judgment is also used
- New business is usually reserved initially at the pricing level, which means that the **claims inflation** assumptions made in pricing are included in the opening reserves. For pricing, forecasts for the relevant inflation like medical cost escalation, wage inflation and social cost escalation are taken into account. As the business ages and the experience emerges, the pricing assumptions are increasingly replaced by projections based on historical experience, depending on the selected reserving method and the underlying characteristics of the business. Any change in relevant inflation rates will impact claims experience and be reflected in reserves

Depending on the nature of the business analysed, actuaries not only use triangles to estimate the liabilities but also individual losses or benchmark information

Corporate calendar & contacts

Corporate calendar

2017

21 April	**153rd Annual General Meeting**	Zurich
4 May	**First Quarter 2017 Results**	Conference call
4 August	**Second Quarter 2017 Results**	Conference call
2 November	**Third Quarter 2017 Results**	Conference call

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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:

- further instability affecting the global financial system and developments related thereto;
- further deterioration in global economic 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;
- 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 its investment policy or the changed composition of its investment assets, and the impact of the timing of any such changes relative to changes in market conditions;
- uncertainties in valuing credit default swaps and other credit-related instruments;
- possible inability to realise amounts on sales of securities on the Group's balance sheet equivalent to their mark-to-market values recorded for accounting purposes;
- the outcome of tax audits, the ability to realise tax loss carry forwards and the ability to realise 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;
- the possibility that the Group's hedging arrangements may not 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;
- the cyclicality of the reinsurance industry;
- uncertainties in estimating reserves;
- uncertainties in estimating future claims for purposes of financial reporting, particularly with respect to large natural catastrophes, 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;
- the frequency, severity and development of insured claim events;
- acts of terrorism and acts of war;
- mortality, morbidity and longevity experience;
- policy renewal and lapse rates;
- extraordinary events affecting the Group's clients and other counterparties, such as bankruptcies, liquidations and other credit-related events;
- current, pending and future legislation and regulation affecting the Group or its ceding companies and the interpretation of legislation or regulations;
- 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 or other issues experienced in connection with any such transactions;
- changing levels of competition; and
- operational factors, including the efficacy of risk management and other internal procedures in managing the foregoing risks.

These factors are not exhaustive. Swiss Re operates in a continually changing environment and new risks emerge continually. Readers are cautioned not to place undue reliance on forward-looking statements. Swiss Re undertakes no obligation to publicly revise or update any forward-looking statements, whether as a result of new information, future events or otherwise.

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