



Swiss Re

Post-level term

ACSW Spring meeting – June 20, 2013



SWISS RE
150
YEARS



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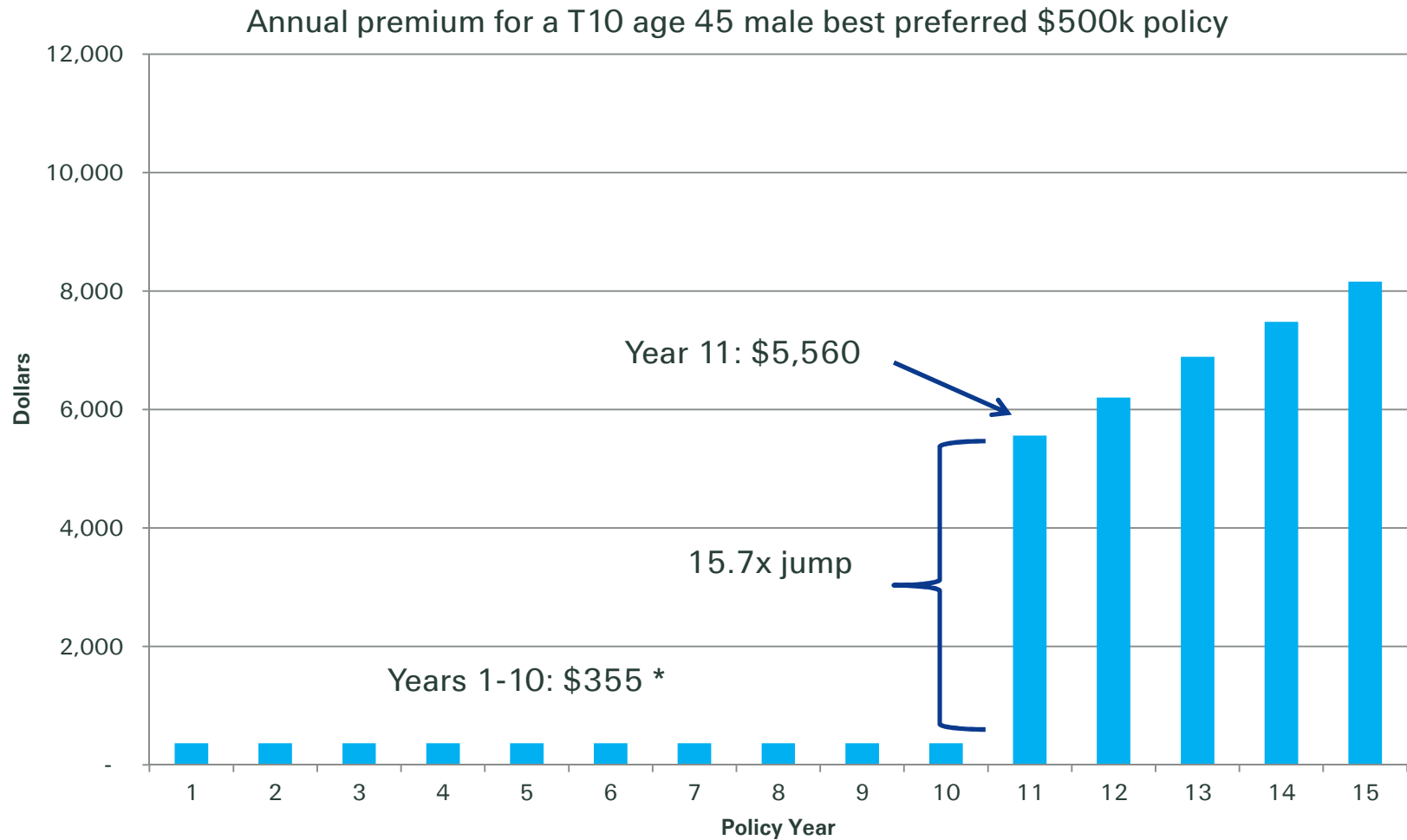
- Background
- PLT experience studies & assumptions
- Considerations in managing PLT premium rates



Background

- Industry
- Swiss Re

T10 example
 Post level term premium jump



Background Industry view

- Level premium term insurance is the most popular pure mortality protection product sold in the US
 - Roughly 75% of individual life face amount was issued on term in 2012 compared to 50% in 1995*
- Many direct insurers have historically made extensive use of reinsurance
- High post-level premiums used for a variety of reasons
 - Pre-XXX reserving framework, non-forfeiture rules, lack of post-level experience available, and it is not the primary focus of product
- Level period premium rates have steadily declined over the years, but broadly speaking PLT premium rates have not
 - With the result that magnitude of PLT premium jumps is higher for recently issued policies than for older in force policies

Background

Industry studies/assumptions

- Initial pricing assumptions were based largely on rules of thumb and utilizing methodology that was invented for S&U term
- Very few companies have had material amounts of experience to be able to analyze
- In 2009 the SOA conducted a survey of a large number of companies to understand what assumptions were being used in the industry
- In 2010 the SOA performed a study of post-level term experience including experience on both shock lapse and mortality anti-selection primarily on T10 products
- While both the SOA survey and study are helpful in setting PLT assumptions, they have limited credibility and don't give a full picture of how best to manage post-level term experience

Background Swiss Re

- We have accumulated a very large book of in-force term business so it is a top priority
- For the past 3 years we have focused a significant amount of R&D resources toward accumulating PLT experience and developing more refined modeling and assumption setting
- We believe the value of PLT business can be enhanced with informed, active management of PLT premiums
 - In a way that can be beneficial for various interested parties – policyholders, direct insurers, reinsurers, XXX redundancy financing partners, rating agencies and regulators
 - Our analysis process is ongoing which includes continual monitoring of emerging experience
 - Requires agility to adjust as experience emerges



PLT experience studies & assumptions

Discussion Items

- Shock lapse
- Mortality anti-selection

Comprehensive research, credible results

- Our analysis centers around 3 different studies
 - Swiss Re reinsurance study
 - Swiss Re industry study (including Admin Re[®] data)
 - SOA study
- Analysis focused on areas where we have premium information
- Summary PLT studies statistics (T10 only):

	<u>Swiss Re industry study</u>	<u>Swiss Re reinsured study</u>	<u>SOA study</u>
Companies	8	31	10
Issue years	1990-2002	1990-2002	1989-1999
Exposure years	1995-2012	2007-9/2012	2000-2008
PLT claims	2,246	1,914	382
Dur 10+ lapses	360,357	421,405	87,544

Lapse experience

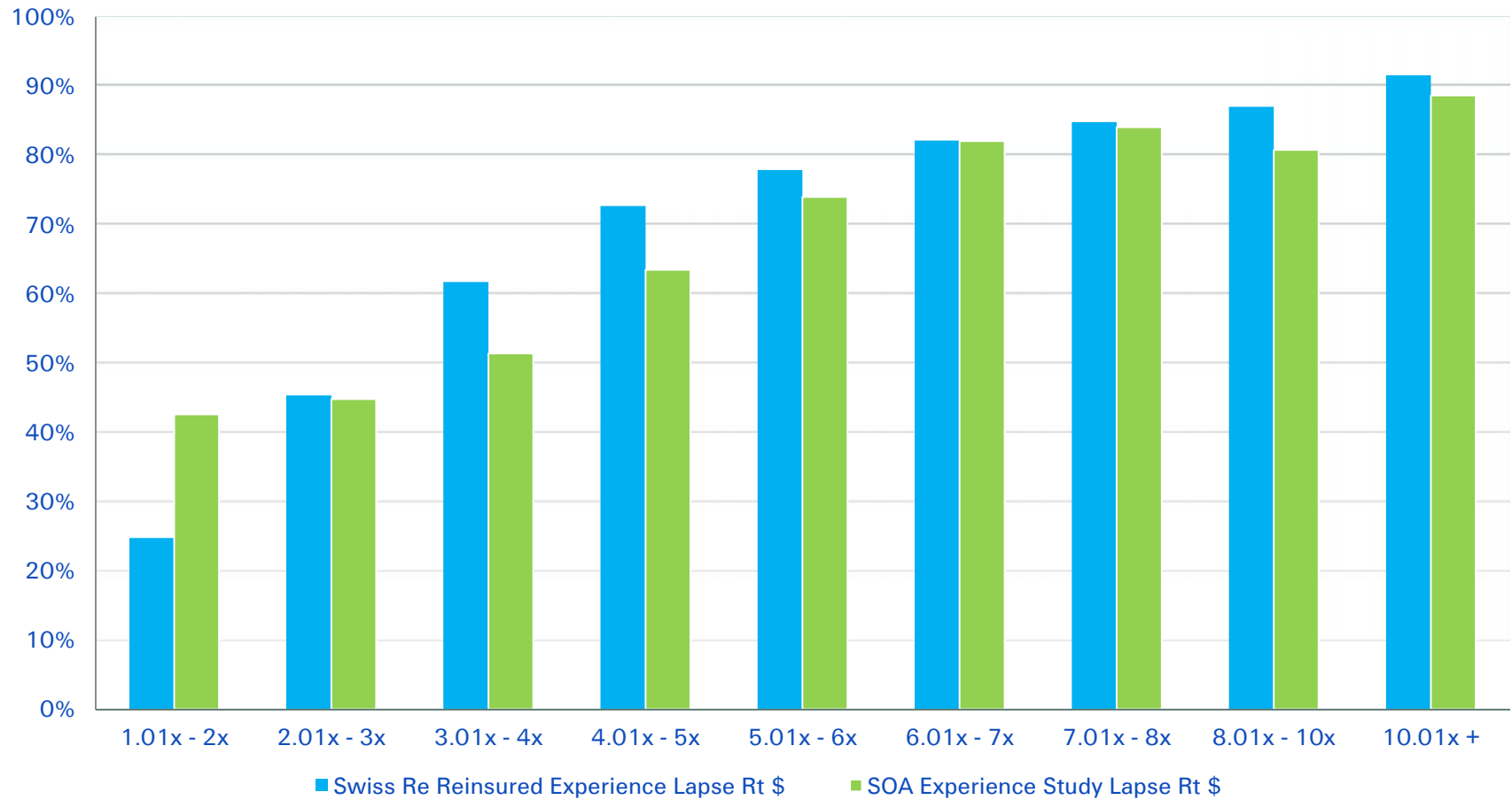
Industry assumptions for current products are too low

		Premium multiple	<5	5-10	>10
Dur 10 experience	Initial shock lapse rates for Swiss Re's Reinsured Study		51% (95k lapses)	83% (175k lapses)	92% (66k lapses)
Dur 10-11 experience	Cumulative lapse rates for Swiss Re's Reinsured Study		71% (129k lapses)	93% (192k lapses)	97.7% (68k lapses)
Current Industry assumptions	Annual lapse rate assumptions for duration 10			Dur 10	Dur 10-11
		Minimum		40%	45%
		20 th percentile		68%	79%
		Median		80%	86%
		80 th percentile		90%	94%
		Maximum		95%	97.5%
Product design	Shift in product design relative to ratio of ultimate premium rates vs. level rates		In-force products standard	In-force products best preferred	Today's products best preferred
				Today's products standard	

Lapse experience

Lapse rates correlate with premium jumps

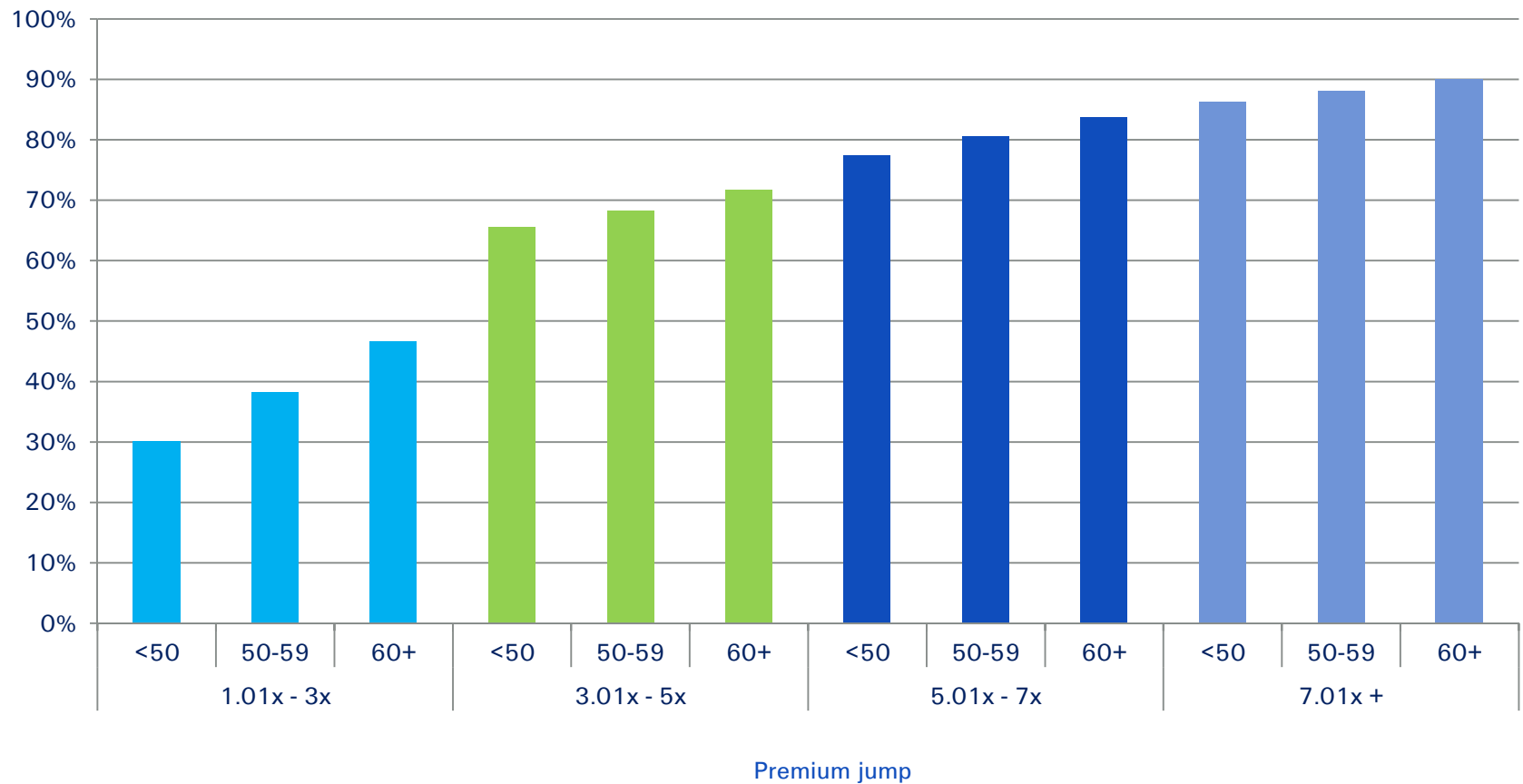
T10 shock lapse rate by premium jump ratio



Lapse experience

Lapses vary by age for a given premium jump

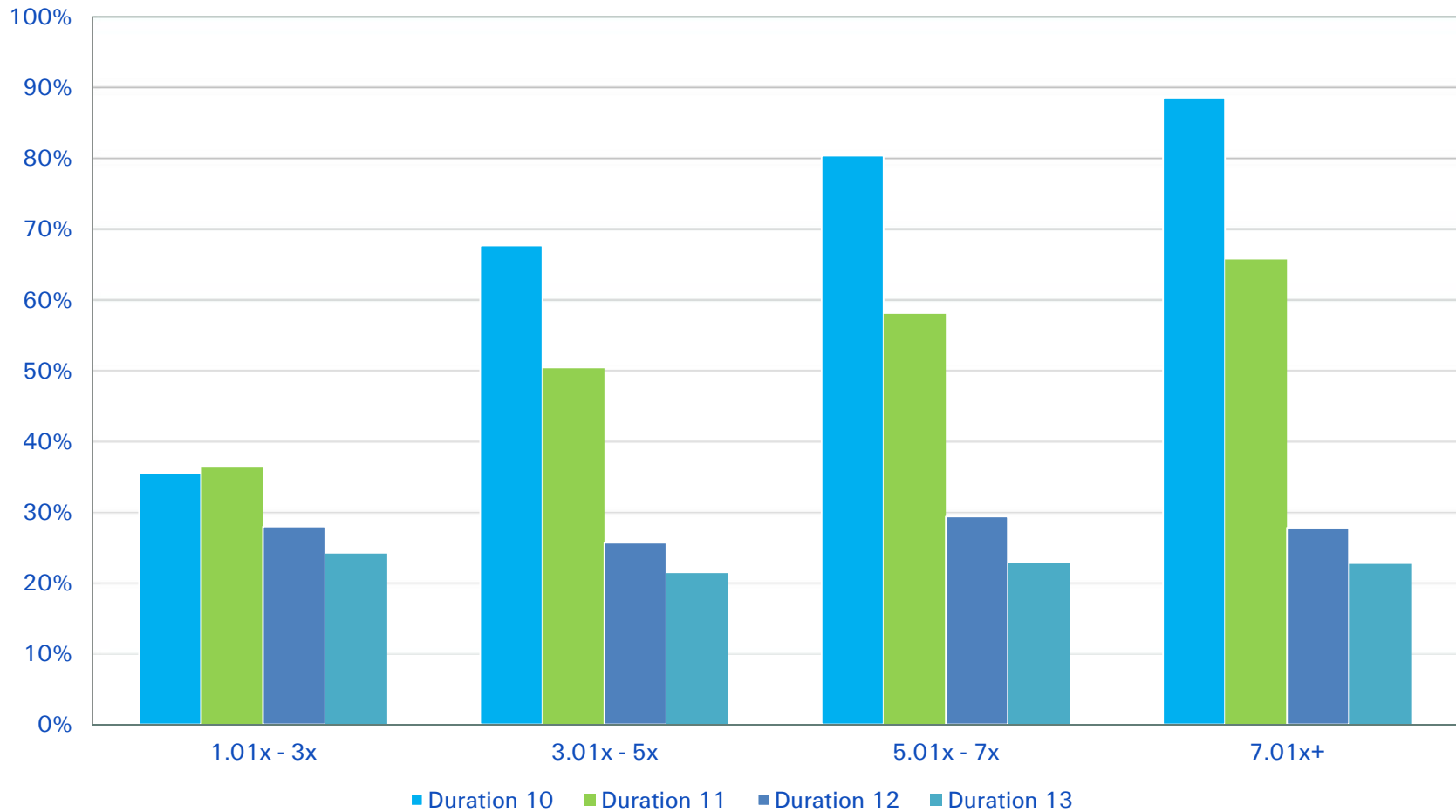
T10 shock lapse rate by premium jump and attained age



Lapse experience

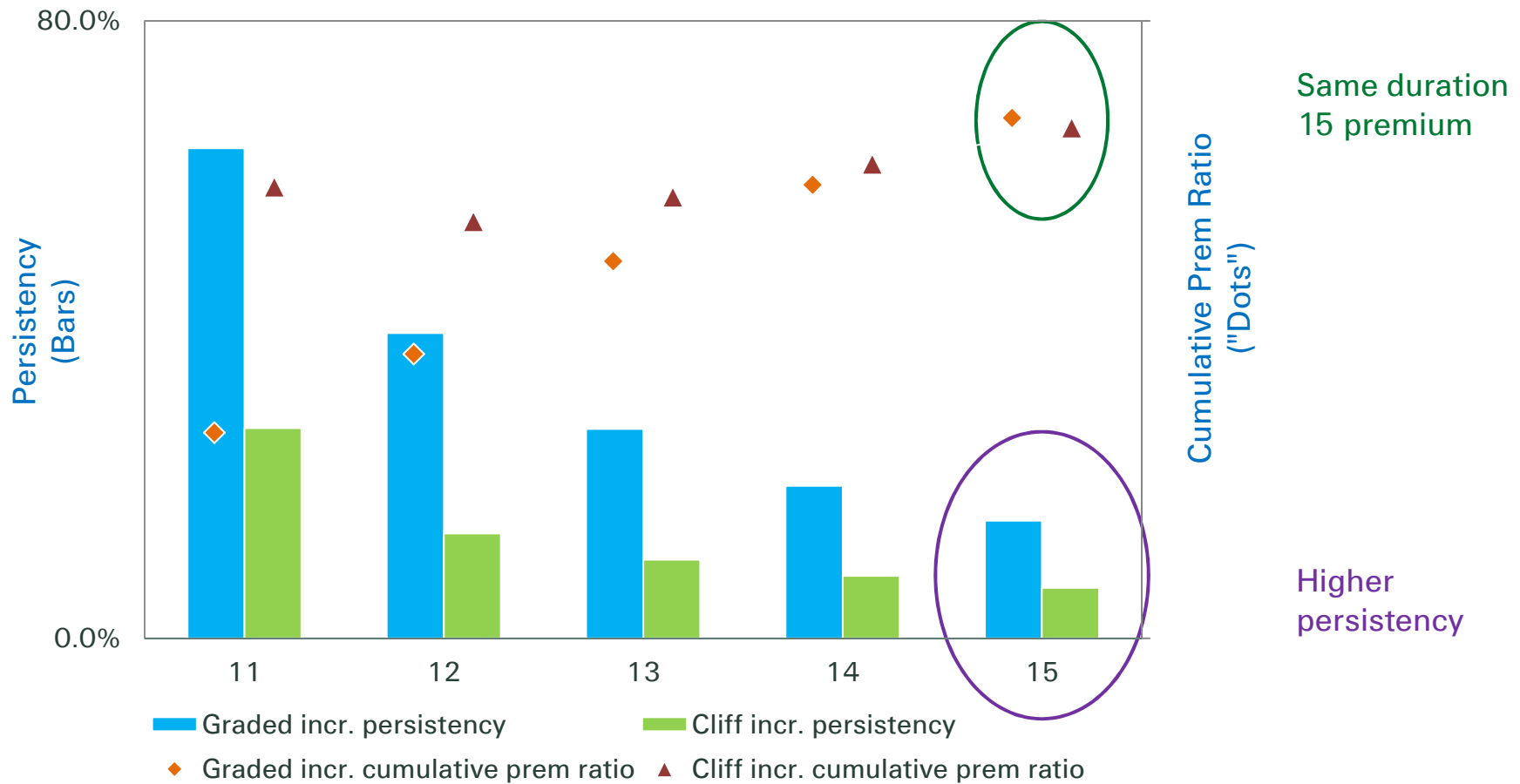
Shock lapses continue after the initial shock

T10 lapse rate by premium jump & duration



Post level term Persistency is path dependent

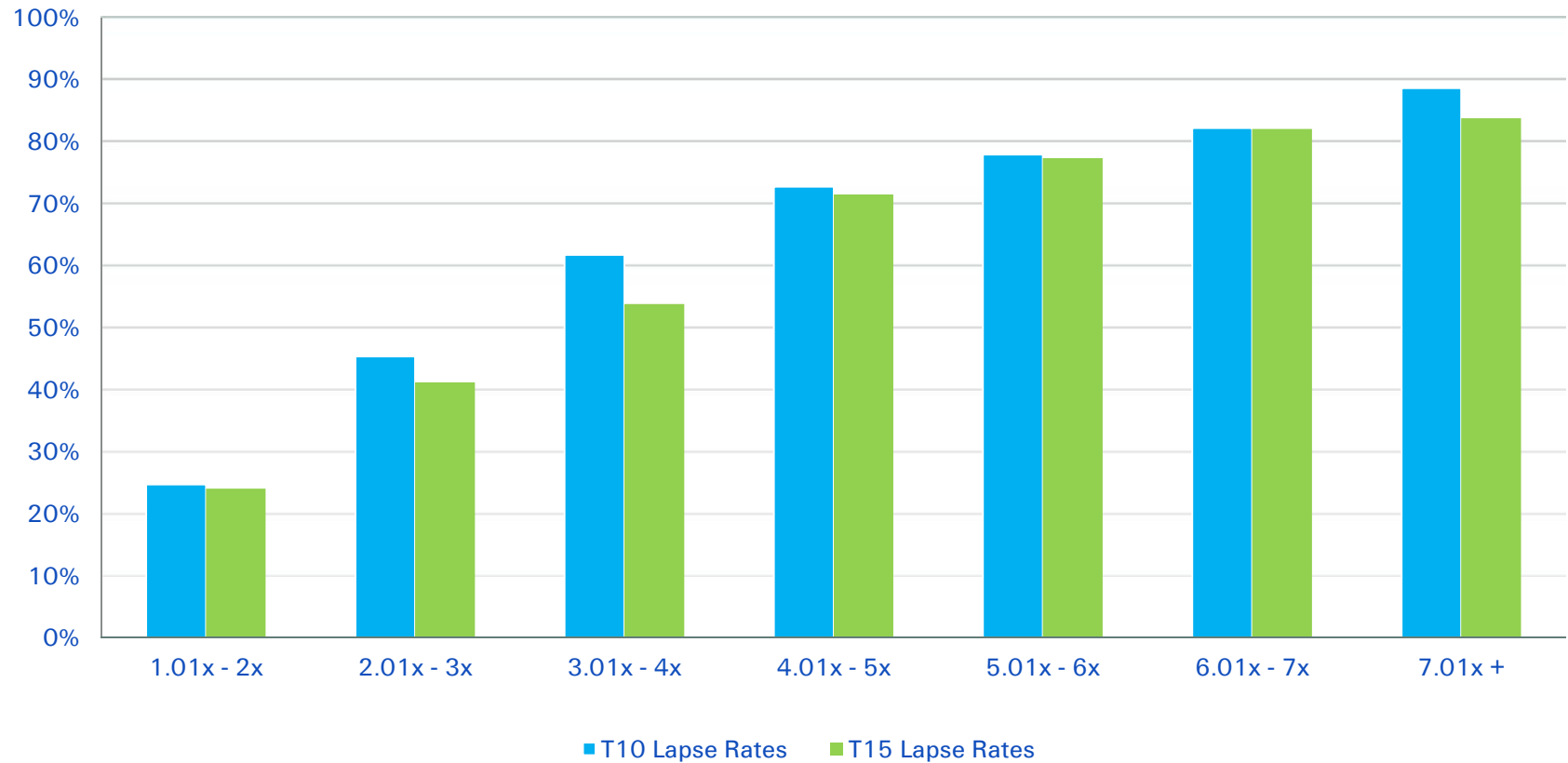
Post level term persistency by duration



Lapse experience

Results similar for 10- and 15-year level premium plans

Comparison of shock lapse rates for T10 & T15 by premium jump



*Note: There is limited experience for T15



Lapse experience

Developing more accurate lapse assumptions

- Our shock lapse assumptions are based on experience from the combination of all three studies
- Our current lapse assumptions are a function of several different variables: current year's premium jump, attained age, plan, cumulative premium jump, and absolute premium levels
- Distribution of lapse within policy year also plays a key role

Mortality experience

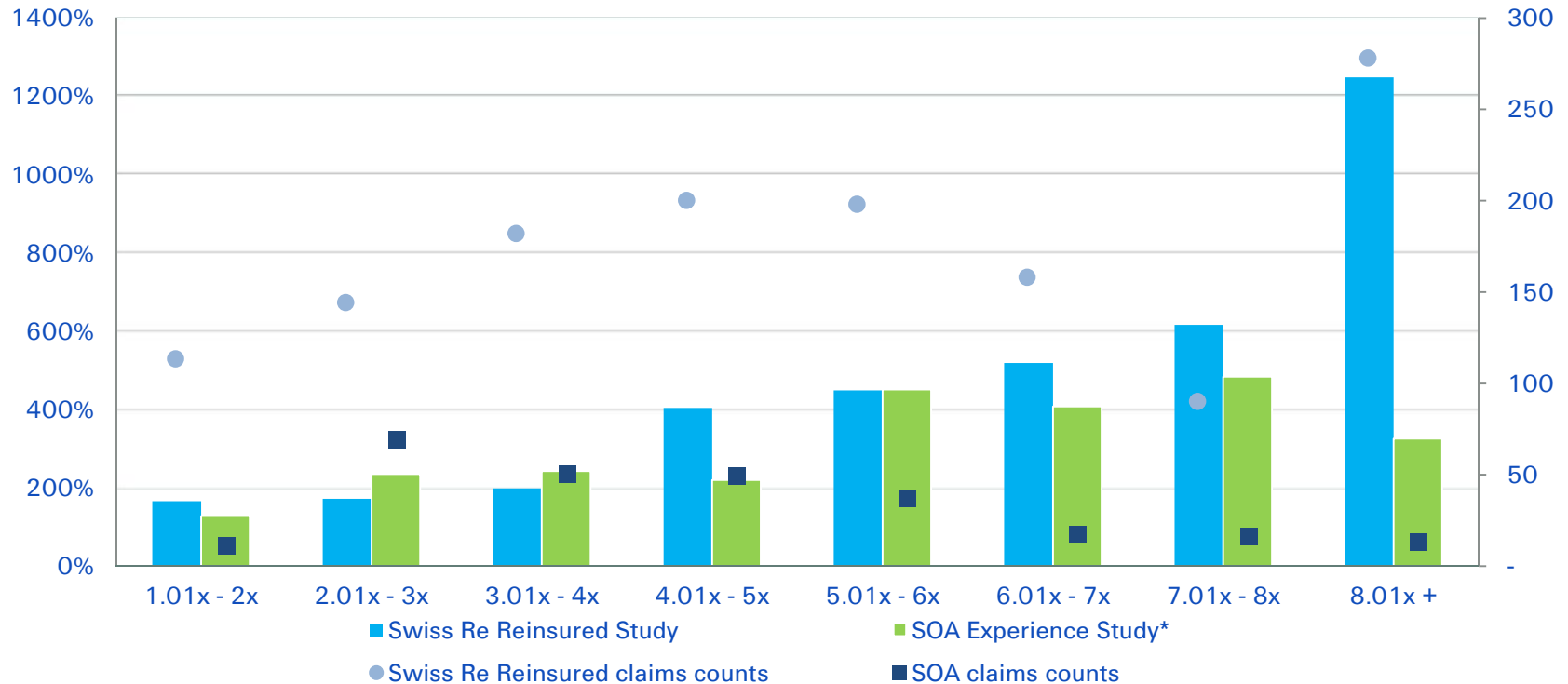
Industry appears to be underestimating mortality deterioration

		Premium multiple	<5	5-10	>10
Historical experience	Mortality A/Es from Swiss Re's Reinsured study duration 11-12 vs. Swiss Re's Base Table		226% (640 claims)	558% (568 claims)	1697% (156 claims)
Current Industry assumptions	Annual mortality deterioration multiple for duration 11 vs. 10				
			Minimum	115%	
			20 th percentile	194%	
			Median	200%	
			80 th percentile	251%	
			Maximum	600%	
Product design	Shift in product design relative to ratio of ultimate premium rates vs. level rates		In-force products standard	Today's products standard	In-force products best preferred
					Today's products best preferred

Mortality experience

Mortality increases with larger premium jumps

Post Level Mortality (Dur 11-12) as % of Swiss Re's Base Tables



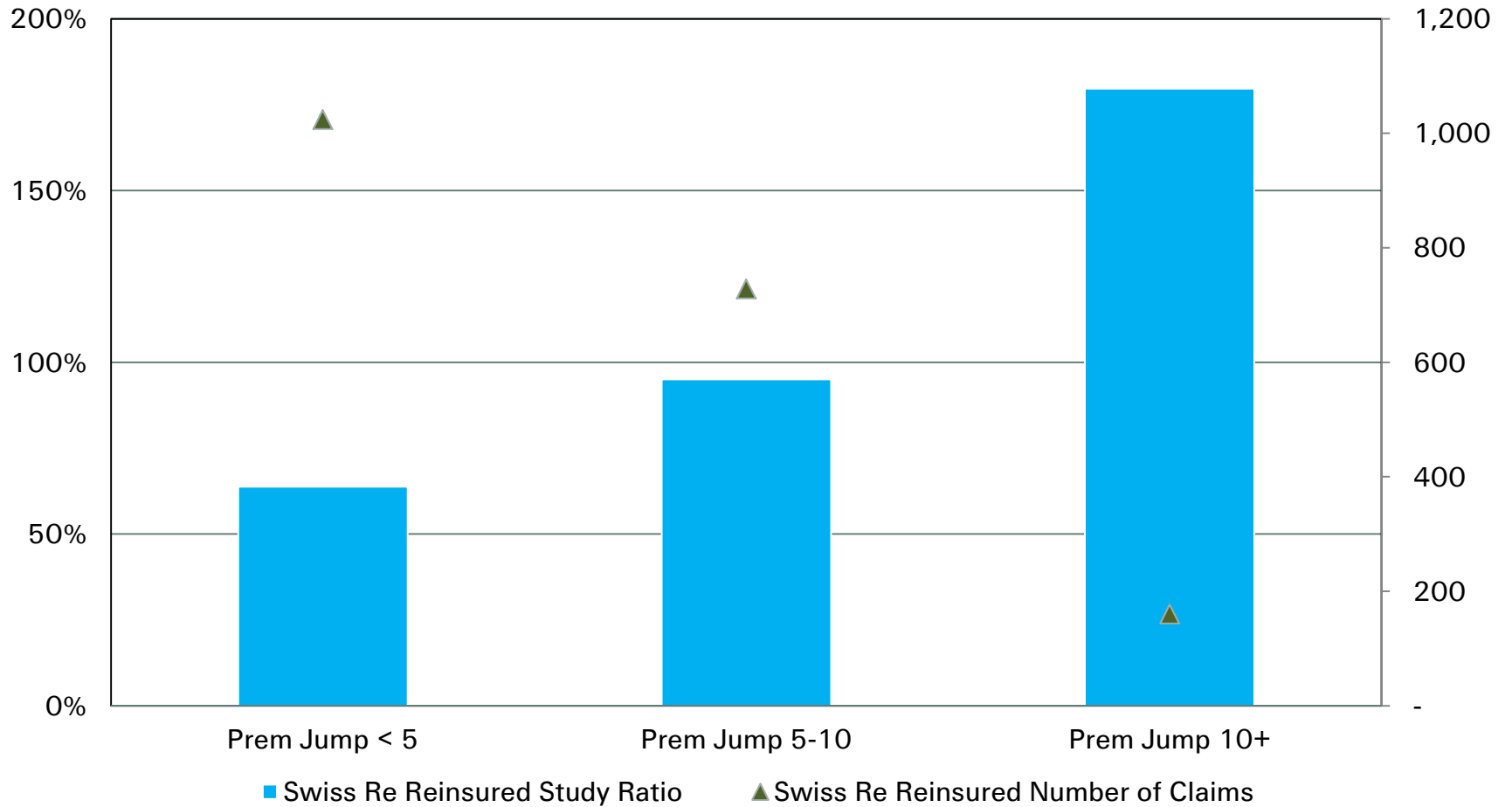
* SOA by amount results were estimated based on results by band – Swiss Re Qs were also estimated off other studies

- Mortality patterns largely follow results seen in the lapse analysis (higher lapses = higher mortality)
- Given the limited number of claims there is significant volatility, however there is a clear trend
- Level period mortality = 100% of Swiss Re's Base Table

Post level term

Loss ratio increases by premium jump

Ratio of Death Benefits to Direct Premiums



Additional considerations

Lapse skewness & grace period example

■ Base assumptions

- Becker-Kitsos deterioration (similar to Dukes-McDonald)
- Shock lapse rate = 80%
- Base Q per 1000 (point-in-scale) = 1.0
- Newly select Q per 1000 = 0.3
- Effectiveness factor = 80%
- Grace period = 60 days

■ Results

- Duration 11 Q with standard calculation = 3.0
- Shock lapse calculated from middle of policy year = 88%
- Duration 11 Q with adjusted lapse calculation = 4.6
- Duration 11 Q with adjusted lapse calculation & grace period adjustment = 5.1



Considerations in managing PLT premium rates

Post level term

Managing in force PLT premium rates

■ Observations

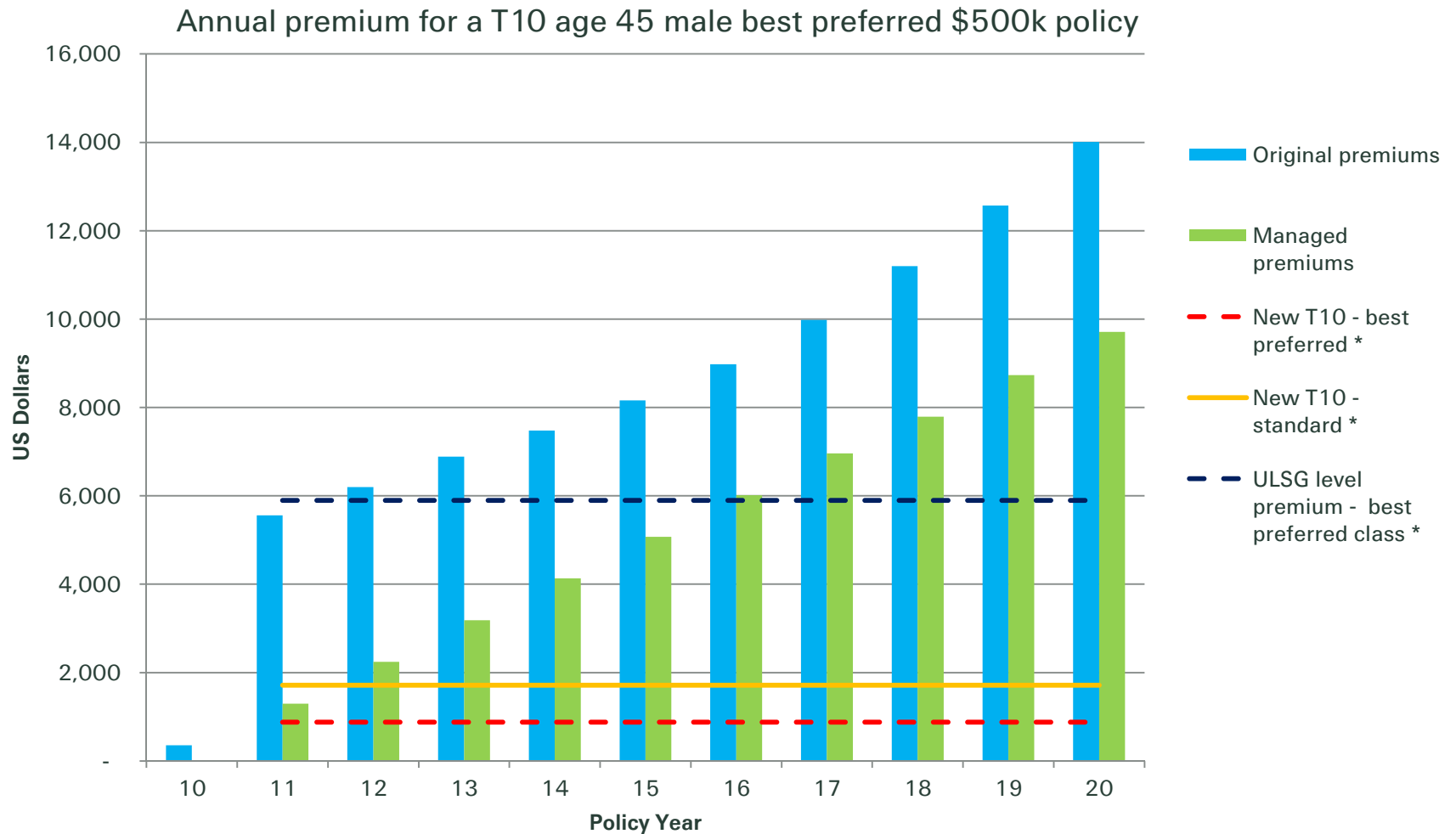
- It appears that setting PLT premiums at "conservatively high levels" with high premium jumps actually drive loss ratios in excess of 100%
- Experience indicates lower premiums jumps result in sustainable loss ratios
- We see some evidence that grading of premium rates, instead of a cliff increase, improves persistency -- even when the ultimate premiums are the same

■ What Swiss Re is doing

- Implemented premium changes on multiple blocks acquired by Swiss Re
- Currently working with our clients to help them manage PLT business
 - Agreed to changes with several clients and are engaged with several more
 - Adjusting PLT premium rates to reduce lapses, preserve healthier lives, and increase profitability

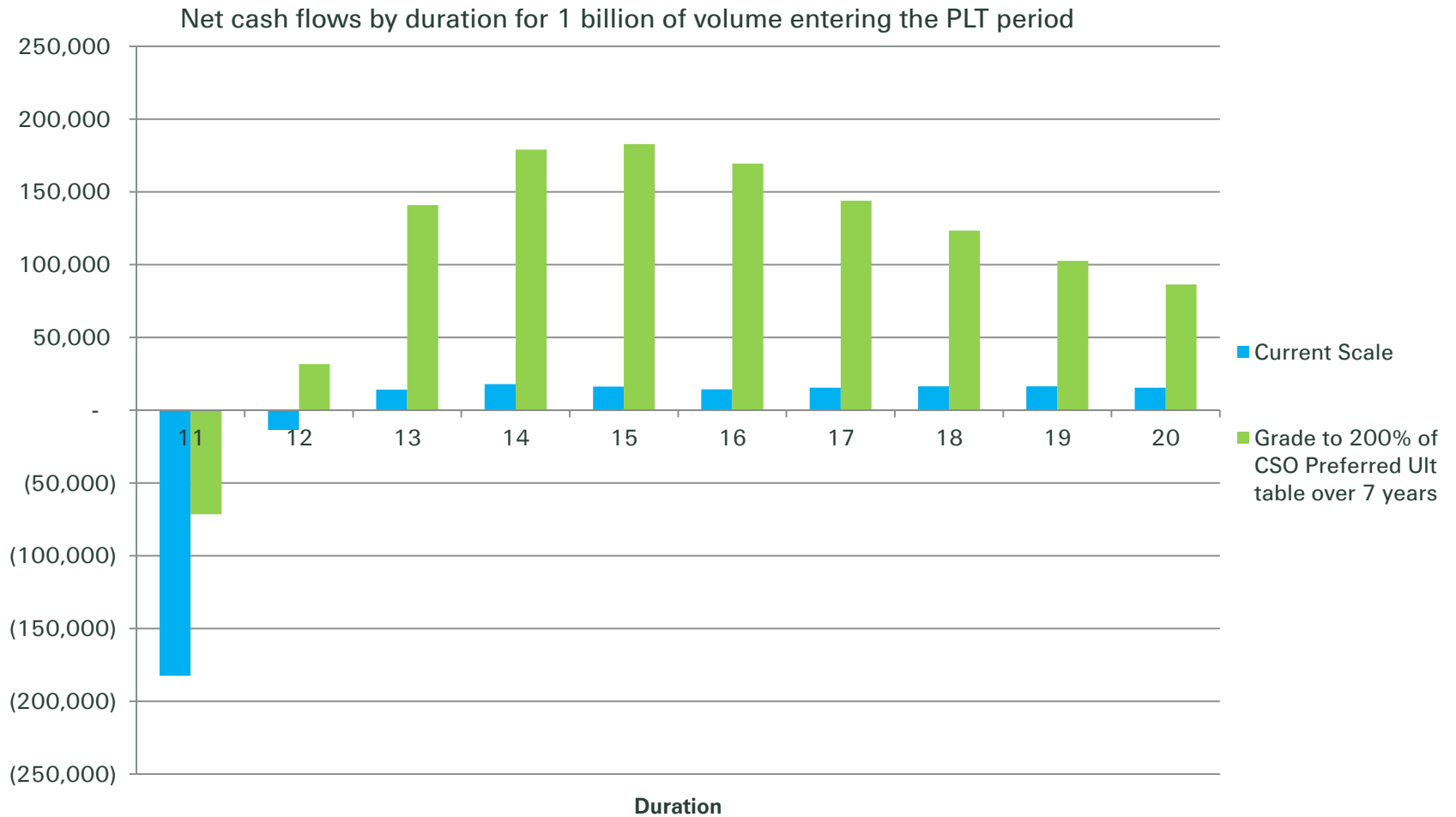
PLT management in action

Illustrative potential PLT premium change



PLT management in action

Illustrative potential PLT net cash flows



Conclusions

- Shock lapse and mortality correlate to the size of premium jump
- The issue isn't going away
Products currently being sold tend to have even larger premium rate jumps than the in-force we've studied (experience on future cross overs into PLT will likely be worse)
- Cliff increases don't seem to work well for anyone
For the insured population or for insurers and their reinsurers
- Verdict is still out on what experience will show at later durations
This is due to small amounts of business being in the later durations. However, experience does show that big cliff increases right at PLT cross over does not work well for anyone
- With a little bit of work – value can be enhanced for all parties
After implementing PLT premium changes on our acquired term life business and working with several clients, early experience is validating our expectations

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