9th Seminar on Current Issues in General Insurance



CAT Equalization Reserve

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What is CAT Equalization Reserve

Institute of Actuaries of India

CAT Equalisation Reserve (CER) :

- Pre-event reserve for the current and future book, accumulated for extremely severe catastrophic events.
- Acts as an **internal reinsurance mechanism**, where the corpus is built gradually over years
- Extreme events like Chennai Flood (2015), Mumbai Flood (2005), Michaung (2023) etc.

- Loss reserves are established upon the occurrence of an insured event
- Technical reserves are set for already underwritten book



- CER is gradually built over years to cover future losses
- CER covers losses from business already underwritten and what would be underwritten in future

Key Principles

Prudence - Allocates part of UW surplus to prepare for future extreme events

Smoothing Volatility – Reduces volatility of P&L

Internal Reinsurance Mechanism – specially for lower reinsurance layers

CER Benefits

CAT Equalization Reserve can act as an internal Reinsurance mechanism, functioning like a low-attaching CAT XL layer. Instead of paying steep premiums for heavily loaded CAT XOL lower layers .

Insurers

- **Reducing P&L volatility**: Smooths Profits and creates buffer year on year against volatility from rare, high-severity events
- **Reinsurance Optimization**: Reduces reliance on costly reinsurance for tail risks

Policyholders

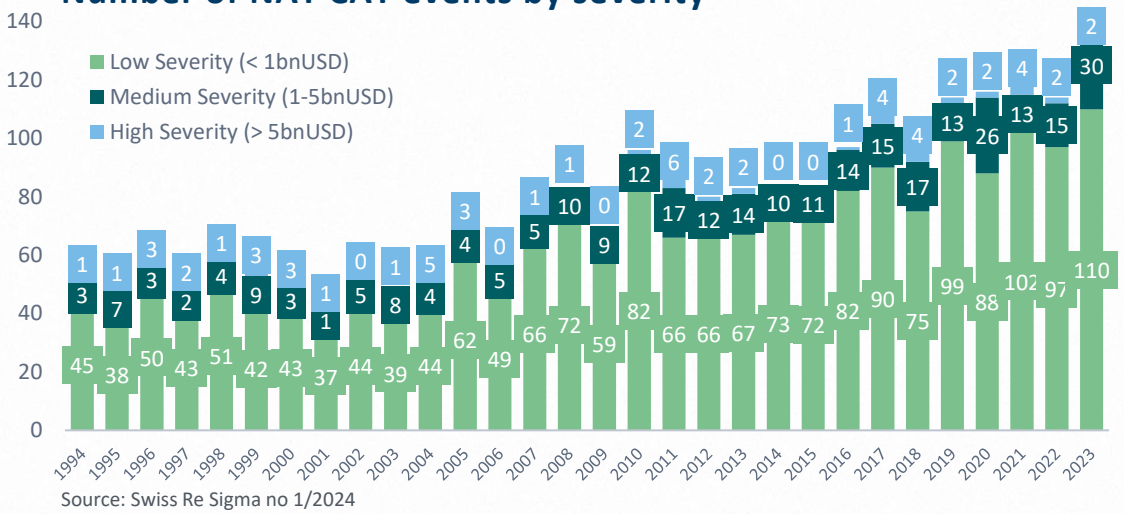
- Driven by global CAT events if the increasing RI costs are not addressed through alternate RI arrangements like CER then ultimately cost will be passed on to the policyholders.
- **Claims Security**: Ensures timely claims payments after catastrophic events
- **Pricing Stability**: Helps avoid sharp premium hikes post-disaster
- **Long-Term Trust**: Builds confidence in insurer resilience

Market & Penetration

- **Improved Capacity**: Encourages insurers to underwrite across all geography
- **Deeper Penetration**: Makes coverage more affordable and available in vulnerable regions
- **Market Resilience**: Supports a more robust and shock-absorbent insurance ecosystem
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Climate Change: Significant Driver of Global Increase in RI Costs

Number of NAT CAT events by severity



Source: Swiss Re Sigma no 1/2024

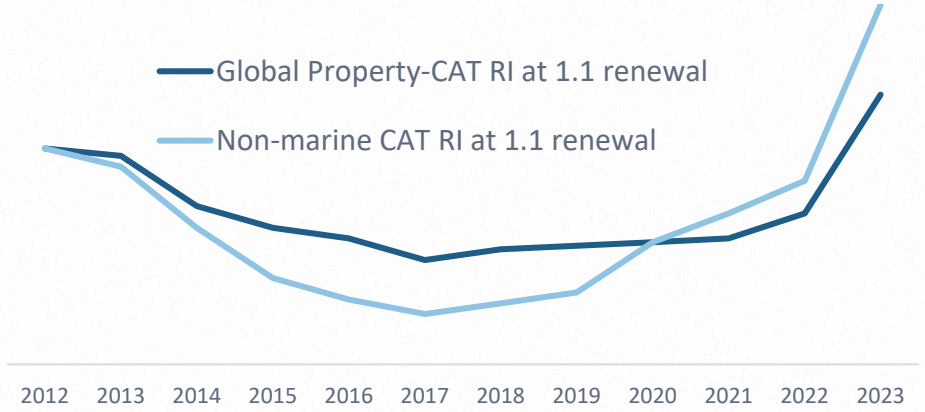
Asia contributed to only 7.5% of the total global insured losses and 29.6% of the economic losses in the year 2025

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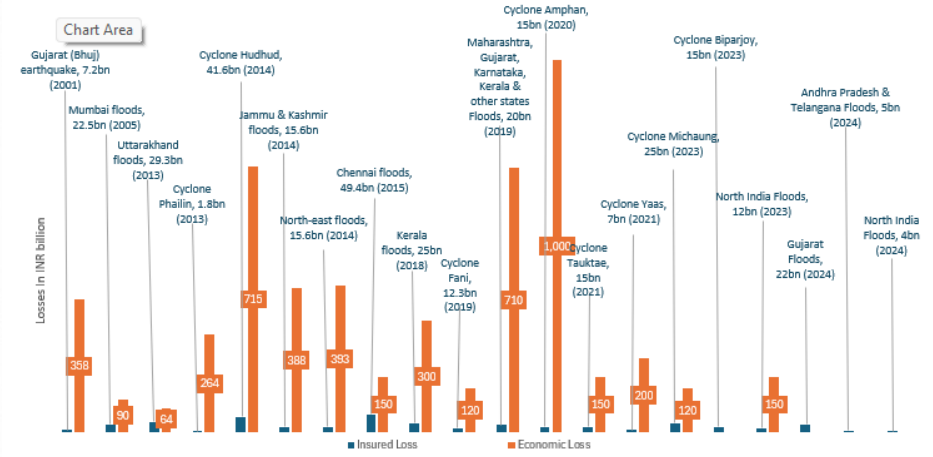
Regions	Number	Victims	Insured Losses (USD bn)	%	Economic Losses (USD bn)	%
North America	**91**	**617**	**96**	**80.2%**	**133**	**56.9%**
Europe	36	2514	6	5.4%	10	4.2%
Asia	**95**	**12,797**	**9**	**7.5%**	**69**	**29.6%**
Latin America	21	489	3	2.7%	13	5.6%
Africa	31	1,481	1	0.5%	2	1.0%
Oceania/ Australia	6	31	5	3.7%	6	2.7%
World Total	**280**	**17,929**	**120**	**100.0%**	**235**	**100.0%**

Source: Swiss Re Sigma no 1/2026

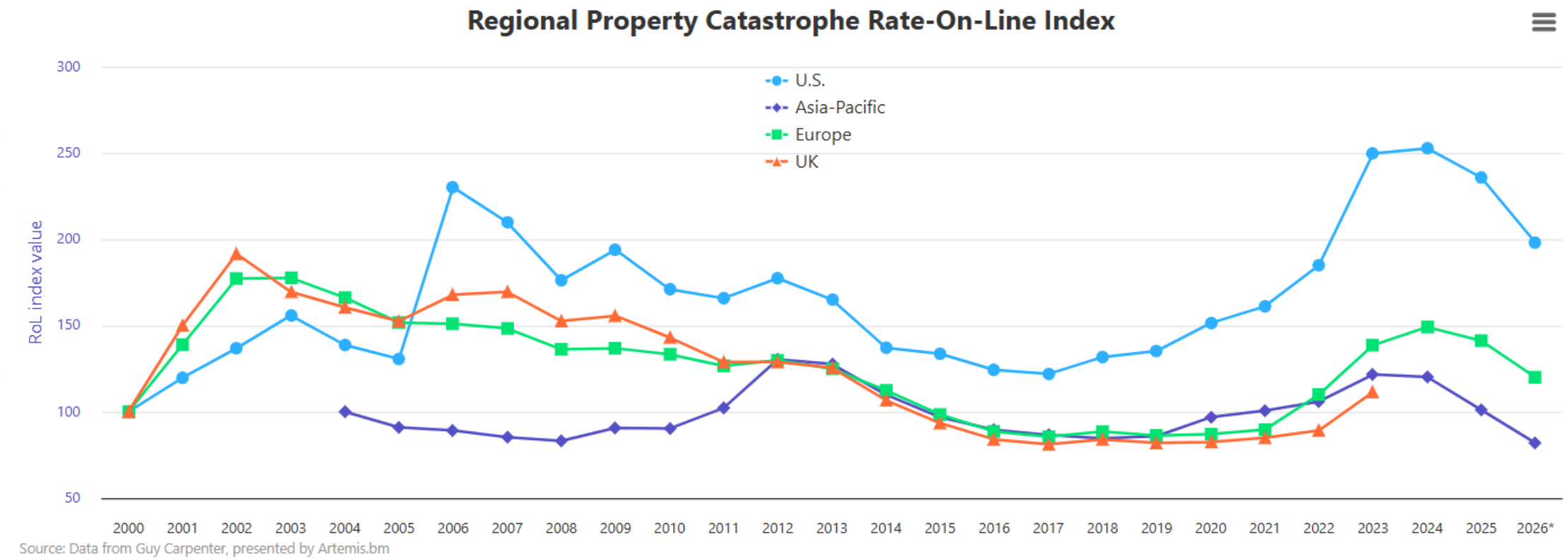
Global CAT RI costs is increasing across all geographies irrespective of their contributions in insured or economic losses



India contributes to a small fraction of Global CAT Loss. Major historical CAT losses in India adds to only ~255 INR bn



Rising Reinsurance Cost



April 2023: Property-catastrophe XoL pricing jumped 30–50%, mirroring global hard reinsurance market conditions, even without large domestic catastrophes

Business-Standard

Global Jurisdiction Examples

APAC



China

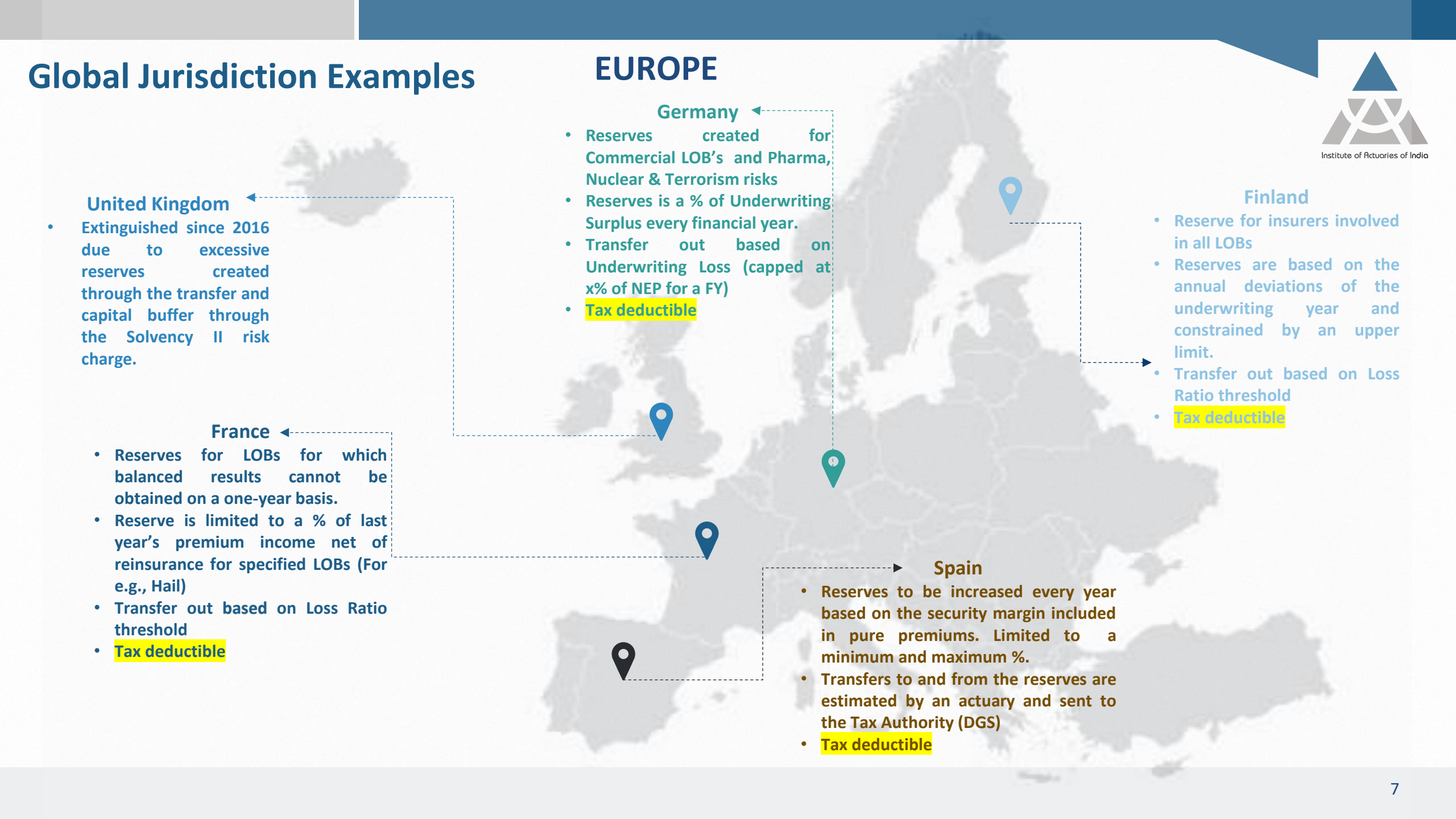
- CAT reserves are set aside on an annual basis and used when a catastrophe occurs
- Appropriations are kept for CAT loss reserves from annual or accumulated excessive underwriting profits in agriculture and nuclear insurance businesses
- China Agriculture Reinsurance Community is set up as a way of pooling the strength of the whole industry to raise domestic risk tolerance and establish a risk pooling mechanism

Japan

- Reserves for all except EQ
- EQ from govt. managed industry pool
- Reserve is a % of net premium for a FY
- Transfer out based on Loss Ratio threshold
- Tax deductible

Global Jurisdiction Examples

EUROPE



Germany

- Reserves created for Commercial LOB's and Pharma, Nuclear & Terrorism risks
- Reserves is a % of Underwriting Surplus every financial year.
- Transfer out based on Underwriting Loss (capped at x% of NEP for a FY)
- Tax deductible

United Kingdom

- Extinguished since 2016 due to excessive reserves created through the transfer and capital buffer through the Solvency II risk charge.

Finland

- Reserve for insurers involved in all LOBs
- Reserves are based on the annual deviations of the underwriting year and constrained by an upper limit.
- Transfer out based on Loss Ratio threshold
- Tax deductible

France

- Reserves for LOBs for which balanced results cannot be obtained on a one-year basis.
- Reserve is limited to a % of last year's premium income net of reinsurance for specified LOBs (For e.g., Hail)
- Transfer out based on Loss Ratio threshold
- Tax deductible

Spain

- Reserves to be increased every year based on the security margin included in pure premiums. Limited to a minimum and maximum %.
- Transfers to and from the reserves are estimated by an actuary and sent to the Tax Authority (DGS)
- Tax deductible

UK equalisation reserve (A cautionary tale)

Business Group	Transfer in % net written premium	Transfer out % claims ratio trigger	Maximum reserve % 5 year average net written premium
Property	3	72.5	20
Consequential loss	3	72.5	20
Marine and aviation	6	95	40
Nuclear	75	25	600
Non-proportional treaty	11	100	75
Credit Business	75% of the technical surplus for the financial year subject to a maximum of 12% of the written premium for that year.	100% of any technical deficit for the year.	150% of the highest annual amount of premiums written in any year out of the last 5 years.

- Threshold required to trigger a transfer out was set too high, transforming what was meant to be a cyclical "smoothing" mechanism into a permanent, untaxed corporate tax shelter.
- Because catastrophic events like nuclear accidents, massive marine disasters, or once-in-a-generation storms are so rare, the funds rarely left the balance sheet. Consequently, billions of pounds sat in these reserves completely shielded from corporation tax. Ultimately, the UK dismantled the regime to remove arbitrary formulaic tax breaks.

Framework could be rationalised with some of the mechanisms given in the table below:

Reform mechanism	Proposed adjustment	Intended effect
Dynamic claims thresholds	Release funds at a lower, rolling trigger. Illustration: claims ratio exceeds 105% of its five-year average.	Absorb moderate-to-high volatility and bring reserve releases into taxable income more regularly.
Risk-calibrated reserve caps	Link the cap to modelled catastrophe exposure rather than premium volume alone.	As exposure falls, reduce the cap and release excess reserves into taxable trading income.
“Use-it-or-lose-it” expiry	Expire unused transfers after 7–10 years. Example: release a Year 1 transfer in Year 8.	Limit the duration of tax deferral and maintain a temporary rolling buffer.

Equalization reserve scenarios

Scenarios	Factors	Transfer In	Transfer Out	Remarks	Transfer IN	Transfer OUT
1	Overall Equalization (% of NWP overall, UW Loss)	0.50%	3.00%	Function of NWP (Transfer IN) and UW Loss (transfer OUT)	8,217	9,301
2	CAT Equalization (% of NWP overall , Losses due to CAT)	0.45%	Actual CAT Loss subject to UW profit (If UW Profit >0, No transfer OUT)	For transfer OUT, If UW Profit > 0, No transfer OUT otherwise Actual CAT Loss	7,395	8,265
3	CAT Equalization (% of NWP of LOBs contributing to CAT, Losses due to CAT)	4.00%	Actual CAT Loss subject to UW profit (If UW Profit >0, No transfer OUT)	In addition to Scenario 2, Transfer IN should be based on LOB contributing to CAT (i.e. Fire, Marine Cargo, Marine Hull and Engg)	6,295	8,265
4	Equalization (CAT + Overall) (% of NWP overall, Losses due to CAT and UW Profit)	0.80%	2% (in case of UW Loss) + Actual CAT loss (irrespective of UW profit/loss)	Transfer OUT - If UW Profit > 0 then Actual CAT Loss, otherwise Actual CAT Loss + 2% of UW Loss	13,147	14,466
5	Equalization (CAT + Overall) (% of NWP of LOBs contributing to CAT, Losses due to CAT and UW profit)	7.50%	2% (in case of UW Loss) + Actual CAT loss (irrespective of UW profit/loss)	Transfer OUT - If UW Profit > 0 then Actual CAT Loss, otherwise Actual CAT Loss + 2% of UW Loss	11,803	14,466

Transfer-in and Transfer-out calculated using Annexure 1,2 and 3

Tax treatment

Extreme CAT claims will reduce profit in years they occur

CAT Equalization reserve can act as internal reinsurance mechanism for otherwise expensive primary CAT XL layers

Propose tax deductible treatment like and other technical reserve e.g.

- Outstanding claims
- IBNR/ IBN(E)R
- UPR
-PDR, etc.

Industry pools like NAT CAT pool and its contributions from the individual companies will anyway be subjected to tax deductible benefits

In absence of CER or NAT CAT pool or any RI arrangement, extreme CAT event claims will anyway reduce PBT and hence such claim amounts are subjected to tax deductible benefits

To create equalisation reserves subjected to tax deductible benefits

Typical illustration scenarios showing PAT volatility

Scenario	Scenario Name	Scenario Explained	Particulars	Year N	Year N+1	Year N+2	Year N+3
1	**Typical CER (Tax deductible)**	CER is tax deductible. Where such CER is allowed as tax-deductible, any payout or utilisation from such CER would be added back in the computation of income and offered to income tax in the year of such payout	**Operating Profit before CAT Loss**	1,200	1,500	1,600	1,800
			CAT loss	600	1,250	800	500
			Operating Profit after CAT Loss	600	250	800	1,300
			CER Transfer-in @10% of OP	60	25	80	130
			CER Transfer-out	600	1,250	800	500
			PBT	1,140	1,475	1,520	1,670
			Tax @25%	285	369	380	418
			PAT	**855**	**1,106**	**1,140**	**1,253**
2	**CER (not tax deductible)**	CER is deducted from Profit After Tax	**Operating Profit before CAT Loss**	1,200	1,500	1,600	1,800
			CAT loss	600	1,250	800	500
			Operating Profit after CAT Loss	600	250	800	1,300
			PBT	1,200	1,500	1,600	1,800
			Tax @25%	300	375	400	450
			PAT	900	1,125	1,200	1,350
			CER Transfer-in @10% of OP	60	25	80	130
			CER Transfer-out	600	1,250	800	500
			Adjusted PAT	**840**	**1,100**	**1,120**	**1,220**
3	**No CER**	Existing scenario	**Operating Profit before CAT Loss**	1,200	1,500	1,600	1,800
			CAT loss	600	1,250	800	500
			Operating Profit after CAT Loss	600	250	800	1,300
			PBT	600	250	800	1,300
			Tax @25%	150	63	200	325
			PAT	**450**	**188**	**600**	**975**

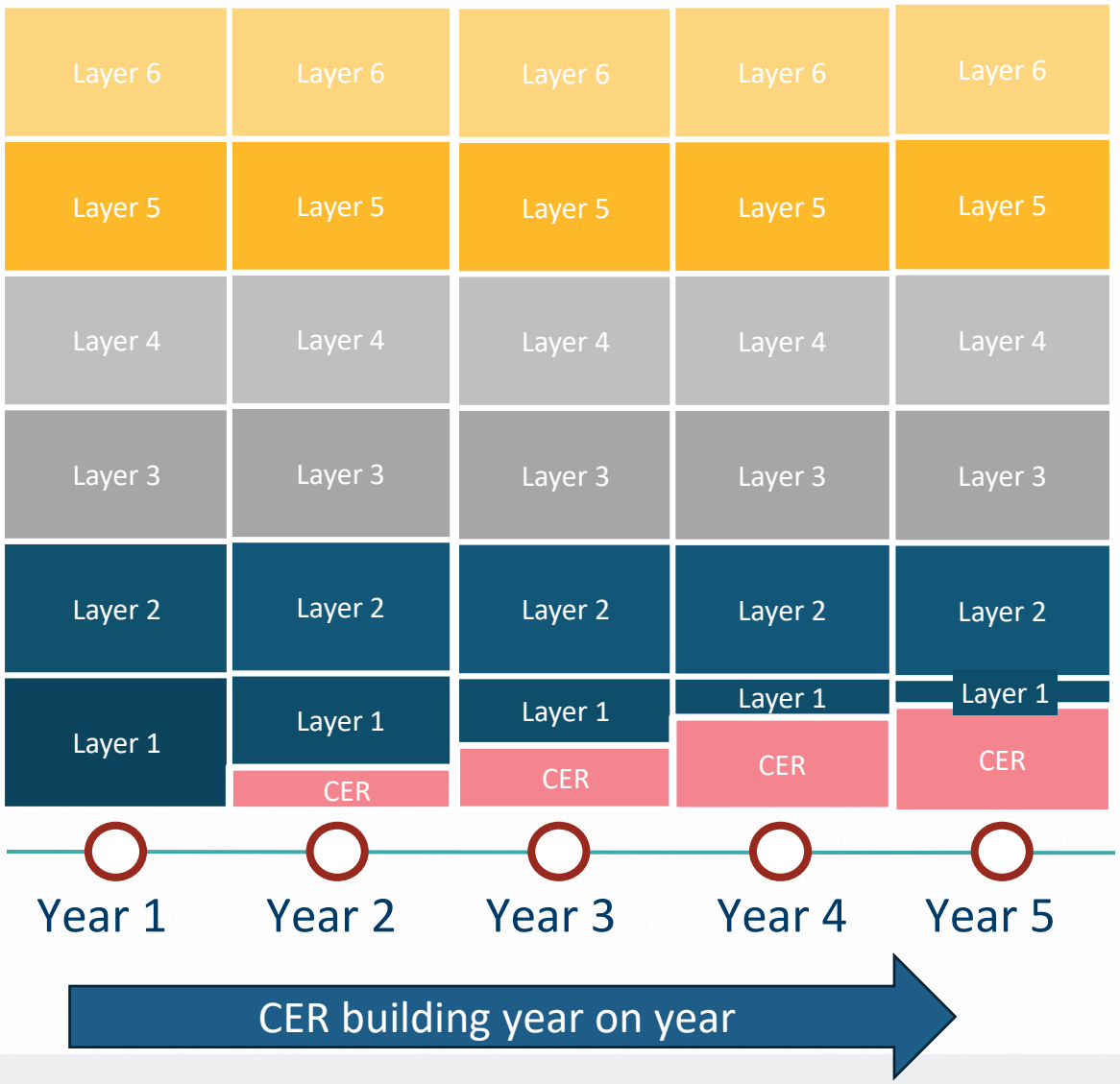
Tax treatment Scenarios

against different CER related transactions in three subsequent Financial Years

				IL Books			Probable IL Assessment Status		
Year	**Event**	**Sr No.**	**Impact in P&L**	**Impact in Return of Income (ROI)**	**Impact in Deferred Tax**	**Tax impact to IL**	**Impact in Return of Income (ROI)**	**Impact in Deferred Tax**	**Tax impact on Assessment**
1	Creation of Catastrophic (CAT) Reserve		CAT Reserve created by Debit to P&L above the line (before PBT)	Added back to PBT	Deferred Tax Asset created (Assuming this to be timing difference)	Excess tax is paid by IL (Additional Cash flow)	Accepted by AO	Deferred Tax Asset is a Book entry and may not be challenged by the AO	No change
2	Creation of CAT Reserve [same as above]		CAT Reserve created by Debit to P&L above the line (before PBT)	Added back to PBT	Deferred Tax Asset created (Assuming this to be timing difference)	Excess tax is paid by IL (Additional Cash flow)	Accepted by AO	Deferred Tax Asset is a Book entry and may not be challenged by the AO	No change
3	Catastrophic event takes place	A	Claims amount debited to P&L (excess amount on account of catastrophic event)	Allowed as a deduction	No impact	Tax Neutral	Accepted by AO	Accepted by AO	No change
		B	Credit to P&L (before PBT) from the CAT reserve created - in order to neutralise the impact of excess claims on P&L.	Deduction from PBT (as this has been added back to P&L earlier)	Reversal of Deferred Tax Asset	Tax liability reduced to the extent of reversal of CAT Reserve (Reduction in Cash flow)	Disallowance by AO	Department would treat this as a permanent difference and may not allow reversal of Deferred Tax Asset. However, this being a book entry is tax neutral	Tax adverse - IL would be required to pay tax again on amount credit to P/L
		C	CAT Reserve created by Debit to P&L above the line (before PBT) [same as 1 and 2 above]	Added back to PBT	Deferred Tax Asset created (Assuming this to be timing difference)	Excess tax is paid by IL (Additional Cash flow)	Accepted by AO	Deferred Tax Asset is a Book entry and may not be challenged by the AO	No change

Above table highlights the possible double taxation impact in case the taxation authority does not agree to reverse or utilise the deferred tax asset at the time of utilising such reserves during CAT losses and not allowing as a tax-deductible line item at the time of creation of such reserves only leading to the creation of deferred tax asset.

Solvency treatment



- Replacing CER as an alternate to RI arrangement reduces the **CAT capital charges** similar to any other RI arrangement, where the reduction will be equivalent to amount recoverable from RI/ CER
- The difference will be in terms of RI credit risk charges vs market risk charges (interest/equity/spread etc.) to be applicable on investment assets backing the CER.

Let’s Discuss

Thank You!

Contact Us

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Annexures

Annexure 1: Historical CAT Losses

Event	Year	Peril	Economic Loss*	Gross Insured Loss*	Net Insured Loss (before CAT XoL)#
Uttarakhand floods	2013	Flood	6,440	2,930	293
Cyclone Phailin	2013	Tropical cyclone	26,350	180	18
Cyclone Hudhud	2014	Tropical cyclone	71,500	4,160	416
Jammu & Kashmir floods	2014	Flood	38,800	1,560	156
North-east floods	2014	Flood	39,330	1,560	156
Chennai floods	2015	Flood	15,000	4,940	494
Kerala floods	2018	Flood	30,000	2,500	250
Cyclone Fani	2019	Tropical cyclone	12,000	1,230	123
Maharashtra, Gujarat, Karnataka, Kerala & other states Floods	2019	Flood	70,970	2,000	200
Cyclone Amphan	2020	Tropical cyclone	100,000	1,500	150
Cyclone Tauktae	2021	Tropical cyclone	15,000	1,500	150
Cyclone Yaas	2021	Tropical cyclone	20,000	700	70
Cyclone Michaung	2023	Tropical cyclone	12,000	2,500	250
Cyclone Biparjoy	2023	Tropical cyclone	6,000-8,000	1500	150
North India Floods	2023	Flood	15,000	1,200	120
Gujarat Floods	2024	Flood	0	2,200	220
Andhra Pradesh & Telangana Floods	2024	Flood	0	500	50
North India Floods	2024	Flood	0	400	40
					3,306
				Total Estimated CAT Loss	**8,265**

**Not adjusted for inflation*

Annexure 2: Financial Year wise industry data

Institute of Actuaries of India

FY	GWP	NWP	NEP	NET CLAIMS	COMM PAID	OPERATING COST (NL 7)	OPEX (NL7 +P&L & RA)	RI COMM	U_W
FY2006	22,890	15,372	14,512	12,897	1,963	-	5,164	1,527	(3,987)
FY2007	27,300	18,263	16,610	13,594	2,223	-	5,346	1,971	(2,583)
FY2008	32,808	21,849	20,012	16,978	2,499	-	6,278	1,848	(3,895)
FY2009	36,512	25,572	23,908	20,532	2,784	-	7,487	1,718	(5,176)
FY2010	42,266	29,798	27,500	23,637	3,017	-	8,132	1,791	(5,495)
FY2011	53,168	37,738	34,189	31,547	3,217	-	11,529	1,900	(10,204)
FY2012	67,341	47,106	41,868	37,113	3,961	-	11,835	2,131	(8,910)
FY2013	73,148	55,054	50,432	41,723	4,438	-	14,397	2,675	(7,451)
FY2014	81,779	63,902	59,082	48,464	5,291	-	16,156	2,687	(8,142)
FY2015	89,002	70,240	66,586	54,090	5,619	-	19,851	2,839	(10,135)
FY2016	101,075	80,643	74,850	63,483	6,262	-	23,206	3,221	(14,880)
FY2017	134,177	94,181	88,725	79,654	7,093	-	27,325	5,710	(19,637)
FY2018	156,627	107,411	100,454	85,780	10,832	25,791	26,319	6,872	(15,605)
FY2019	175,899	120,387	113,334	101,025	12,721	28,631	29,606	7,026	(22,993)
FY2020	196,194	130,195	126,178	108,384	14,412	35,900	37,775	8,743	(25,650)
FY2021	206,918	147,038	137,620	112,169	15,975	38,274	40,938	8,783	(22,679)
FY2022	229,800	165,513	158,003	140,976	17,637	41,444	42,679	9,697	(33,592)
FY2023	266,857	192,641	179,996	150,247	20,607	54,579	70,363	8,105	(53,116)
FY2024	299,693	220,440	208,793	172,300	38,571	38,147	42,491	8,663	(35,907)

Annexure 3: LoB wise industry data (FY 2006 – 2024)

Institute of Actuaries of India

LOB	GWP	NWP	NEP	NET CLAIMS	COMM PAID	OPERATING COST (NL 7)	OPEX (NL7 +P&L & RA)	RI COMM	U_W
Fire	247,650	101,836	95,338	71,449	23,688	18,875	35,417	20,721	(14,494)
Marine Cargo	41,250	28,608	27,767	20,616	4,991	2,840	7,097	1,533	(3,404)
Marine Hull	19,414	4,159	3,994	3,708	661	603	1,513	942	(947)
Engg	51,768	22,770	21,721	12,551	4,562	3,185	7,183	5,072	2,496