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Riassicurazione (catastrofale) nei rami danni

Aggiornamento contesto internazionale e mercato italiano

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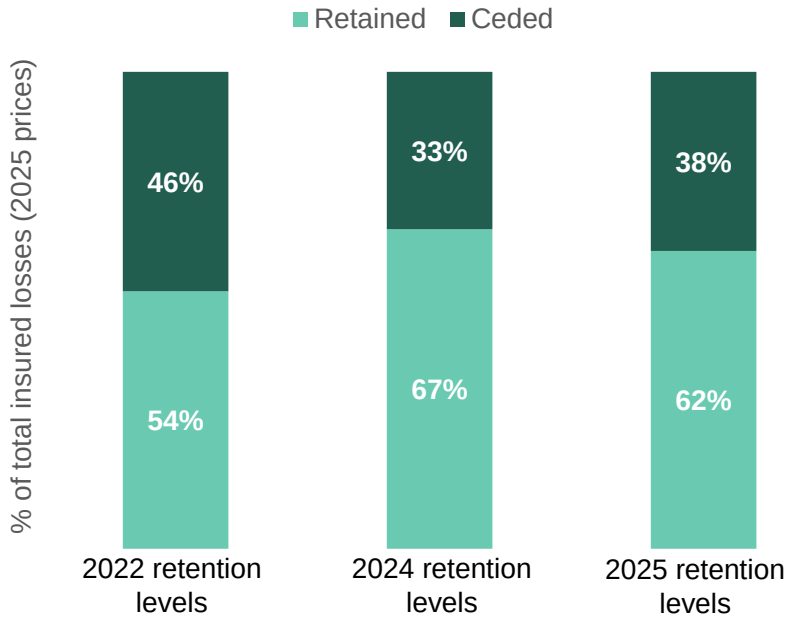
SECTION

01

Major Events

Retained Loss Portions & Loss Drivers

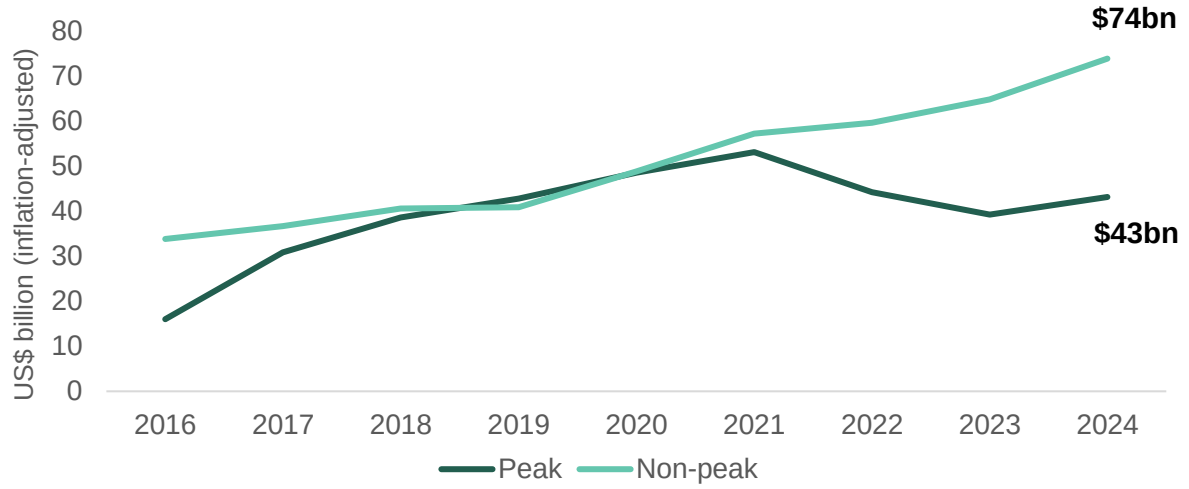
At 1/1/25 retention levels insurers retained 62% of all historical nat-cat losses



The increase in client retentions observed from 2022 to 2024 has now stabilised with retentions generally stable heading into 2025.

Retentions were optimised in several cases, with cedants utilising innovative capacity or structural features to reduce post-loss net positions.

Five-year running average for "peak vs non-peak" natural catastrophe losses 2016-2024 (Insured losses, Source: NOVA)

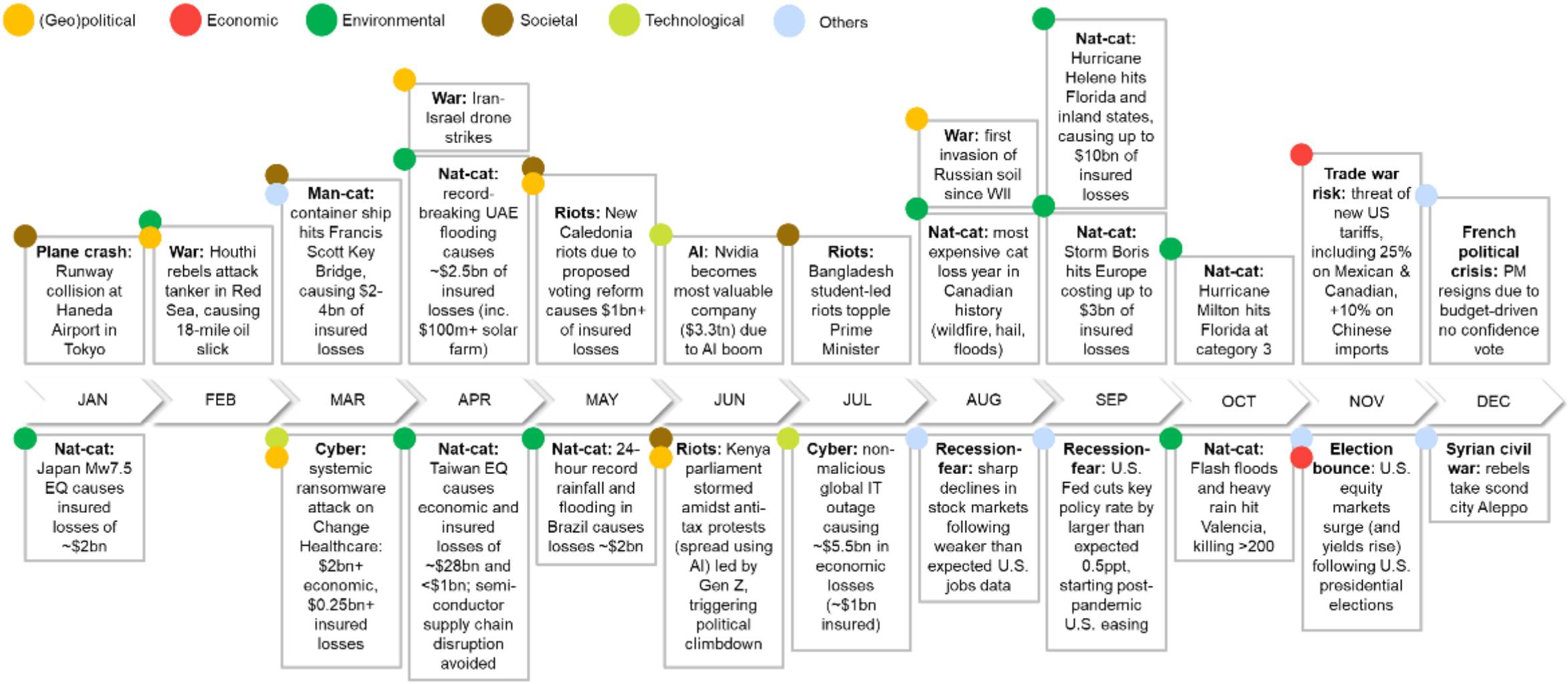


* Peak perils = tropical cyclones, earthquakes, European windstorms.
Non-peak perils = severe convective storms, floods, wildfires, winter (freeze) storms, other.

With pricing now falling from high base, structural changes imposed during the hard market are likely to be more enduring. Higher earnings volatility for insurers looks set to remain a feature in 2025 as they continue to absorb the lion's share of (elevated) catastrophe losses due to higher attachment points.

Since 2021, so-called non-peak losses have outstripped peak losses each year

2024 Significant Industry Losses



Several key events occurred in 2024 ranging from Environmental to (Geo)political

2024 Major Events Timeline

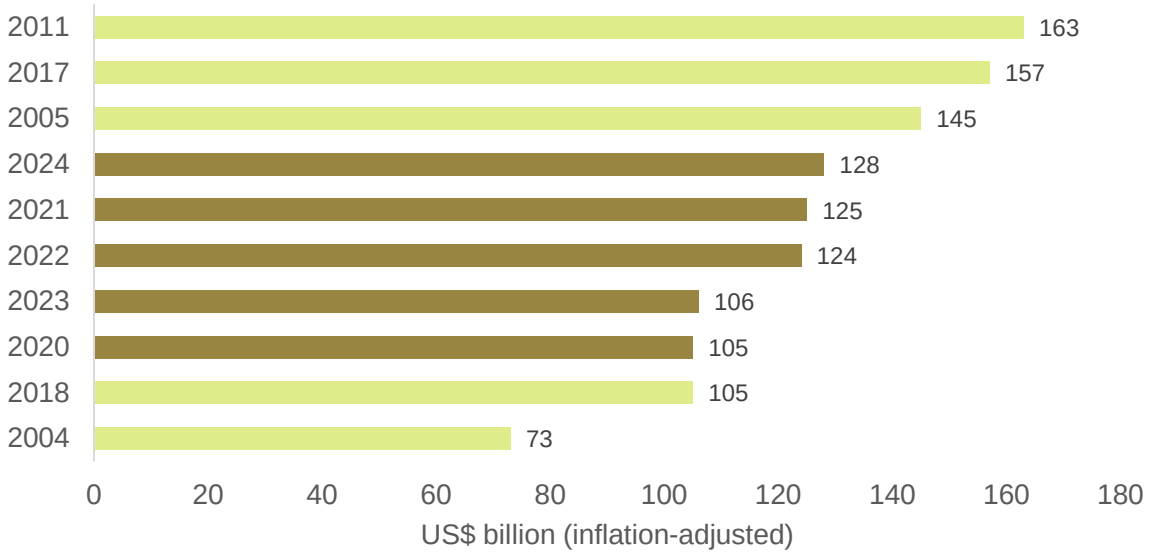
Top Loss Events

Event	Italy Hailstorm 2023	CAL WF	Hurricane Helene	Hurricane Milton	New Caledonian Riots	Central Eastern Europe Floods	Taiwan Earthquake
Insured loss	$6bn	$28bn/$35bn *	$12.8bn	$22.5bn	$1bn	$2.8bn	$800mn
Economic loss	$16bn	$250bn-$275bn **	$53bn	$50bn	$2.2bn	>$10bn	$28bn
Description	Severe hail and wind losses in July of 2023 caused widespread damage in Northern Italy. Claims were larger than previous hail events and deteriorated for an extended period.	Fueled by powerful winds and dry conditions, a series of ferocious wildfires erupted the second week of January and roared across the Los Angeles area.Is one of the most destructive of California history. (*) Verisk est. (**) AccuWeather and JP Morgan est.	A severe tropical cyclone struck the Southeastern United States in September 2024. This was the most severe Atlantic hurricane to strike the US mainland since Hurricane Katrina in 2005.	Hurricane Milton was the second most intense hurricane ever recorded over the gulf of Mexico behind Hurricane Rita in 2005.	Rioting occurred in the French overseas territory of New Caledonia due to proposed voting reforms.	Central European floods were caused by record heavy rainfall generated by Storm Boris. The flooding hit several Eastern European countries.	On April 3, 2024, a 7.4-magnitude earthquake struck just southwest of Hualien City, Taiwan, shortly before 8 a.m. local time.

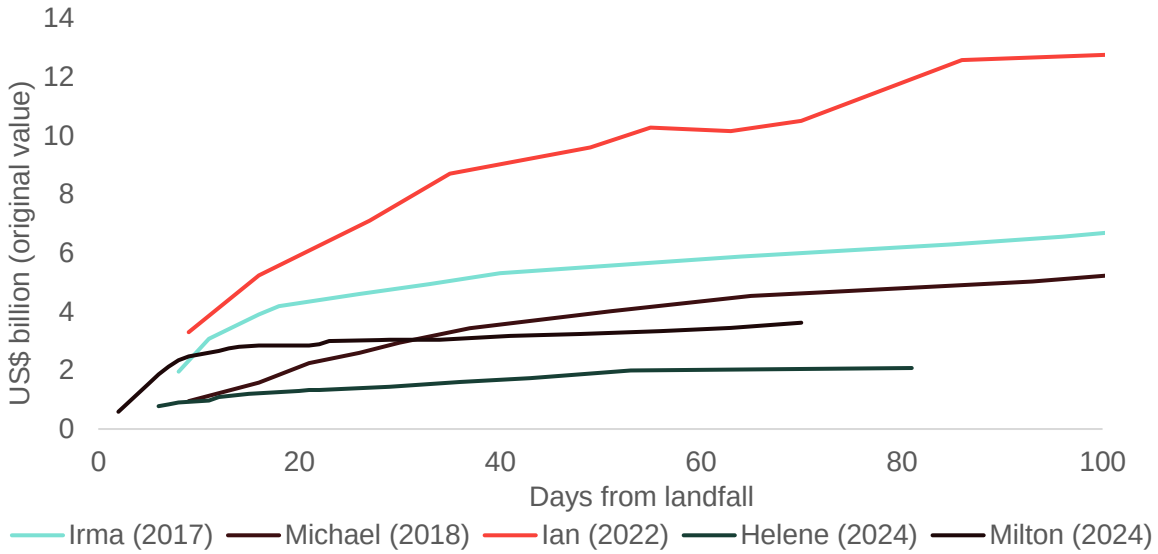
Catastrophe losses still accounted for a large portion of the total industry loss

Complexity of Risks in 2024

Top ten largest insured natural catastrophe loss years on record
(Source: NOVA)



Paid claims development in Florida for Helene and Milton vs other major hurricanes (Source: Howden, Florida Office of Insurance Regulation)



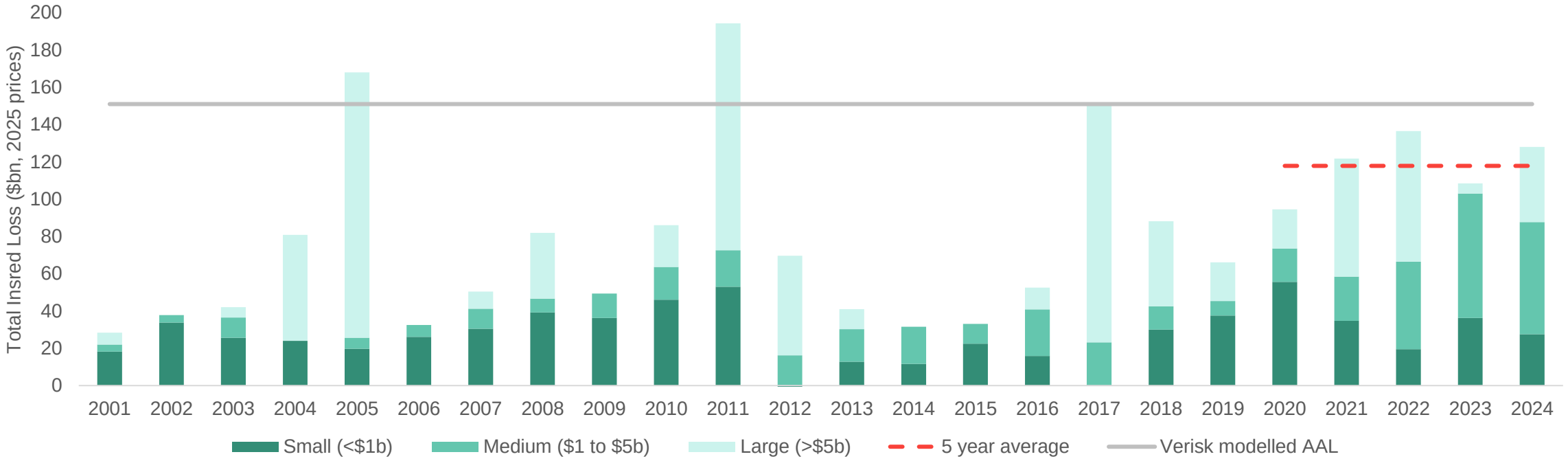
2024 saw over USD$ 120 billion insured natural catastrophe losses with storm claims contributing USD$ 55billion. However, although large enough to trigger reinsurance recoveries, Storm Helene and Milton industry losses were incomparable to Storm Ian (2018) and Irma (2017)

The 4th largest insured natural catastrophe loss year but rates reduced

Insured Catastrophe Losses

Total Insured Nat-Cat Losses by event size (large >$5b, medium $1b-5b, small <$1b)

(Sources: NOVA, Swiss Re Sigma, Cresta Clix)



2024 again above average albeit more than two thirds of losses were driven by small and mid-sized cat losses

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SECTION

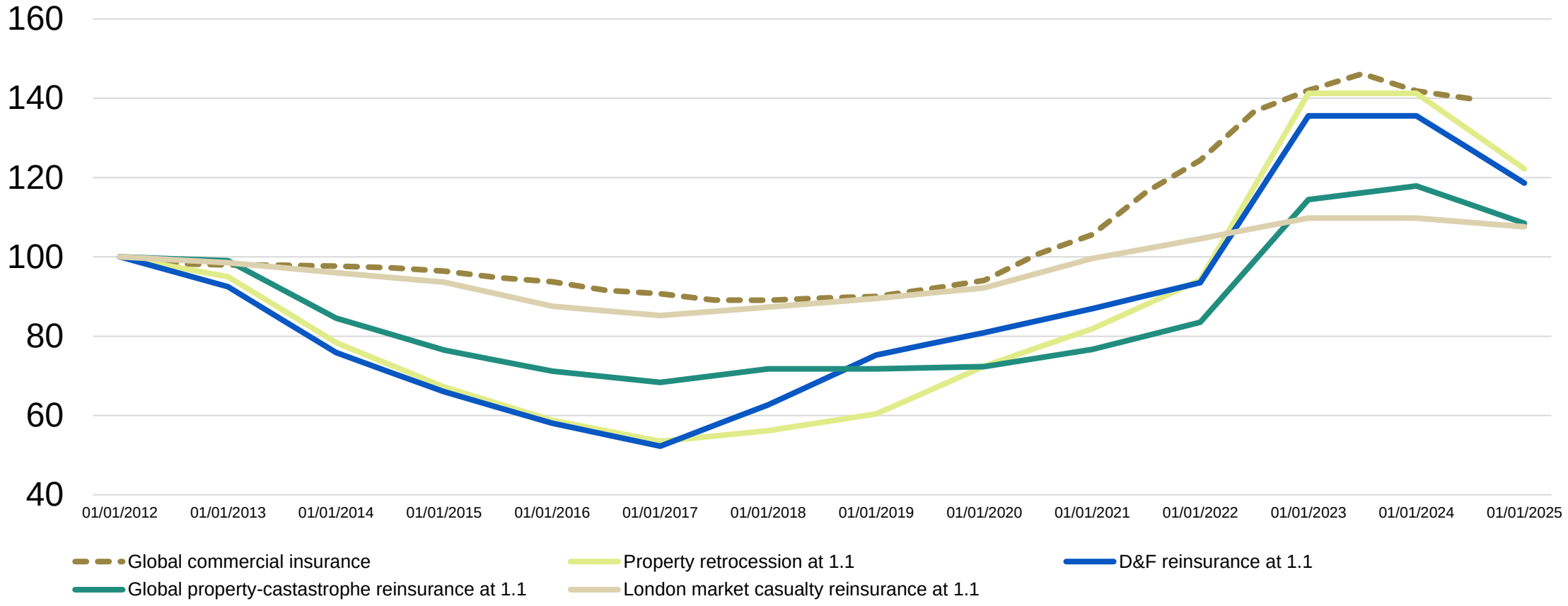
02

Macroeconomic Environment

Past the pricing peak

Risk-adjusted rate change at 1 January 2025

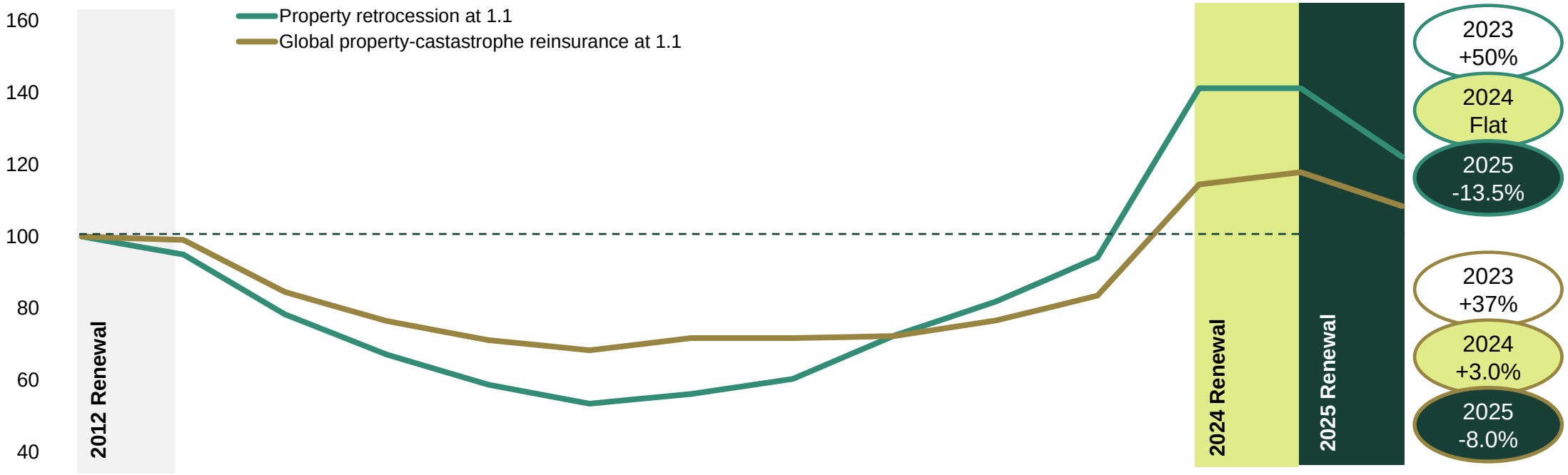
Global property catastrophe	Property retrocession	Global direct and facultative
-8%	-13.5%	-12.5%



Pricing index for primary, reinsurance and retrocession markets – 2012 to 2025

ROL Index

Pricing index for property-catastrophe reinsurance and retrocession markets – 2012 to 2025 (Source: NOVA)

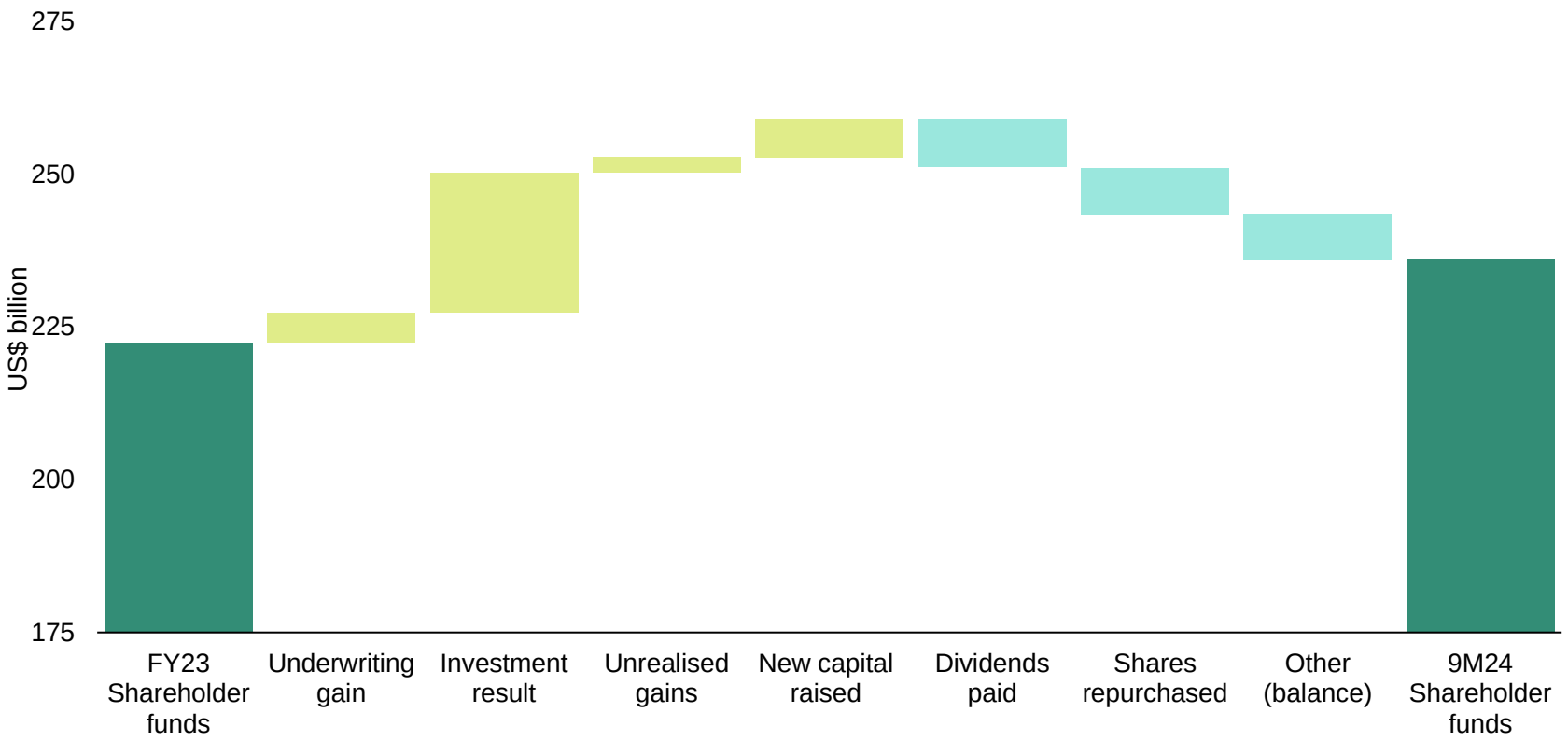


Global reinsurance and retrocession pricing indices, highlighting risk adjusted price movements during the period 2012-2024

Stabilisation of risk adjusted pricing heading into 2025 presents an opportunity for buyers

(Re)insurers Capitalisation

Breakdown of balance sheet components for (re)insurance composite – FY23 to 9M24 (Source: NOVA)

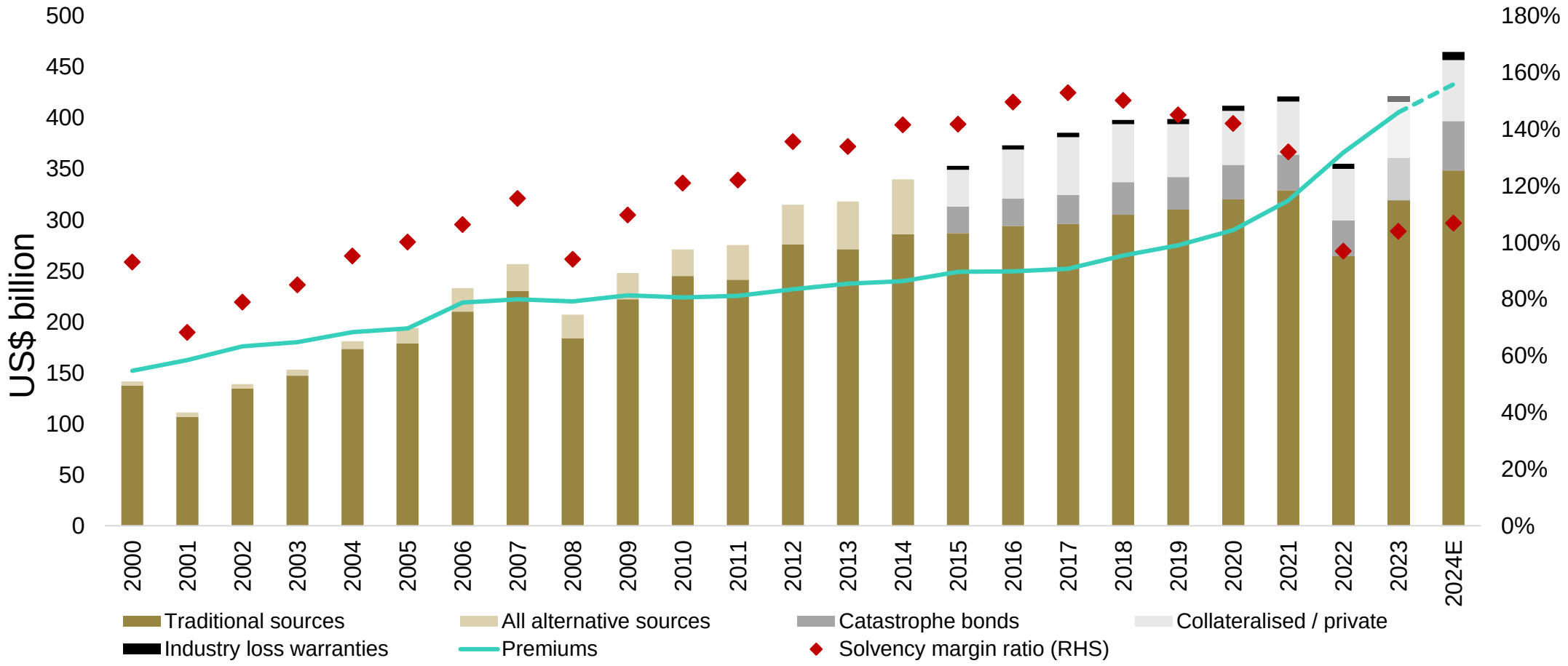


Key takeaways

- Strong underwriting and investment income in 2024 boosted (Re)insurers' capitalisation.
- The shareholders' funds for a composite of (re)insurance carriers rose by 6% in the first nine months of the year after sizeable capital returns were factored in.
- Dividend payouts and share buybacks surged towards the end of the year, reflecting the sector's healthy capital position amidst strong earnings (despite material catastrophe losses).

Macro Outlook

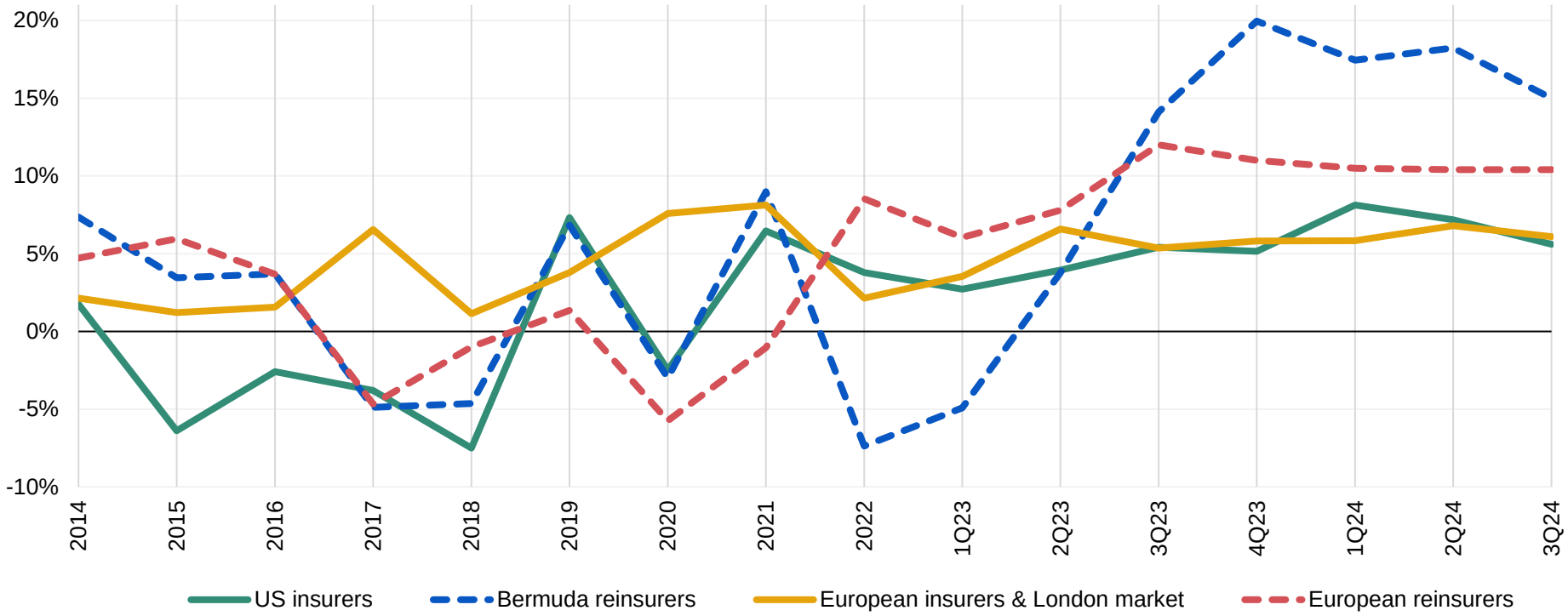
Figure 11: Dedicated reinsurance capital and global gross reinsurance premiums (all lines) – 2000 to 2024 (Source: NOVA)



Estimated dedicated reinsurance capital at record highs of US$463 billion by year-end 2024

Macro Outlook

Economic value added for insurers and reinsurers – 2014 to 3Q24** (Source: NOVA)



Key takeaways

- (Re)insurance companies delivering economic value not seen in over a decade.
- Exceptional (Re)insurance performance and the prospect of another strong year in 2025 provides a solid foundation for future capital inflows.
- Keep in mind that investors are seeking evidence of strong performance over sustained periods and across market cycles.

** Economic value added = (Net Operating Profit After Tax – Weighted Average Cost of Capital) / Total Invested Capital

Insurers and reinsurers are earning returns above their cost of capital

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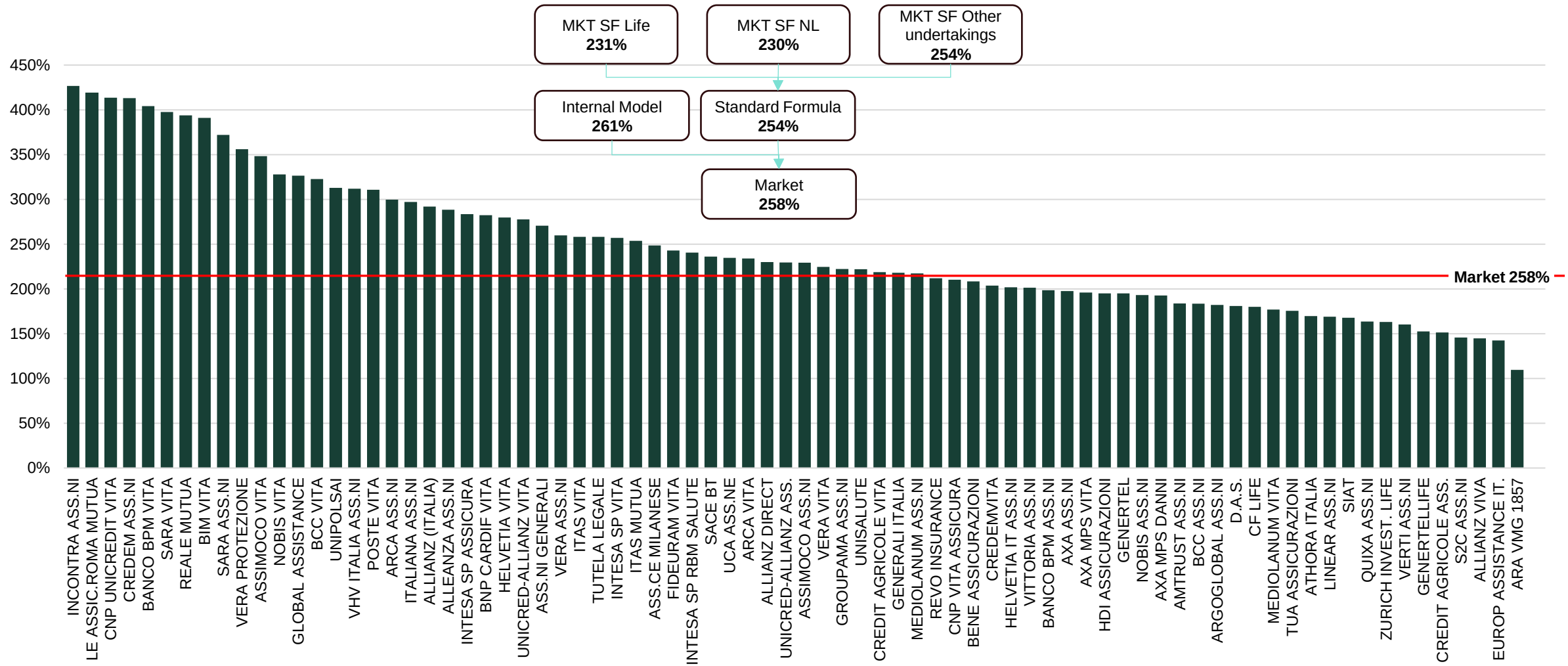
SECTION

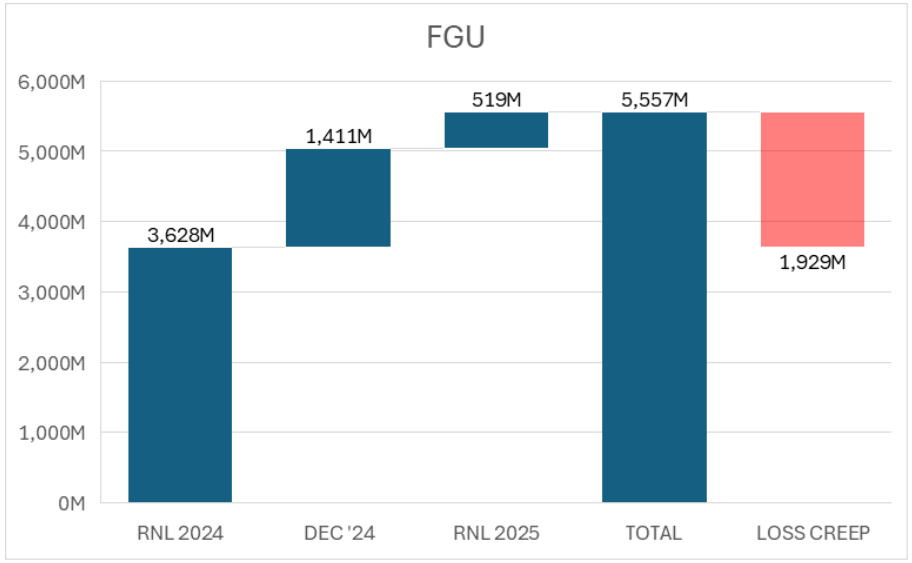
03

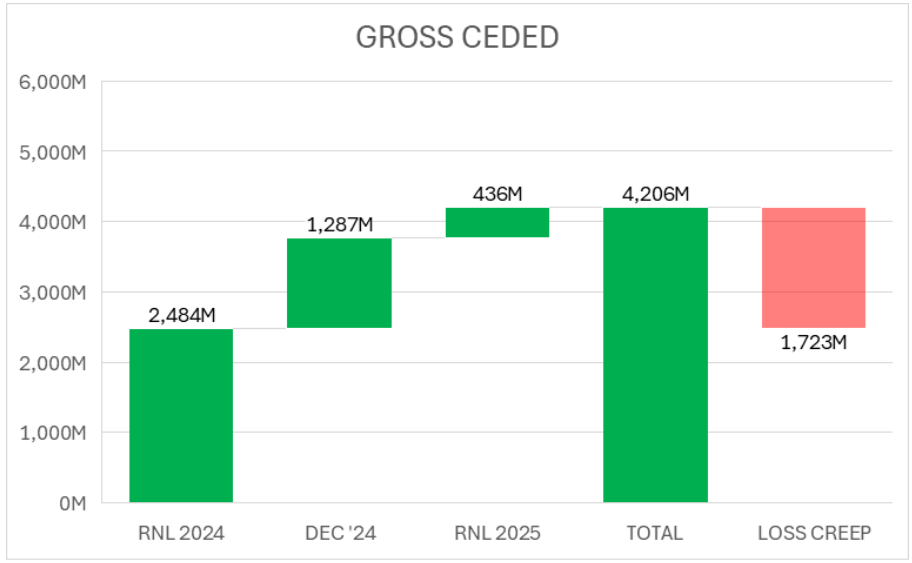
Focus on Italy

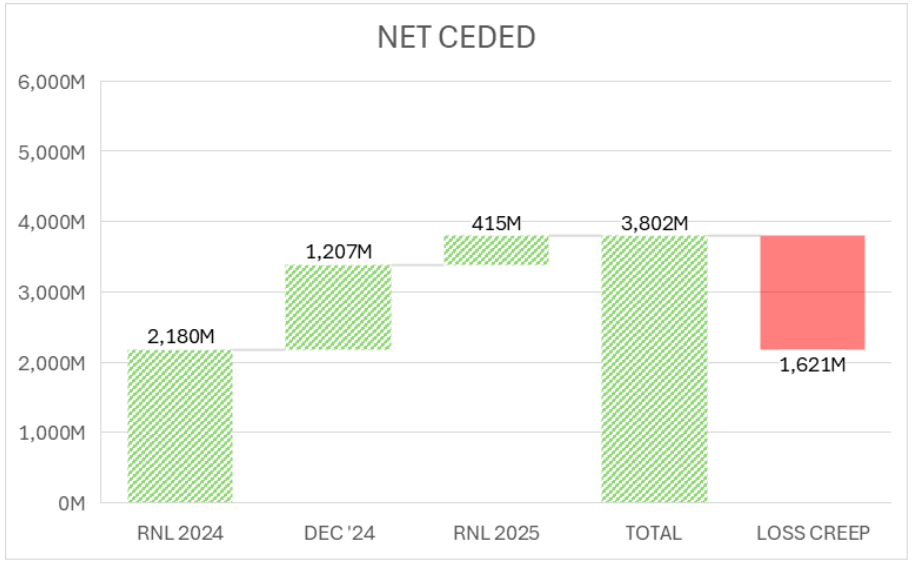
Solvency II Ratio 2023: Italian market (Top 50)

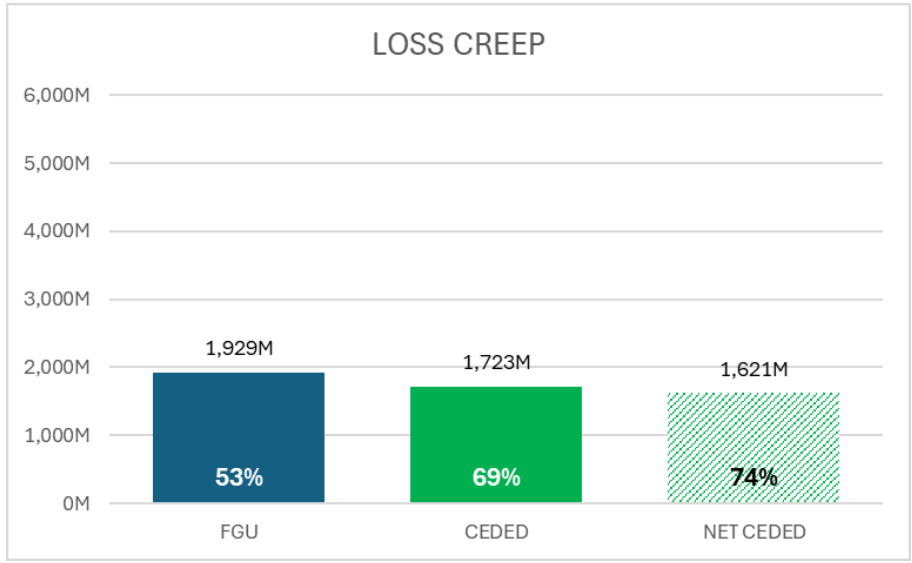


2023 July Events in Italy – Market Losses Evolution









- Italian market faced heavy loss deterioration for the 2023 events (especially July ones) when compared to the figures presented during 2024 renewal.
- 2024 renewal showed structure changes mainly for small medium size domestic companies as well as specific market's behavior
- Late advises also impacted 2025 renewal prices

Applying AS IF renewal 2024 structures (review of hour clauses and increase in retentions) to the July 2023 Events losses, the As-If ceded losses decrease of 19%

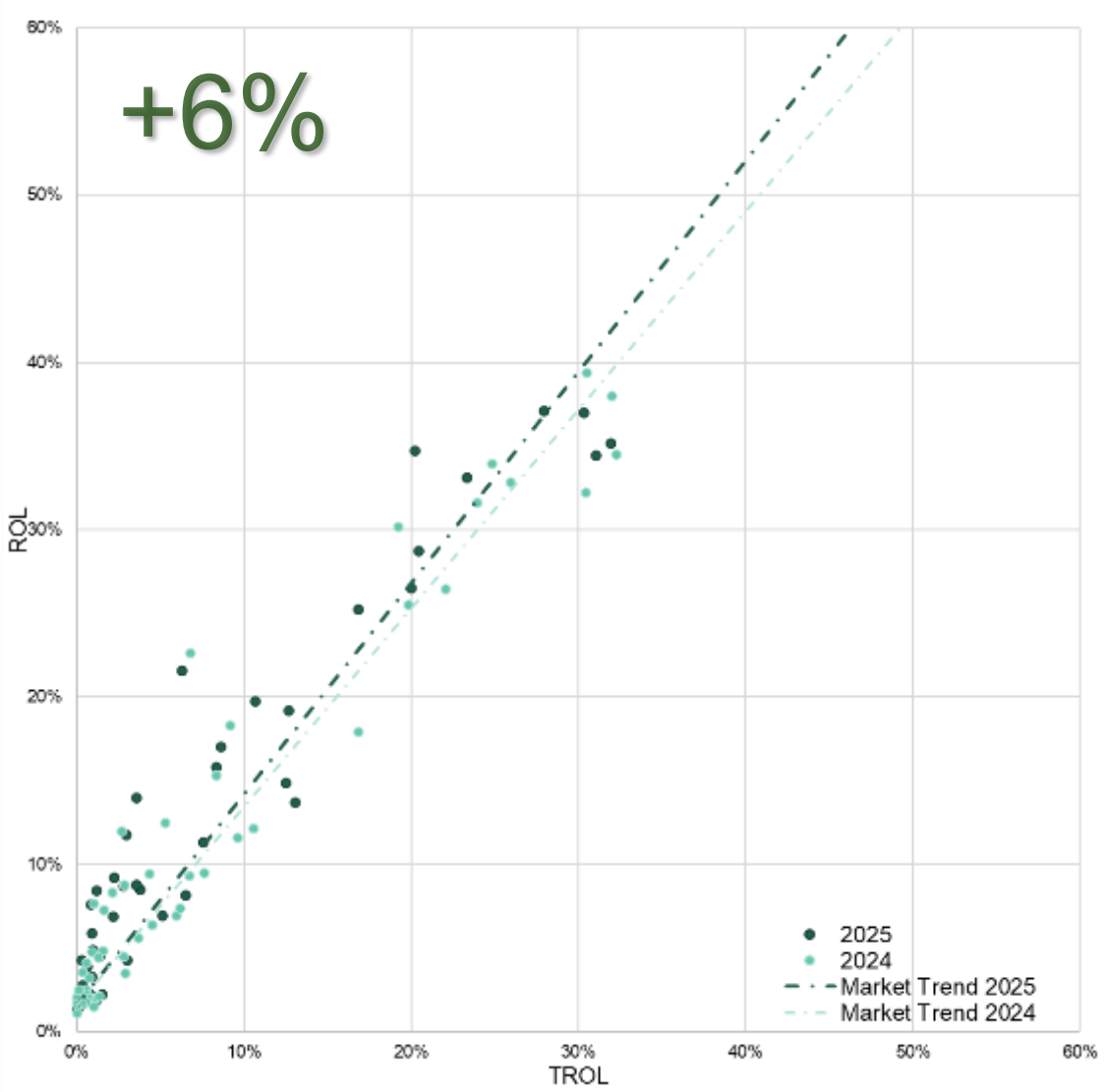
RMS HD Model Performance vs. Historical losses 2023 - Benchmark

(source: Howden Re)

- The graph summarise the performance of the RMS HD model vs. historical loss experience 2023 (OEP with Treaty Hours clause versus largest per event loss experienced). The series reported represent the ratio between 50 Yr (and 250 Yr) Return period loss and the 2023 largest event reported.
- The results shown are in line with the model vendor model update release documentation (see table below).
- As follow a model evaluation of the new RMS model.

OEP Loss Benchmark	RP in v1.1	RP in v1.0
2023 top 1-day loss (summer SCS event 18-25 July 2023): EUR 1.7 Bn*	~75 years	~130 years
2023 top 4-day loss (summer SCS event 18-25 July 2023): EUR 3.1 Bn*	~165 years	~490 years
2023 top 8-day loss (Summer SCS event 18-25 July 2023): EUR 4.5 Bn*	~285 years	~1600 years

Risk Adjusted Renewal 2025 – Fire Event



(source: Howden Re)

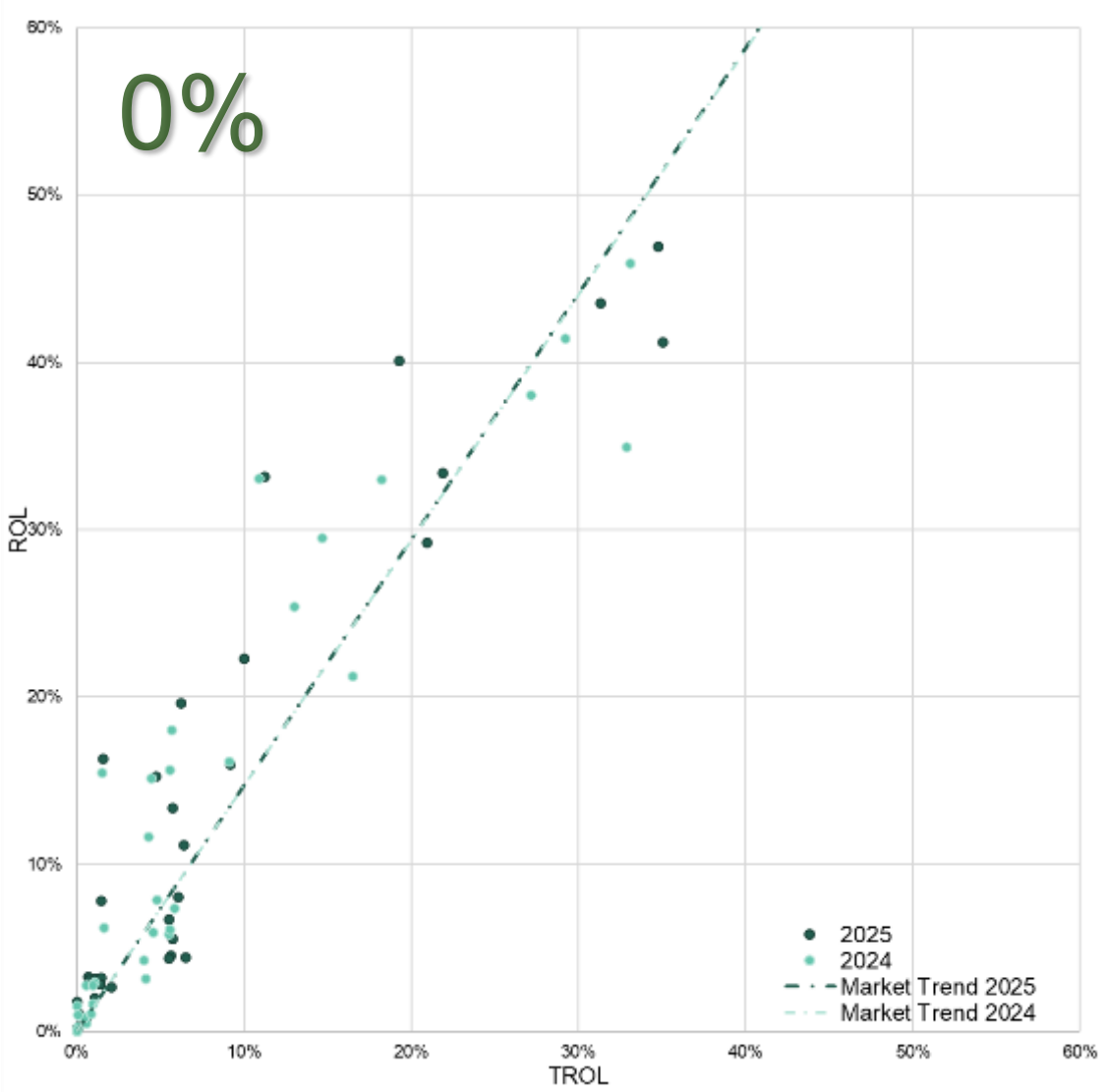
For each program, losses ceded to the layers have been modelled and compared to each single cost layer. The EQ component depends on the model vendor used for the placement (AIR). The SCS has been modelled using RMS HD model (v1.1). The FL component has been modelled using RMS HD (v2.1).

In the scatter plot, each point represents a layer, where Rate-on-Line is compared to the Technical Rate-on-Line, namely the modelled loss discounted for the paid reinstatements, if any.

The change in slope between the market curves represents the loading applied by the reinsurance market, that we estimate **6%** for CAT programs.

Considering the loss creep related to the July 2023 events, we estimate a change in slope of around **-5%**.

Risk Adjusted Renewal 2025 – Fire Risk



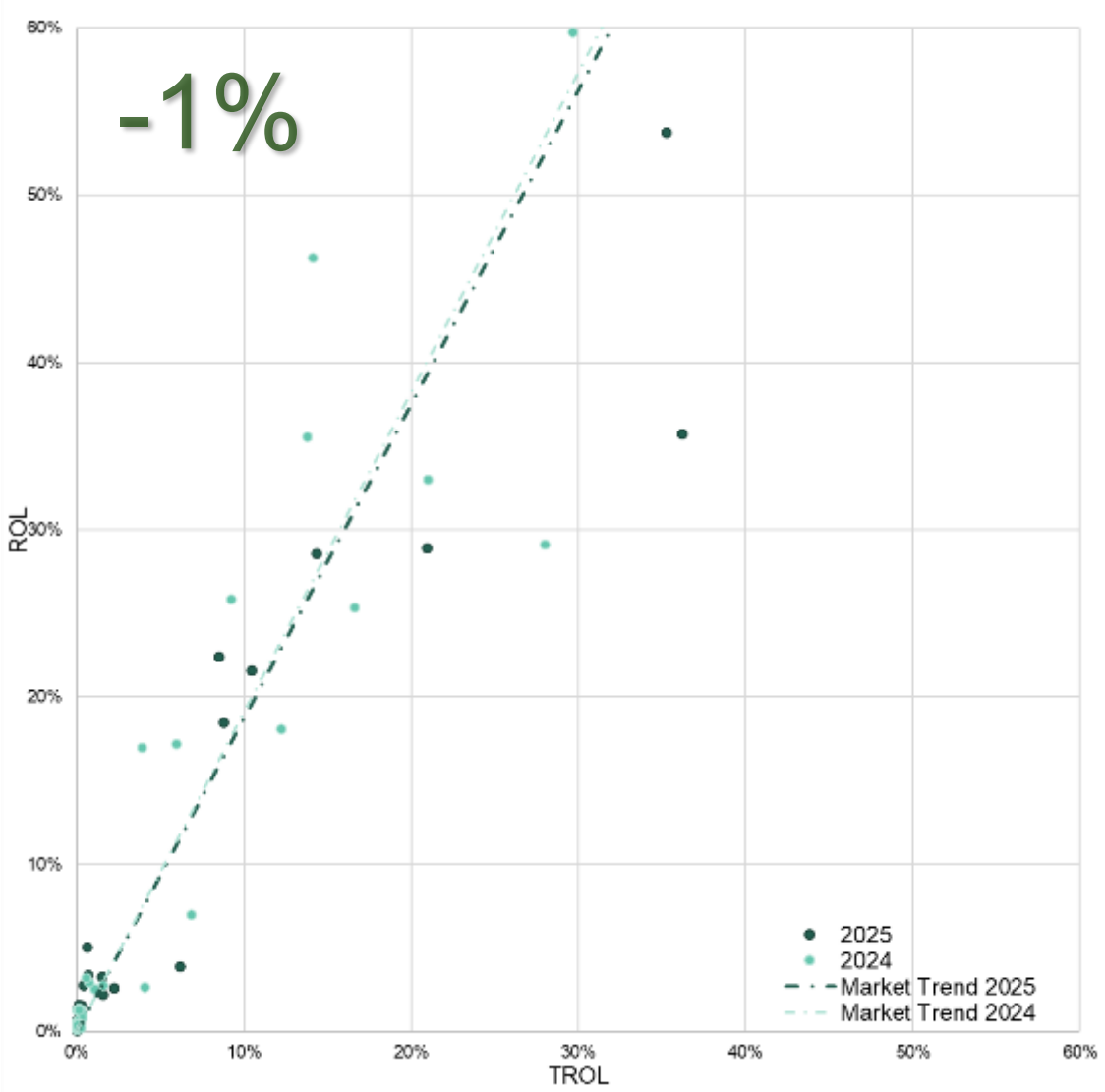
(source: Howden Re)

For each program, losses ceded to the layers have been modelled and compared to each single cost layer. The claim history has been modelled using a Frequency-Severity approach applied to inflated losses trended to ultimate. In cases where the claim history was not sufficient to represent the risk, exposure rating methodology has been used.

In the scatter plot, each point represents a layer, where Rate-on-Line is compared to the Technical Rate-on-Line, namely the modelled loss discounted for the paid reinstatements, if any.

The change in slope between the market curves represents the loading applied by the reinsurance market, that we estimate **to be flat** for Fire Risk programs.

Risk Adjusted Renewal 2025 – MTPL



(source: Howden Re)

For each program, losses ceded to the layers have been modelled and compared to each single cost layer. The claim history has been modelled using a Frequency-Severity approach applied to inflated losses trended to ultimate. In cases where the claim history was not sufficient to represent the risk, exposure rating methodology has been used.

In the scatter plot, each point represents a layer, where Rate-on-Line is compared to the Technical Rate-on-Line, namely the modelled loss discounted for the paid reinstatements, if any.

The change in slope between the market curves represents the loading applied by the reinsurance market, that we estimate **-1%** for MTPL programs.

Overview of TUN (Tabella Unica Nazionale)

As of 5th of March 2025, the compensation for claims with severe disability (greater than 10 points) arising from Motor third-party liability and medical malpractice will follow the TUN (Tabella Unica Nazionale), ensuring much more uniformity than in the past.

Disability Points (% Var.)	Age 1	10	20	30	40	50	60	70	80	90	100
10	0%	0%	0%	0%	0%	0%	0%	1%	1%	2%	3%
15	5%	5%	5%	5%	5%	5%	5%	6%	6%	7%	9%
20	4%	4%	4%	4%	4%	4%	4%	5%	5%	6%	7%
25	1%	1%	1%	1%	1%	1%	1%	2%	2%	3%	4%
30	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-1%	-1%	1%
35	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-4%	-4%	-2%
40	-6%	-6%	-6%	-6%	-6%	-6%	-5%	-5%	-5%	-4%	-3%
45	-7%	-7%	-7%	-6%	-6%	-6%	-6%	-6%	-5%	-5%	-3%
50	-7%	-7%	-7%	-7%	-7%	-7%	-7%	-7%	-6%	-6%	-4%
55	-8%	-8%	-8%	-8%	-8%	-7%	-7%	-7%	-7%	-6%	-5%
60	-7%	-7%	-7%	-7%	-7%	-7%	-7%	-6%	-6%	-6%	-4%
65	-6%	-6%	-6%	-6%	-6%	-6%	-6%	-5%	-5%	-4%	-3%
70	-4%	-4%	-4%	-4%	-4%	-4%	-4%	-3%	-3%	-3%	-1%
75	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-1%	-1%	0%	1%
80	0%	0%	0%	1%	1%	1%	1%	1%	2%	2%	4%
85	3%	3%	3%	3%	3%	3%	4%	4%	4%	5%	7%
90	6%	6%	6%	6%	6%	6%	6%	7%	7%	8%	10%
95	9%	9%	9%	9%	9%	9%	9%	10%	10%	11%	13%
100	12%	12%	12%	12%	12%	12%	12%	13%	13%	14%	16%

TUN vs. Milan Table by Disability Points/Age

Example 1. 22 years old with 47 disability points

Tabella di Milano 2024

Danno non Patrimoniale	
Danno biologico	296,265.06
Danno morale	148,132.53
Totale	**444,397.59**

Tabella Unica Nazionale 2024

Danno non Patrimoniale	
Danno biologico	286,399.92
Danno morale	127,734.37
Totale	**414,134.29**

Example 2. 45 years old with 30 disability points

Tabella di Milano 2024

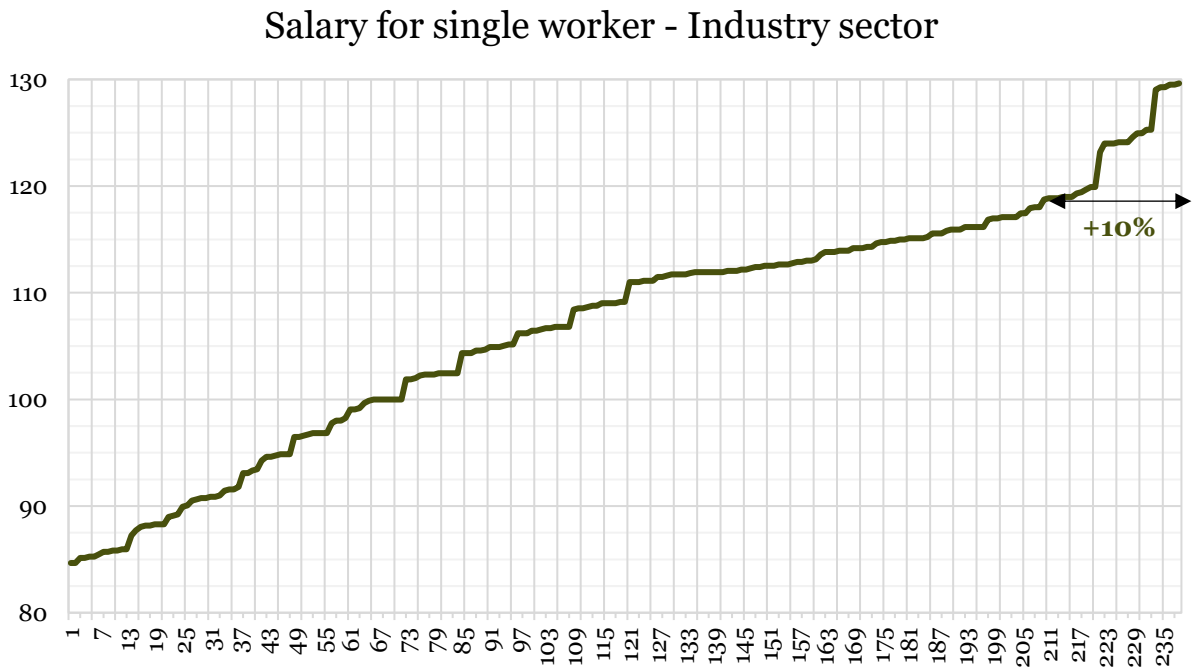
Danno non Patrimoniale	
Danno biologico	117,166.14
Danno morale	53,896.42
Totale	**171,062.56**

Tabella Unica Nazionale 2024

Danno non Patrimoniale	
Danno biologico	119,846.58
Danno morale	47,579.09
Totale	**167,425.68**

Wording Casualty Program: Focus Full index clause +10%

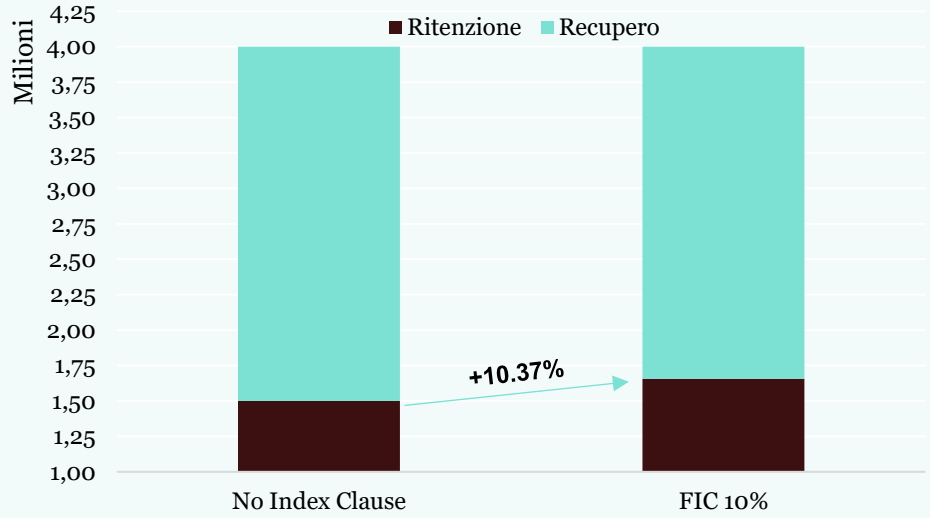
Index clause in casualty programs is common practice. Generally, such clause is linked to the wage **salary** indices provided by ISTAT monthly, less sensitive to unexpected changes in general inflation (CPI). However, in the last two years, due to the severe increase in inflation, this index has experienced an unprecedented spike, triggering the indexation clauses. 2022 and prior YoL will be affected resulting in a significant increase in retention levels.



Example

Increse in retention due to full index clause: +10.4% (+156k circa) in net retained loss by the Cedant.

Loss	S1234567890
Date of Loss	15/02/2022
Retention	1,500,000
Index Clause	FIC 10%
Date of Settlement	15/11/2024
Amount Paid	4,000,000



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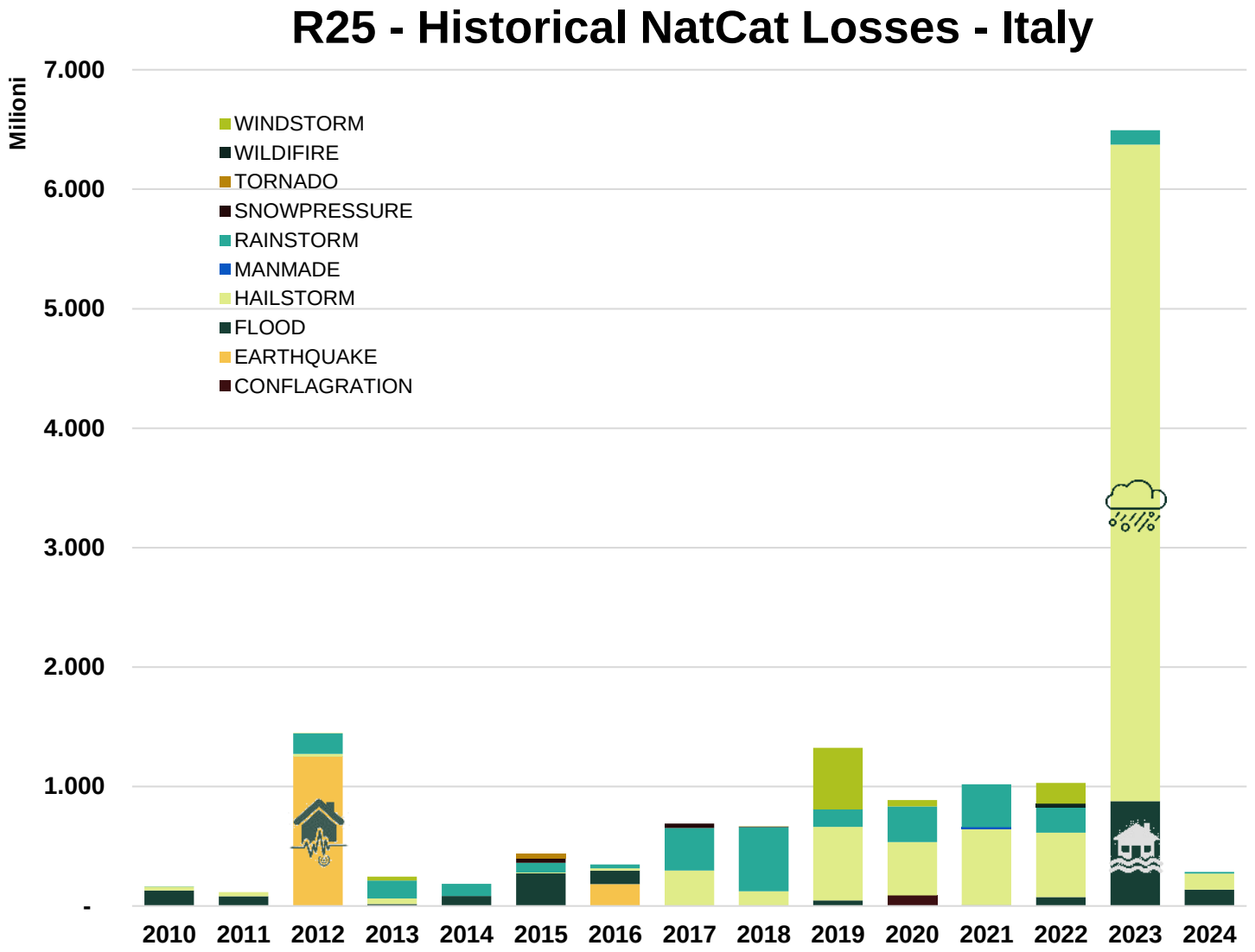
SECTION

04

Italian Nat Cat Market in Transformation

A Market in Transformation

Recent Large Losses



A Market in Transformation

Recent Large Losses – 2023 SCS

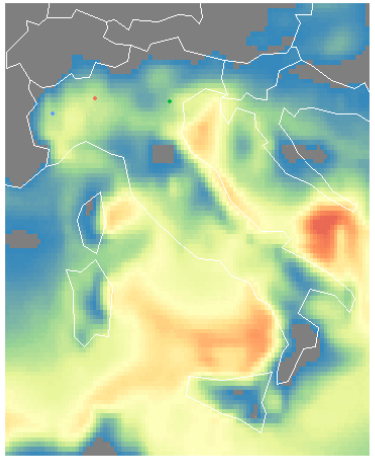
- An extremely severe series of SCS events, hitting large areas of north Italy over the month of July 2023
- The level of severity and clustering was **unprecedented and exceeded all estimations** of models available at the time
- Previous reserving techniques proved to be inadequate for such level of severity, resulting in a **large loss creep**

1000y Initial model estimates of corresponding Rp exceeded 1000y

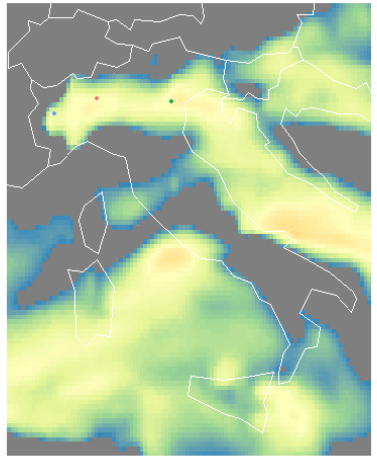
100y Revised estimates now place the event in the 100y range

+53% Final loss creep exceeded 50% growth (70% if only ceded loss is considered)

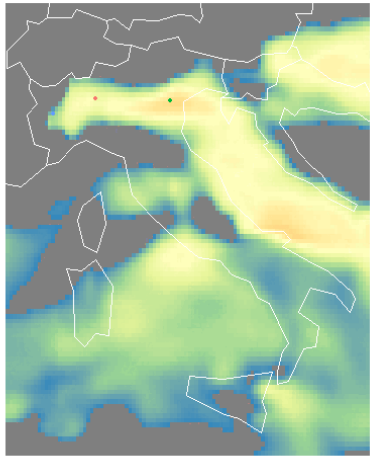
Convective Energy (CAPE)
Data Source: ECMWF - Elaboration: HowdenRe



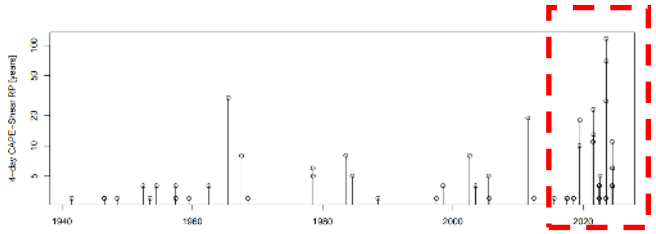
Total Totals Index
Data Source: ECMWF - Elaboration: HowdenRe



K-Index
Data Source: ECMWF - Elaboration: HowdenRe



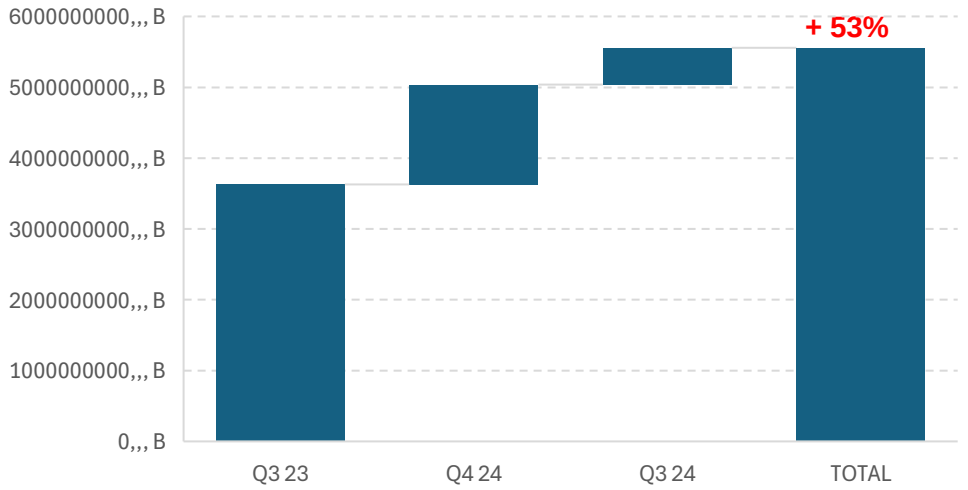
Dates		3-day CAPE-Shear (Return Period)
18/07/23	21/07/23	≥70y
22/07/23	25/07/23	≥70y
10/07/23	13/07/23	≈30y



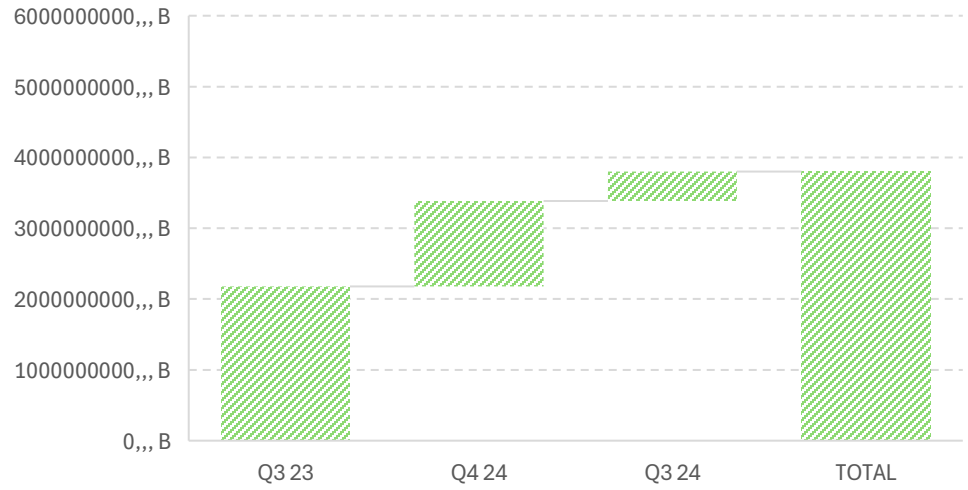
ECMWF

Howden's elaboration of climate data reanalysis (data provided by ECMWF)

FGU (Top 3 July Events)



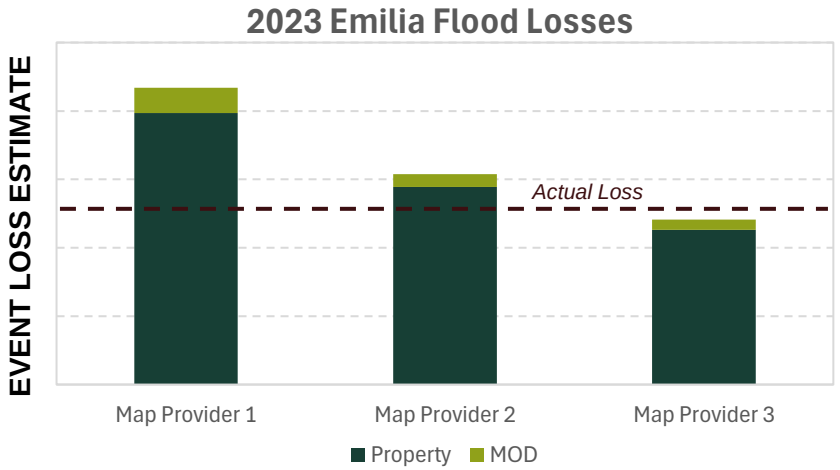
NET CEDED (Top 3 July Events)



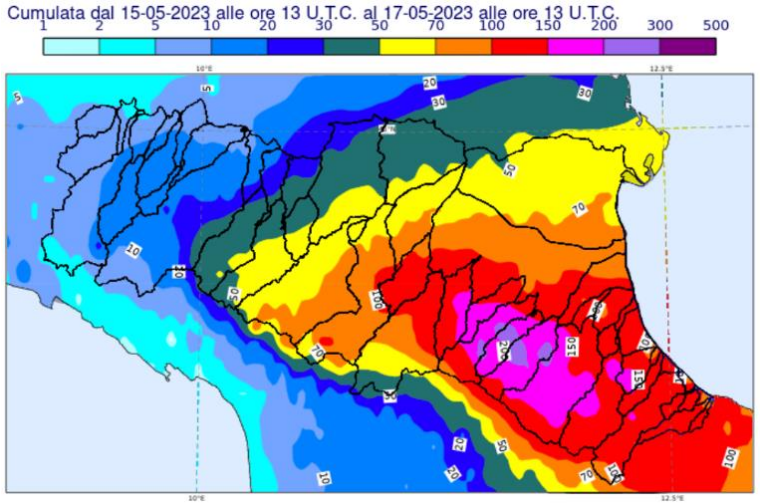
A Market in Transformation

Recent Large Losses – 2023 FL

- In the same year a massive flood event (inundated area > 350km2) hit North Italy. Beyond the economic loss, the event resulted in 15 deaths and 36,000 people evacuated.
- **The event was not «a surprise».** The impacted area is known to be susceptible to severe flood events
- Maps and models could adequately capture the severity of the event
- The **estimated return period for the market is 25y circa**. Impact on single companies was quite diverse due to the localized nature of the peril

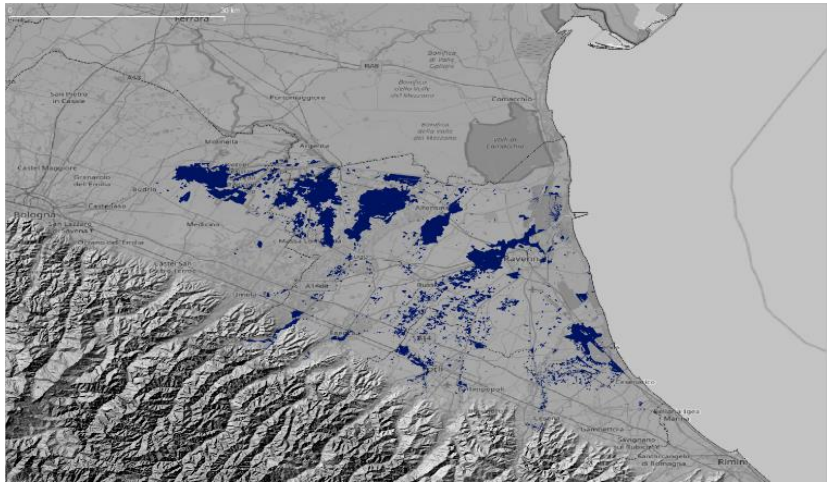


Cumulative Rain



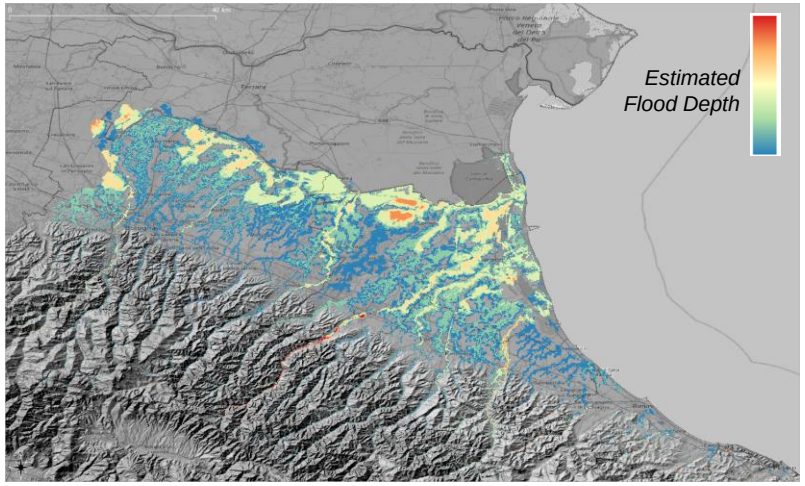
During the highest alert period, cumulative rainfall peaks were recorded, with levels between 200 mm and 300 mm, with peaks of 500 mm (source: Arpa Emilia Romagna)

EU Copernicus Maps



Source: satellite data from Copernicus

RMS post-event maps



Source: Moody's RMS

A Market in Transformation

Compulsory Nat Cat Scheme

Definition — *Implementation*

December 203	January 2025	April 2025	October 2025	January 2026
National budget law introduces the obligation of Cat cover for enterprises	Implementation decree with details of the scheme is published	Obligation starts for large enterprises only	Obligation starts for medium enterprises as well	Obligation starts for small enterprises as well

Perimeter

- All private enterprises, with the exception of agro business must buy Nat Cat insurance coverage
- Approx 4.5mil businesses impacted

Coverages

- Building & Content (goods excluded)
- Damage to land also covered

Sanctions

- Monetary fine for insurance companies not providing underwriting
- Exclusion from state contribution for enterprises without coverage

Perils

- Earthquake
- Flood (fluvial only)
- Landslide

Policy Conditions

- Max 15% loss ded + Limit 100% or 70% or free negotiation, depending on TIV thresholds (1mil / 30mil)
- Premium proportional to risk

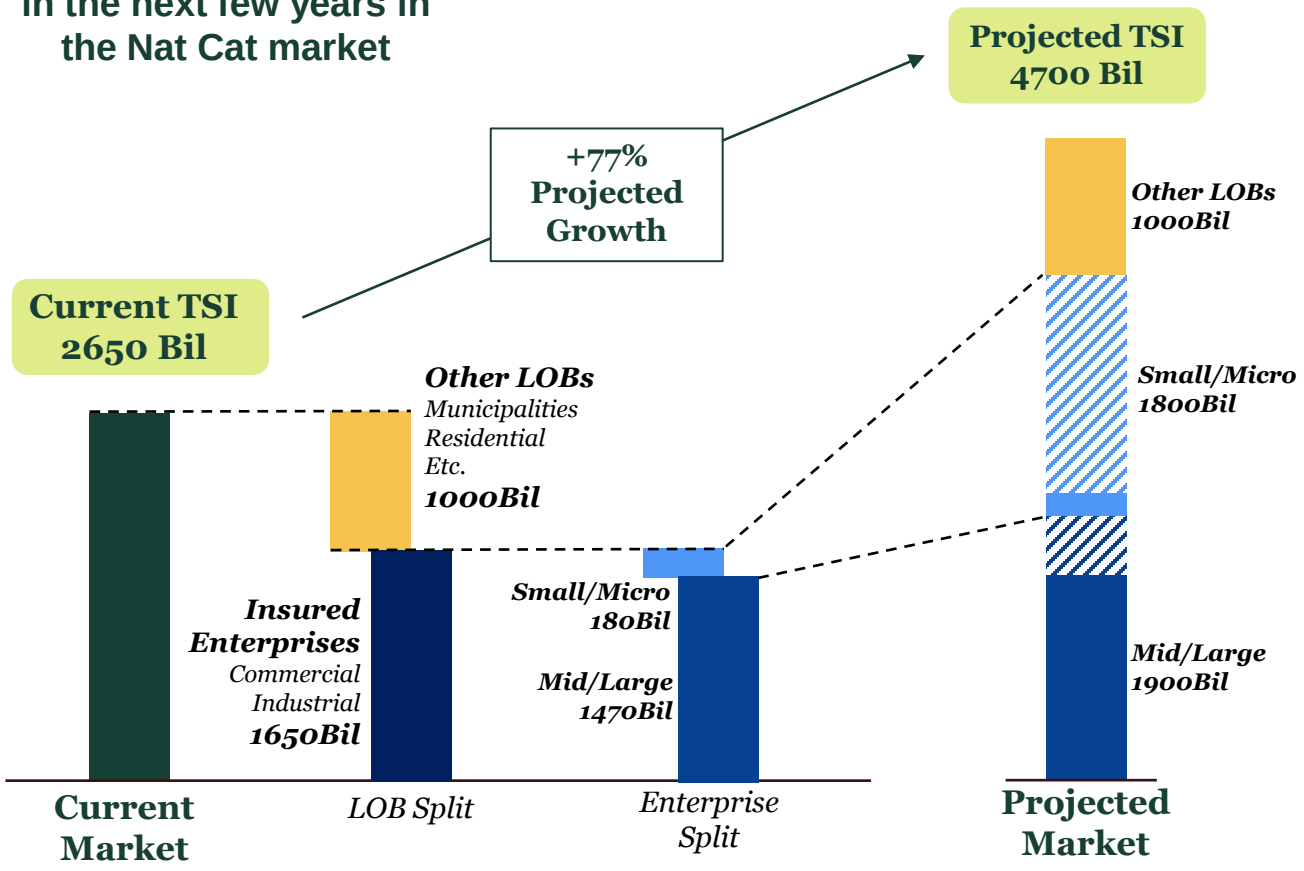
State Capacity

- Government contributes with 5Bil Eur reinsurance capacity until YE26
- State capacity can cover up to 50% of the insured losses and it is provided at market price to insurance companies

A Market in Transformation

Compulsory Nat Cat Scheme

Large Growth expected in the next few years in the Nat Cat market



Based on elaboration of various data sources (market data, census data and Perils)

TSI Growth

- Large growth expected in the small/micro enterprise space
- Smaller impact in the large corporate space
- TSI growth could reach almost +80% (approx. +2000 Bil Eur)

Capital Requirements

- Current market local reinsurance capacity is approx. 10Bil Eur
- Additional reinsurance capacity of **10+ Bil Eur will be required**

Additional Premium

- Current fire market premium is approx. 3Bil Eur
- The new Cat scheme could generate an **additional direct insurance premium >1Bil Eur**

Uncertainties

- The scheme is starting very slowly, amidst various postponements
- Sanctions are quite bland and **pace of scheme penetration remains uncertain**

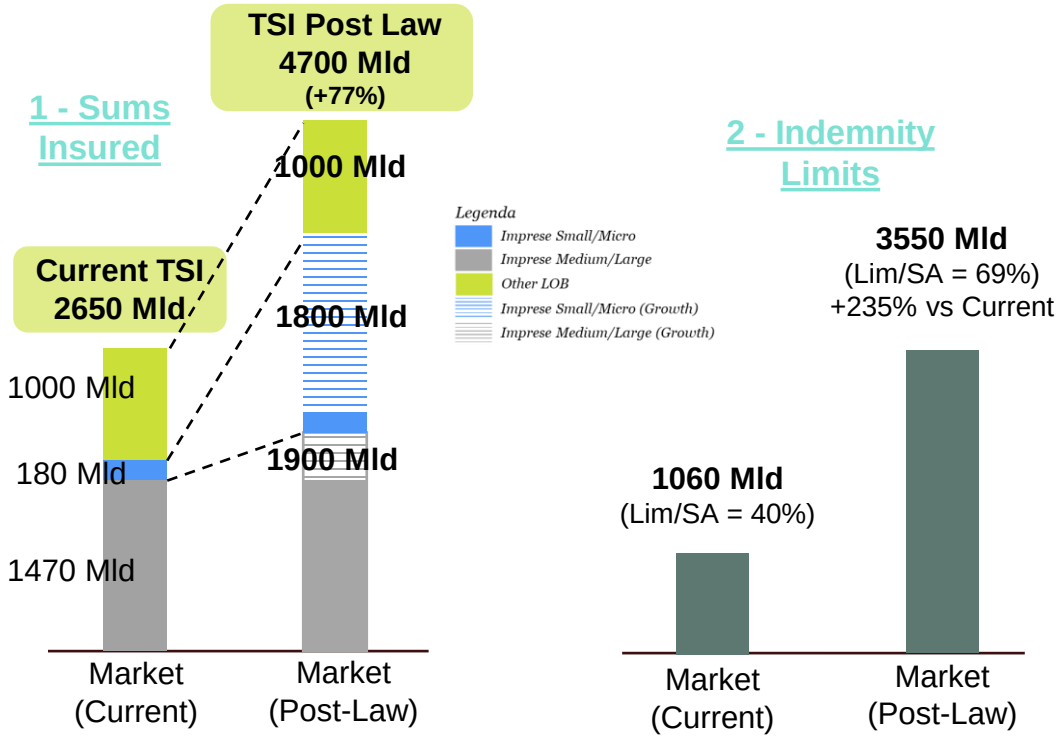
Compulsory Cat Insurance: Market Projection

Below a summary of the projection estimated in 2024, and regarded as still valid.

According to the estimations, the evolution of indemnity limits will see a significant increase due to the revision of policy conditions alone. Further increase will be generated by the pure market growth.

The most relevant probabilistic cat EQ and FL models have been used in order to analyse the projection of the post-obligation cat risk in Italy . A summary is reported to the left in terms of capital requirement and average loss:

- Growth **post-obligation market capital requirement of about 13Bln** (calculated on a probabilistic model basis)
- On Standard formula basis, growth would be higher (16Bln)



3 - Losses

Earthquake	Current Before Mandatory	Additional New	Total Post Mandatory
Capital Requirement (Prob Model - Adj View - 200yOEP)	**10,835**	11,677	**22,952**
Average Annual Loss (Prob Model - Adj View - AAL)	**561**	798	**1,426**
SCR (Solvency II Std Formula)	**22,197**	17,225	**38,709**
TIV	**2,650,000**	2,054,588	**4,704,588**
LIM	**1,060,000**	1,746,400	**3,548,900**
Flood	**Current Before Mandatory**	**Additional New**	**Total Post Mandatory**
Capital Requirement (Prob Model - Adj View - 200yOEP)	**2,627**	5,035	**7,674**
Average Annual Loss (Prob Model - Adj View - AAL)	**127**	264	**403**
SCR (Solvency II Std Formula)	**4,220**	2,135	**6,151**
TIV	**2,380,000**	2,324,588	**4,704,588**
LIM	**952,000**	1,975,900	**3,548,900**

*All Results values in Mln Eur

New Market Dynamics

The new scheme is already changing the nat cat market.
Impacts are being perceived on both the **technical** side and on the **commercial** side:

More Sofisticated Underwriting

The new tariffs being developed are more granual and allow for a much more sofisticated risk selection compared to the past.

Demand for high resolution data

Development of more sofisticated tariffs demands high resolution models, both in terms of vulnerability identification and geographical variability.

More Rigorous Portfolio Management

The expectation of a quick growth of Cat portfolios is stimulating a more rigorous approach to portfolio management, with precise budget settings and regular risk accumulation verifications.

Increased competition on Cat Nat

The compulsory scheme has stirred competition within the NatCat space, with some players willing to enlarge their footprints and others aiming at defending their market share.

Need for (some) tariff standardization/benchmarking

Different views of the risk and high-res / articulated tariffs are resulting in very diverse offerings across players. The market is still adjusting and an official benchmarking tool is being drafted by the regulator.

New Reinsurance solutions being explored

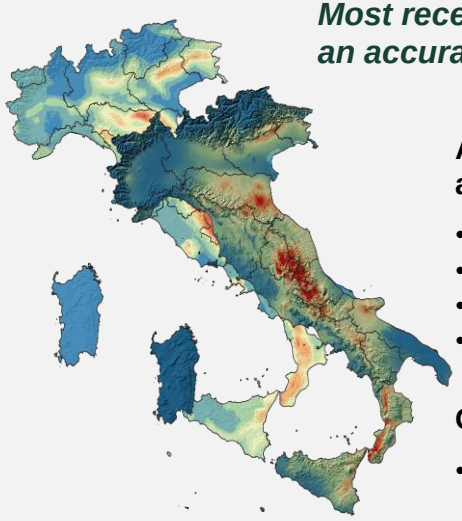
Even though at the moment there seem to be ample non-proportional reinsurance capacity, dedicated proportional solutions have been implemented and alternative solutions are being explored (risk pooling)

Cat Modelling Industry Supporting the Evolving Market

Many companies have developed new Cat tariff for enterprises in 2024. Most of the new solutions have revolved around the **usage of probabilistic modelling approaches**, particularly for the two driving perils, EQ and FL

QUAKE

A «traditional» peril for Italy, with long standing modelling solutions available, and a very productive scientific community (in Italy and in EU)



Most recent EQ tariff improvements included an accurate definition of risk vulnerability

Advantages of EQ modelling most widely appreciated in pricing

- Detailed vulnerability definition
- Introduction of secondary modifiers
- Precise upfront capital cost allocation
- Appropriate policy condition evaluation

Outstanding topics

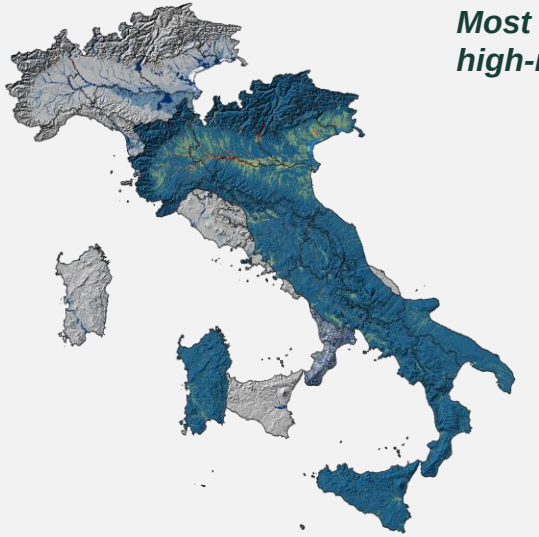
- Awaiting for commercial model updates to integrate most recent science

Data: ESHM20, Moody's RMS

Mapping: Howden Re

FLOOD

More recent modelling solutions compared to EQ. The risk estimation still presents large variabilities across alternative solutions.



Most recent FL tariff improvements included high-resolution (map-based) underwriting

Advantages of FL modelling most widely appreciated in pricing

- A more granular definition of the hazard over the territory (Lat/Long underwriting), for a more accurate pricing and a better control of antiselection

Oustanding topics

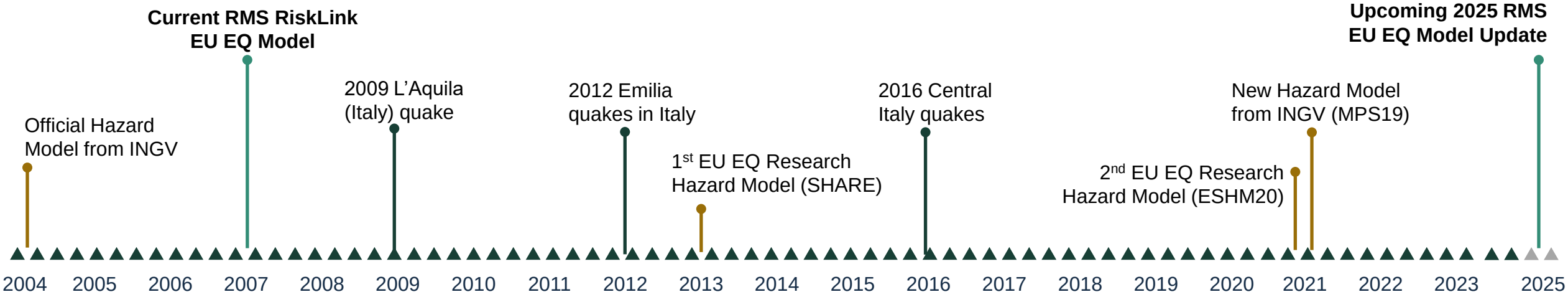
- Underlying uncertainty still large
- Pluvial/Fluvial definition not fully in line with law requirements

Data: ISPRA, Moody's RMS

Mapping: Howden Re

Cat Modelling Industry Supporting the Evolving Market in Italy

Integration of Recent Science into Model Updates (EQ)



Understanding the Risk

- 2004. The INGV releases the reference national hazard study for Italy
- 2013. The 1st open source seismic hazard model is released (SHARE)
- 2021. The open source seismic hazard model is updated (ESHM20) + the new seismic hazard model (MPS19) by INGV is published

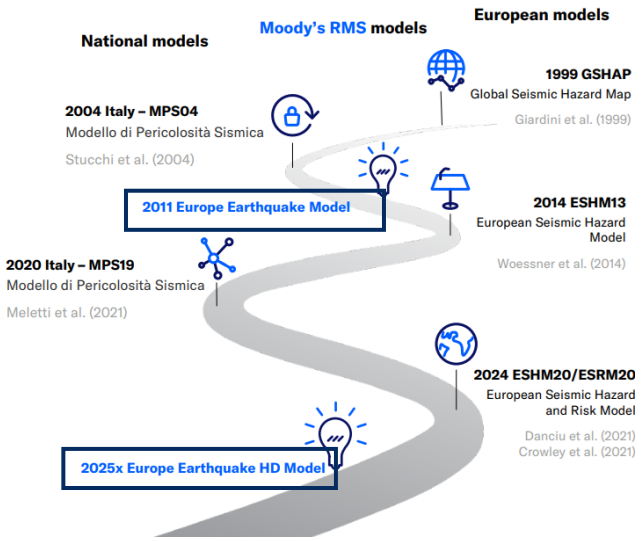
Lessons Learned (from past events)

- 2009. L'Aquila (Central Italy) quake – well recorded, many insights in masonry buildings
- 2012. Emilia (Northern Italy) quakes – unexpected seismic deficiencies
- 2016. Central Italy quakes – performance of historical constructions

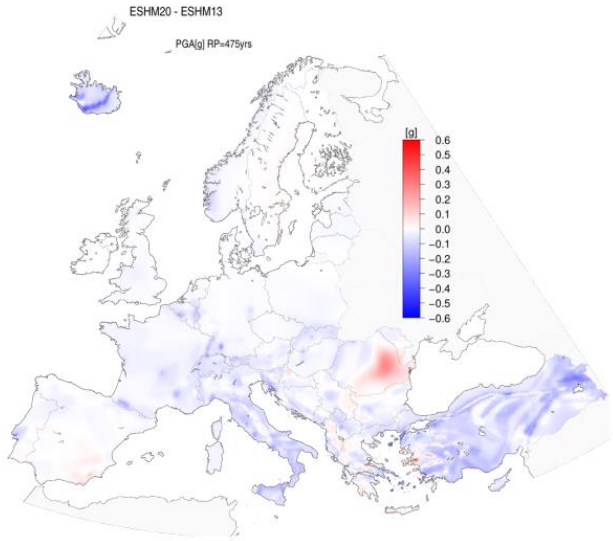
Tools for the (Re)insurance Industry

- 2007. The current RMS RiskLink EUEQ model is released
- 2025. The RMS EUEQ model update is released

Moody's RMS EU Earthquake HD Model to be released in late 2025



Significant progress and new knowledge on seismic hazard and risk as a result of detailed studies that have been conducted since RMS' EU EQ model release in 2011



The recently released (May 2022) European Seismic Hazard Model 2020 (ESHM20) is considered as a benchmark for seismic hazard in Europe and the first base for complete rebuild of Moody's RMS Model.

Red color indicates an increase of PGA (g) hazard values when compared with the predecessor ESHM13 study for a return period of 475yrs, particularly relevant for the Vrancea region.

RMS HD EQ Model: A comprehensive update across all components;

- Expanded event set that reflects the latest catalogues and science
- Larger volume of strong motion recordings
- New ground motion models and sedimentary basin models
- Large volume of high-resolution soil data and updated liquefaction and landslide models
- Recalibrated damage functions and updated inventory distributions and regions
- New Industry Exposure Database (IED) and Industry Loss Curves (ILCs)

The comparison with the previous release of the model (ESHM13) indicates an increase of the hazard intensity in the Vrancea region.

The right time to get ready for the release of the Moody's EU Earthquake HD Model in 2025/2026

Cat Modelling Industry Supporting the Evolving Market in Italy

Current Challenges in Flood Underwriting

Lat/Long Underwriting

Flood is a very high gradient risk. Appropriate risk selection at underwriting is crucial.

Various players have quickly transitioned to **lat/long underwriting via remote server API solutions.**

Pluvial/Fluvial distinction

Compulsory scheme covers only the fluvial risk.

Currrently there is **no complete alignment between fluvial/pluvial definition within cat models and from law requirements**.

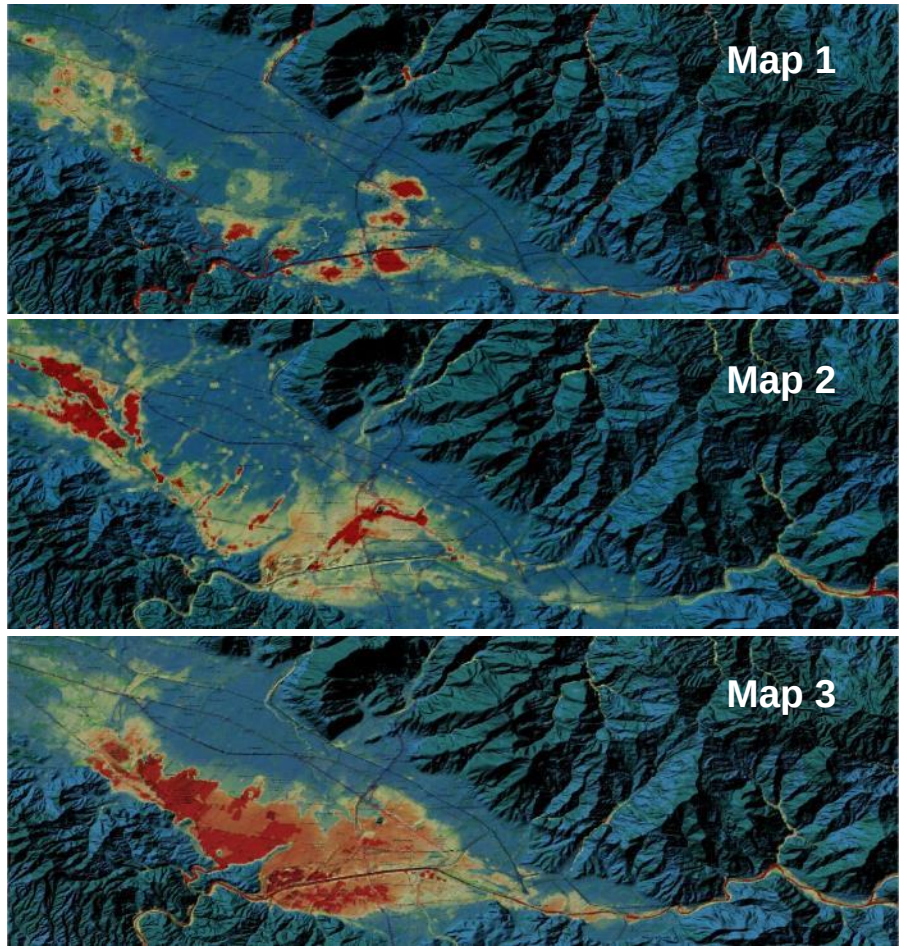
Underlying uncertainties

High-res underwriting heavily relies on floodable area definitions. Currently we still observe large discrepancies between different solutions at local scale in certain areas. **Detailed and transparent feedback from RMS has helped implement applications in the most appropriate way.**

Climate Change Impact

Despite the impact of climate change on pluvial and fluvial risk in Italy being still uncertain, modelling solutions are available for a proper quantification. **Climate change assessments could be offered via the RMS climate conditioned models for Italy.**

Risk views can differ significantly at local scale in certain areas



Data source: various providers

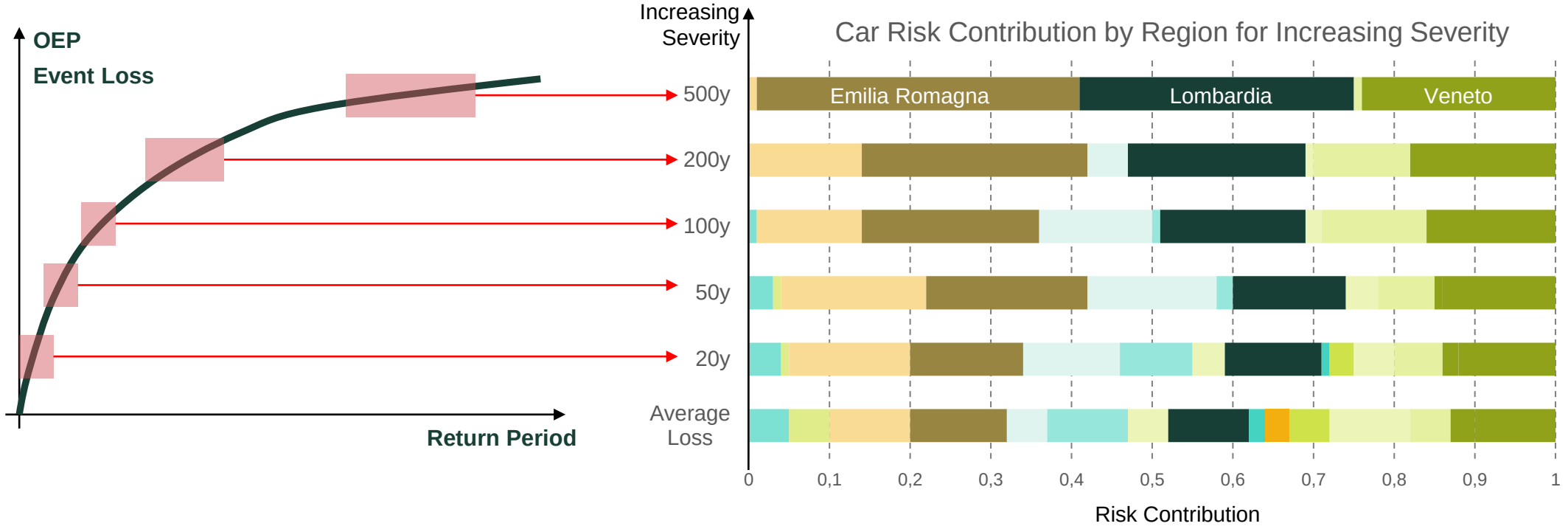
Cat Modelling Industry Supporting the Evolving Market

Risk Accumulation Monitoring

- Quickly growing portfolios require procedures for an appropriate risk accumulation monitoring
- Detailed model results allow for an accurate identification of risk accumulation areas
- The availability of a complete model suite for all perils in Italy ensures full coverage for all cat risk

Tail risk often driven by only a limited number of regions

OEP Model Curve → **OEP Geographical Decomposition**

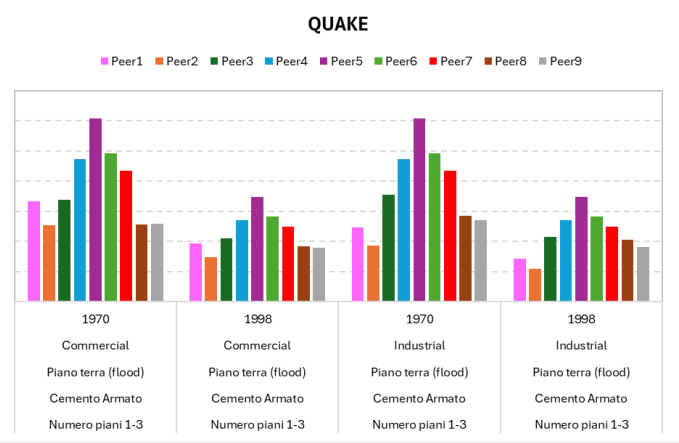


Compulsory Cat Insurance: Tariff Development

In developing Nat Cat tariff to response to the introduction of a compulsory national scheme (Quake + Flood + Landslide):

- ✓ **Multi-model approach** (both commercial and opensource) and deep insight across model divergence (particularly relevant for flood UW)
- ✓ **Model result improvement** with the adoption of additional other data (recent flood event maps, satellite data from Copernicus, basins' authorities, etc.)
- ✓ Proven implementation of **UW tariffs at both high resolution (Lat/Long)** level and aggregated (municipality/postalcode)
- ✓ Tariff calibrations based on the **first round of feedbacks from the market** (agents/direct intermediaries)
- ✓ Dedicated reinsurance solutions, including proportional cessions

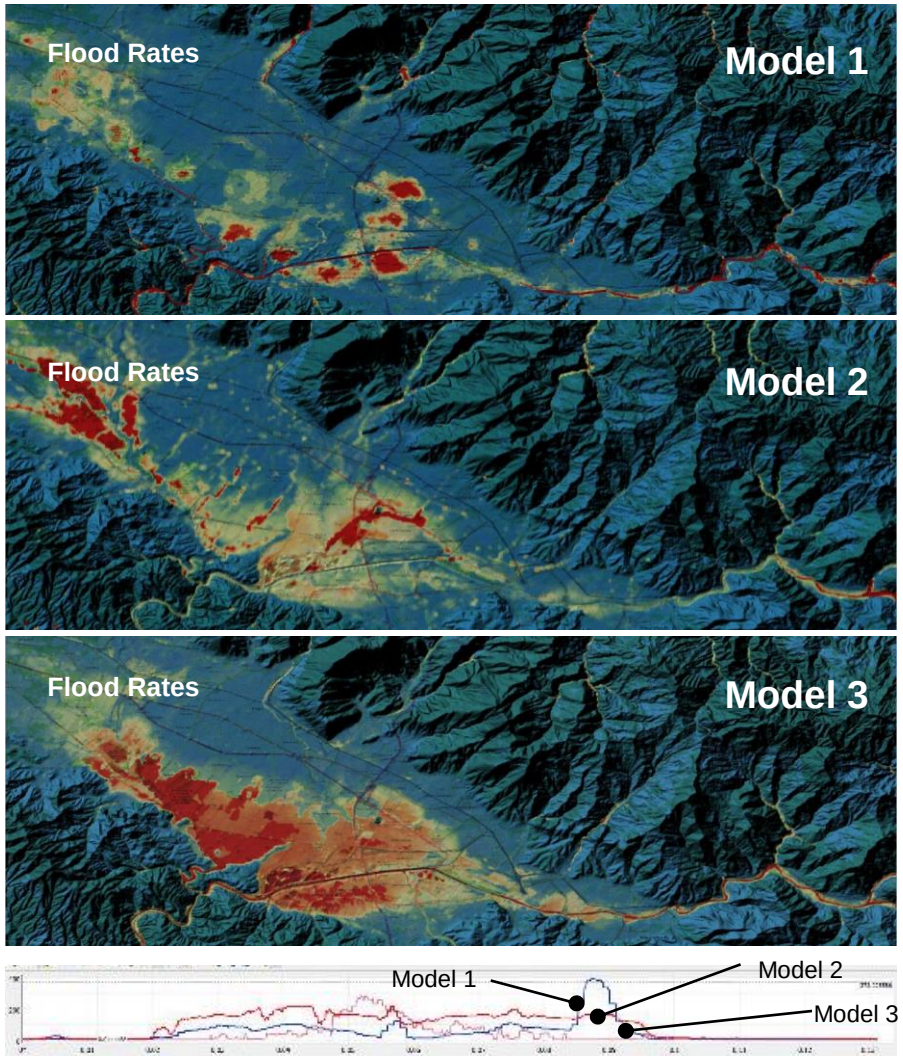
Examples of **second opinion and benchmark** on their tariffs (developed internally or via other providers)



- Broad market view
- Benchmark of **technical loading**
- Benchmark of **expenses and other costs**
- Benchmark of **tariff variables** and level of granularity
- Benchmark of **spatial resolution**
- Benchmark on pricing **land coverage**
- Benchmark on **prop reinsurance**

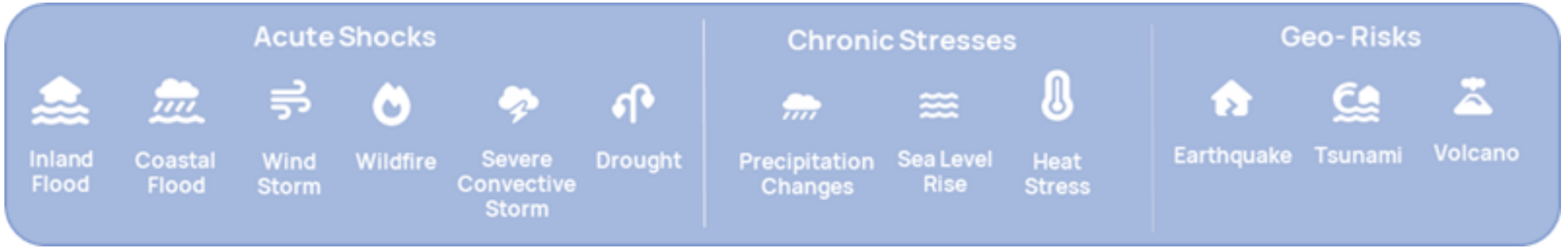
Flood Model Variability on a Small Scale

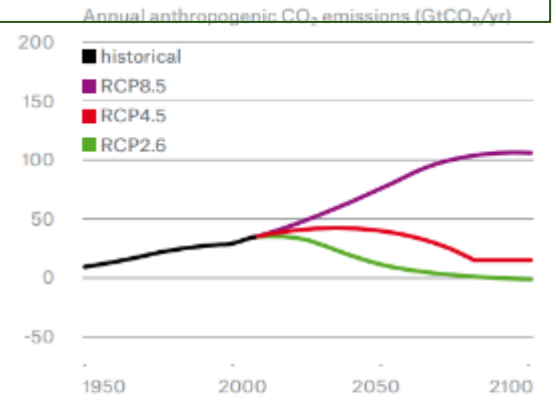
Example of Florence Valley



Climate Change & ESG

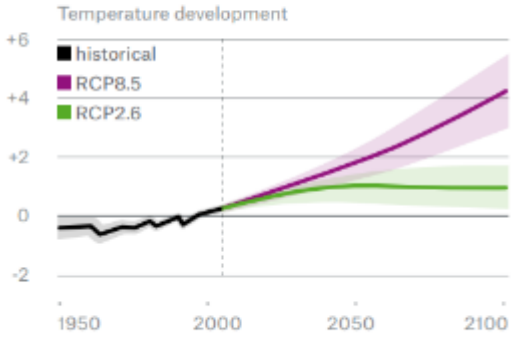
Current and conditioned forward looking scenarios for a climate change based risk analysis, relative to the following perils could be implemented:





In order to capture the risk associated to climate change and to support regulatory and internal reporting requests, the following climate change scenarios can be considered:

- Scenarios: RCP2.6 (Paris Agreement), RCP4.5 (intermediate), RCP8.5 (BAU) and the SSPs equivalent
- Time horizons: 2030, 2050, 2075 and 2100



Source: AR5 Synthesis Report (https://ar5-syr.ipcc.ch/ipcc/ipcc/resources/pdf/IPCC_SynthesisReport.pdf)

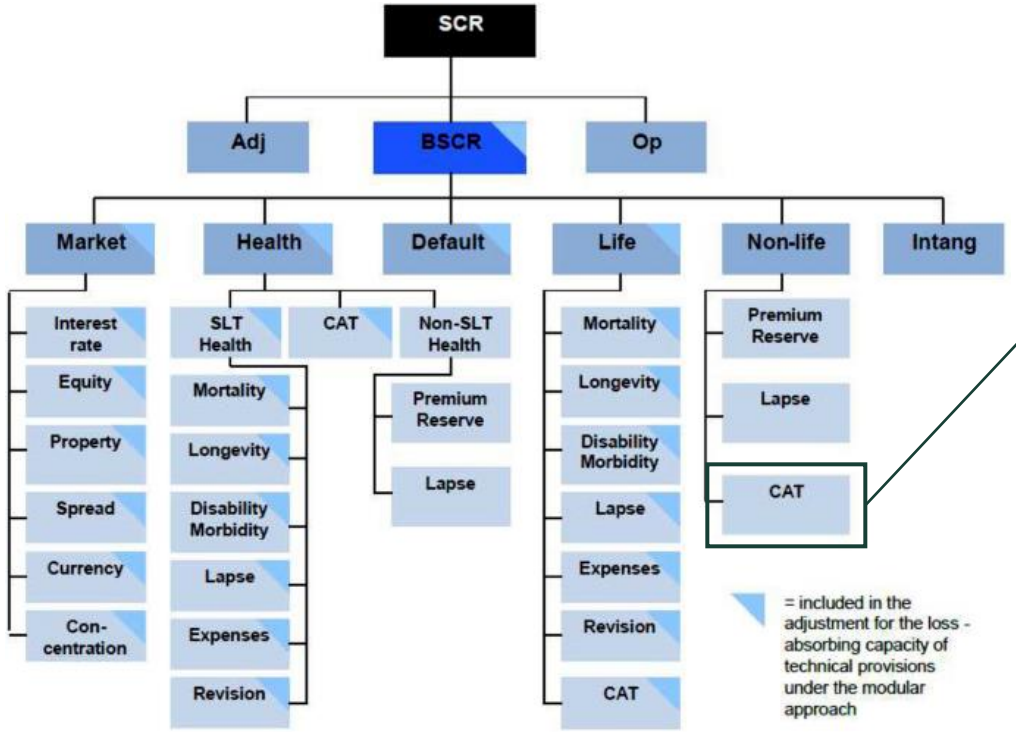
RMS Italy Flood Climate Conditioned Model

The RMS italy flood climate climate conditioned model is the only vendor model available in Italy capable of seamlessly integrating climate change analyses within insurance and reinsurance risk estimation activities, similarly to what is currently dones for «traditional» current climate models.

Cat Modelling Industry Supporting the Evolving Market

Cat Partial Internal Models

Solvency Capital Requirement Calculation According to EUSolvency II Regulation



Usage of Probabilistic Cat Models within EU Solvency II Requirements in Italy

- Usage of Cat models within a regulatory internal model is growing together with the growth of the Italian market
- There are several advantages:
  - ✓ A **more accurate evaluation of the Cat Solvency Requirement** (often resulting in a lower monetary requirement)
  - ✓ Full consistency, from **pricing to reinsurance to risk management**
  - ✓ **More accurate risk accumulation monitoring**, compared to standard formula
- The regulator is placing additional emphasis on **flood and SCS models.**

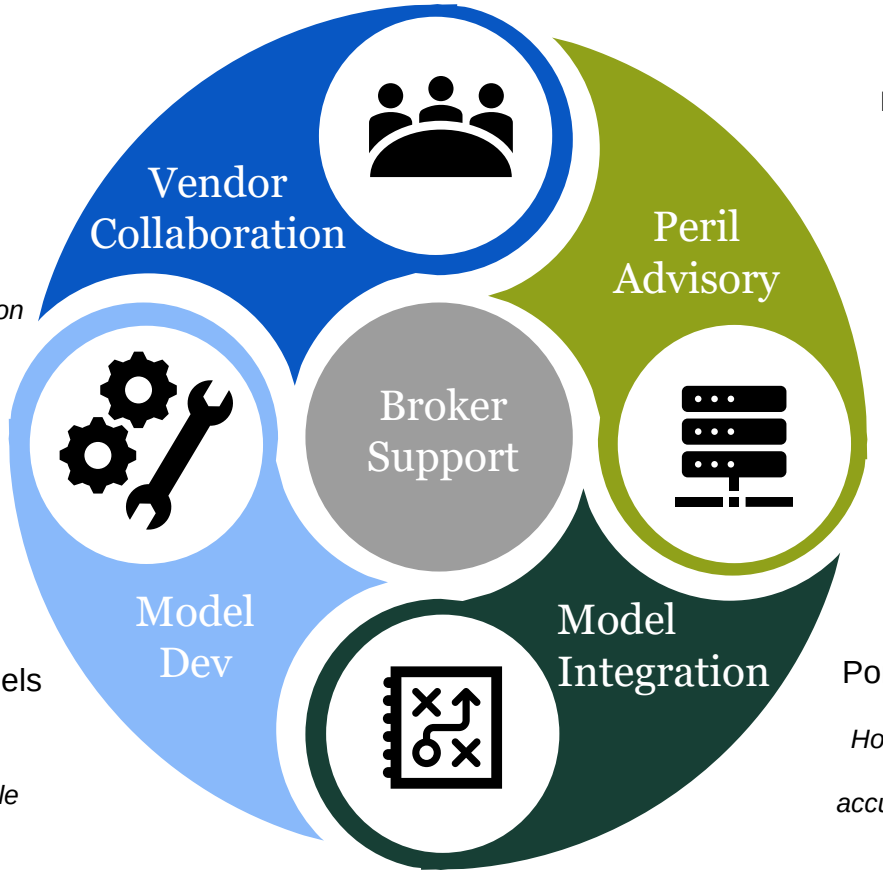
Regulatory approval requires very detailed evaluation and scrutiny from the regulator

Support in the Evolving Market

Vendor Collaboration

Special Projects | Market Feedback | Model Update | Regulatory Internal Model Implementation

Dedicated internal model documentation. Specific studies requested by regulator. Preliminary feedback on model update and assessment of impacts to ensure a smooth transition.



Peril Advisory

Model evaluation | Model Selection | Model adjustment

What is the most appropriate model for a tariff development? Advantages / disadvantages? Mean reasons behind discrepancies with other solutions? Do results need integration with external data? Is a model adjustment necessary? Is the model in line with market practice & evolution?

Model Development

Dedicated Model Development | Fill gaps in Certain territories | Build out Open Source Models | Provide proprietary tools

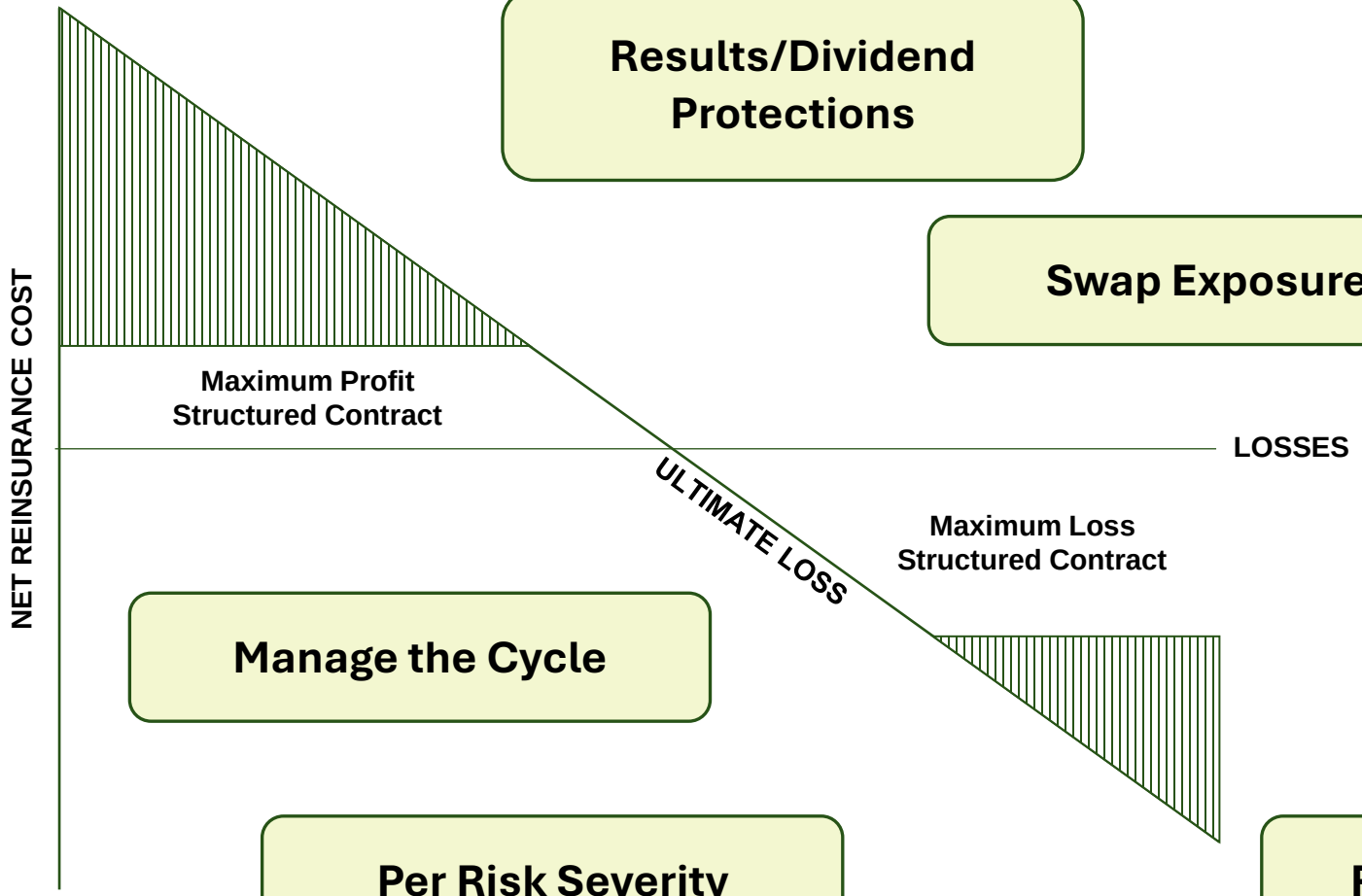
How do I quantify landslide risk? How can I quickly enable my business to price at lat/long level? How can I price damage to land?

Model Integration

Risk Management | Partial Internal Model | Portfolio Management | Accumulation Monitoring

How can I use a model for regulatory purposes? What are the advantages? How can I use models to control risk accumulations and ensure a healthy growth? How can they be integrated within my workflow?

Revamping Structured Solution



Results/Dividend Protections

Income/Loss smoothing

Swap Exposures

Capital Improvement

Run-Off derisking

Manage the Cycle

Per Risk Severity

Retention Volatility

The right time to pay attention to structured solutions

Exposures Swaps

Inwards	Market Appetite	UNL or Indexed	Market Rationale	Deal Probability
Canada Earthquake	Medium	Few UNL	Peak PML for some Re/Insurers + pricing arbitrage for some Reinsurers	
Japan Earthquake	Medium	Few UNL	Peak PML for some Re/Insurers + pricing arbitrage for some Reinsurers	
New Zealand Earthquake	Medium	No UNL	Large zone for some Re/Insurers + pricing arbitrage for some Reinsurers	
Japan Windstorm	Low	Few UNL	Large zone for some Reinsurers, Insurers have moved away from Swaps in recent years	

Outwards	Market Appetite	UNL or Indexed	Market Rationale	Deal Probability
European Wind	Med/Low	UNL	EU Wind is large PML driver for most Re/Insurers so main swap appetite is with US perils only	
Italy Earthquake	Strong	UNL	Italy EQ is a minor peril for most Re/Insurers and pricing is generally cheaper than above zones	

Transacting Swaps is all about aligning the Risk Appetite of many Reinsurers

S. I. A. s.r.l.
SVILUPPO INIZIATIVE ATTUARIALI

Grazie per l'attenzione!!

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