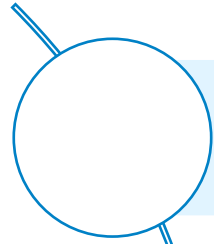


ILS Market Trends: Where Is 2023 Headed?

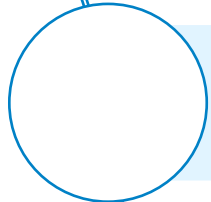
Emmanuel Modu – Managing Director, AM Best Rating Services
Matt Tuite – Associate Director, AM Best Rating Services

April 25, 2023

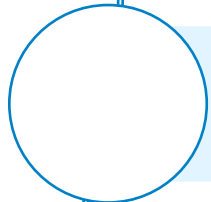
Agenda



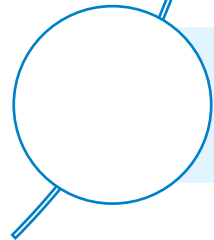
Segments of the ILS Market



Causes of the Current Reinsurance Hard Market



ILS Activities in 2023

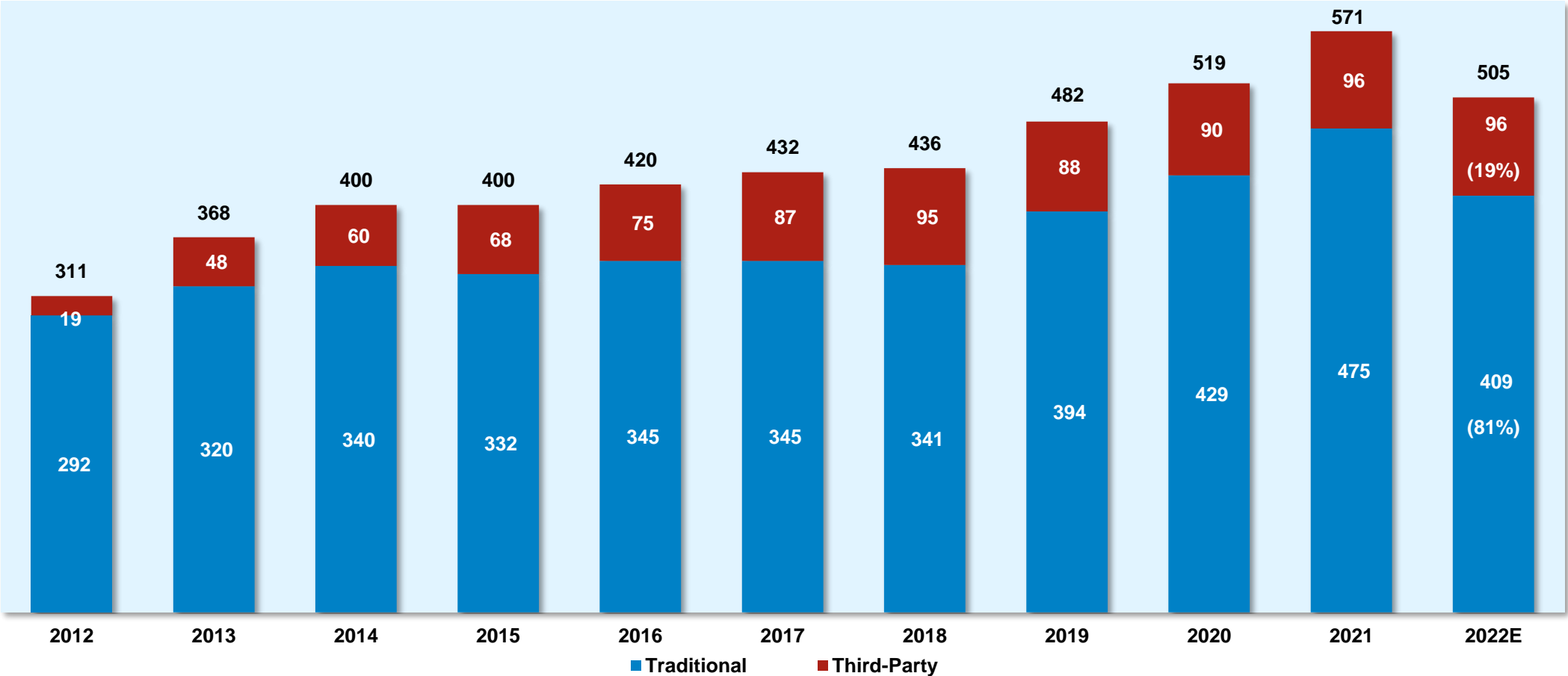


New Types of ILS Transactions on the Horizon

Segments of the ILS Market

Global Reinsurance Market Capital

Estimate – Total Dedicated Reinsurance Capital (USD billions)



Sources: Estimates by Guy Carpenter and AM Best



Unique Issues Faced by the ILS Market

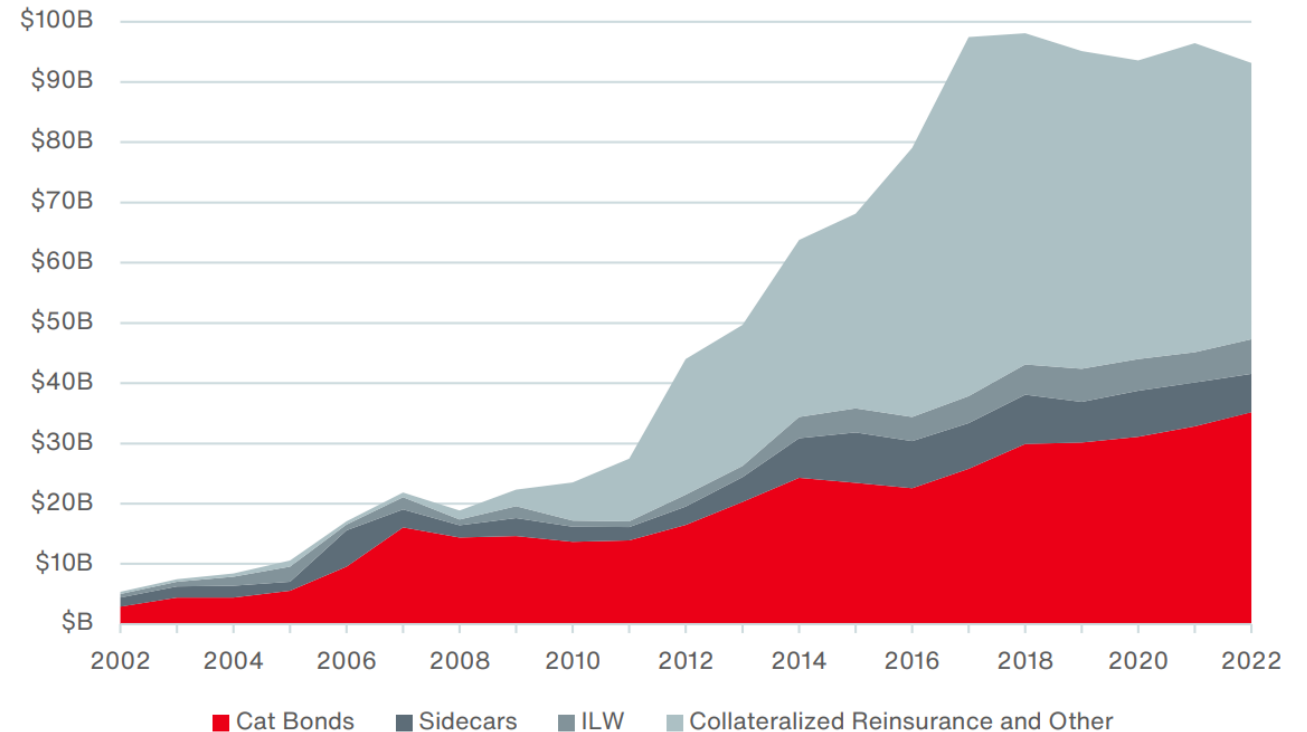
**Impermanence
of capital**

**Capital not
fungible**

**High risk
concentration**

ILS Capacity Estimate by Segment at Year-End 2022

- ILS market capacity: \$96B
 - Catastrophe bonds: \$35 billion**
 - Collateralized reinsurance: approximately \$45-\$49 billion**
 - Sidecars: approximately \$6-\$7 billion**
 - ILW: approximately \$5-\$6 billion**



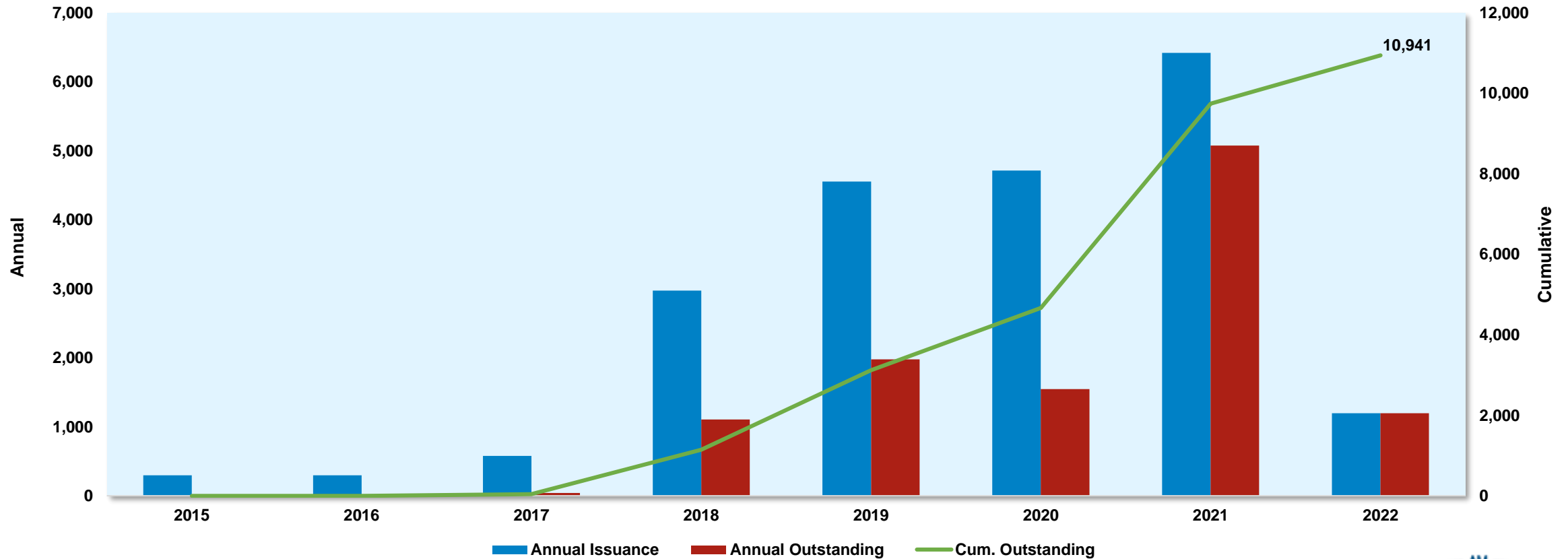
Source: AON

**Excludes cat bonds projected to have losses; ranges based on AM Best's conversation with ILS managers

ILS Capacity Estimate by Segment at Year-End 2022

Mortgage Insurance-Linked Securities (MILS – \$10.9B Outstanding)

MILS Issuance and Outstanding Balance by Year
(USD millions)



AuM of the Top 10 ILS Funds

Firm	Insurance Affiliation	Jan-23	Jul-22	Jan-22	Jul-21	Jan-21
Fermat Capital Management	Independent	8.6	8.9	8.2	8.0	7.6
Nephila Capital	State National	7.4	8.5	8.8	10.2	9.6
Renaissance Re Capital Partners	Renaissance Re	6.2	6.7	5.6	6.0	6.0
LGT ILS Partners	Lumen Re	6.1	6.8	7.6	8.2	8.0
Leadenhall Capital Partners	Mitsui Sumitomo/Nectaris Re	5.5	6.0	6.2	5.4	6.4
Schroder Investment Management	Independent	4.3	4.1	4.0	3.8	2.8
Credit Suisse IL Strategies	Independent	3.9	3.9	3.9	5.2	5.8
Elementum Advisors	White Mountains	3.7	4.1	4.3	4.4	4.4
Securis Investment Partners LLP	Independent	3.6	3.9	4.1	4.4	4.5
Aeolus Capital Management	Independent	3.3	3.3	3.3	4.0	4.0
Total		52.6	56.2	55.9	59.5	59.1

- LGT and Leadenhall have rated, dedicated reinsurers Lumen Re and Nectaris Re, respectively

Source: Trading Risk

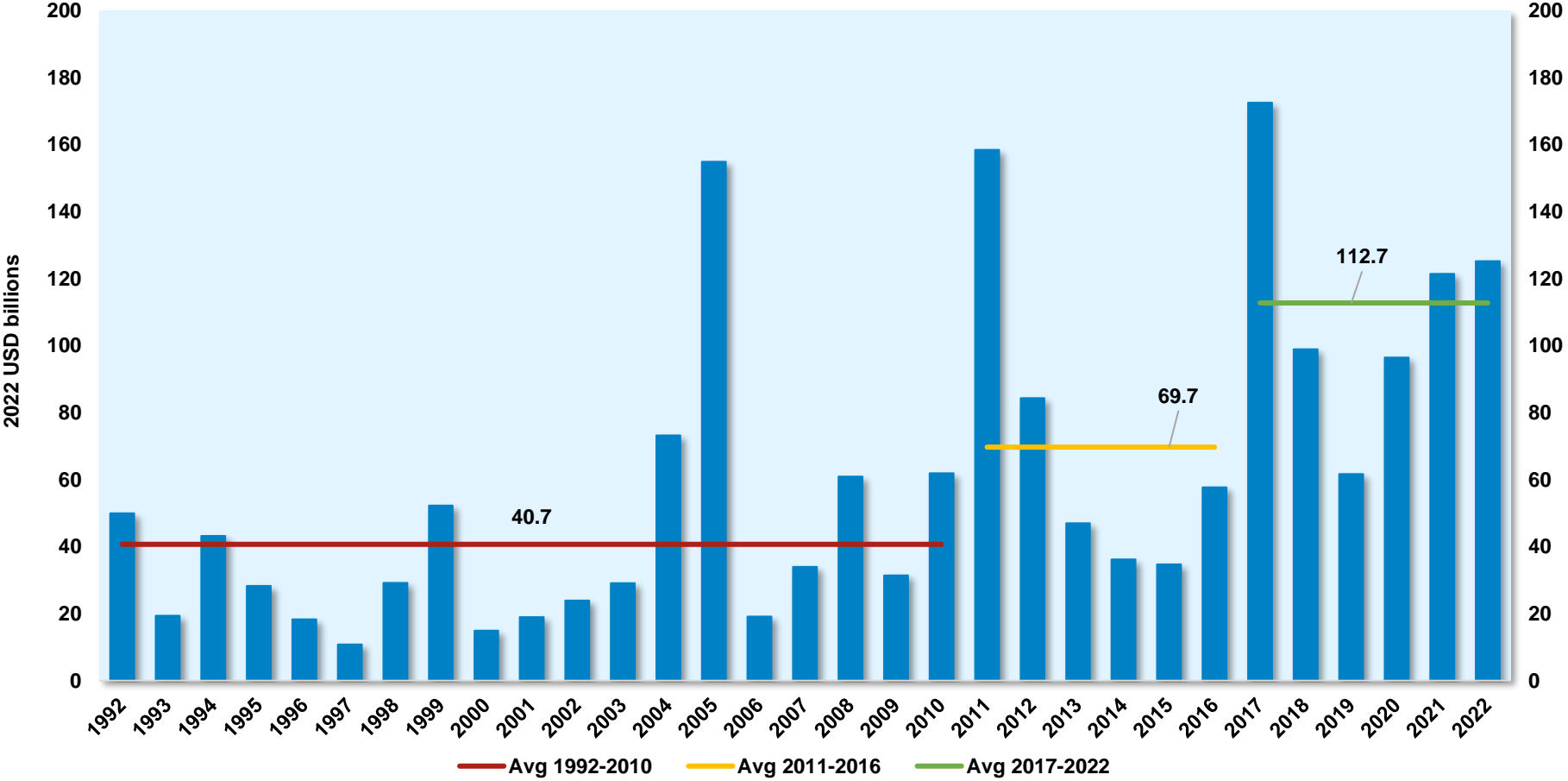
Causes of the Hard Market

Hard Market in Reinsurance

- Heightened catastrophe loss activity
 - Causing depletion and trapping of capital
- Inflation
 - Effect on insured values, costs of goods and labor
 - Inflation leads to higher stress tests, leading to higher capital requirements
 - Ultimately means more demand for capital
- Asset repricing
 - Spike in interest rates, drop in stock market
 - Asset side of balance sheet of insurers diminished, thus reducing surplus
 - Need to replace capital has caused more demand for reinsurance

Hard Market in Reinsurance

Consecutive Years of Extreme Losses



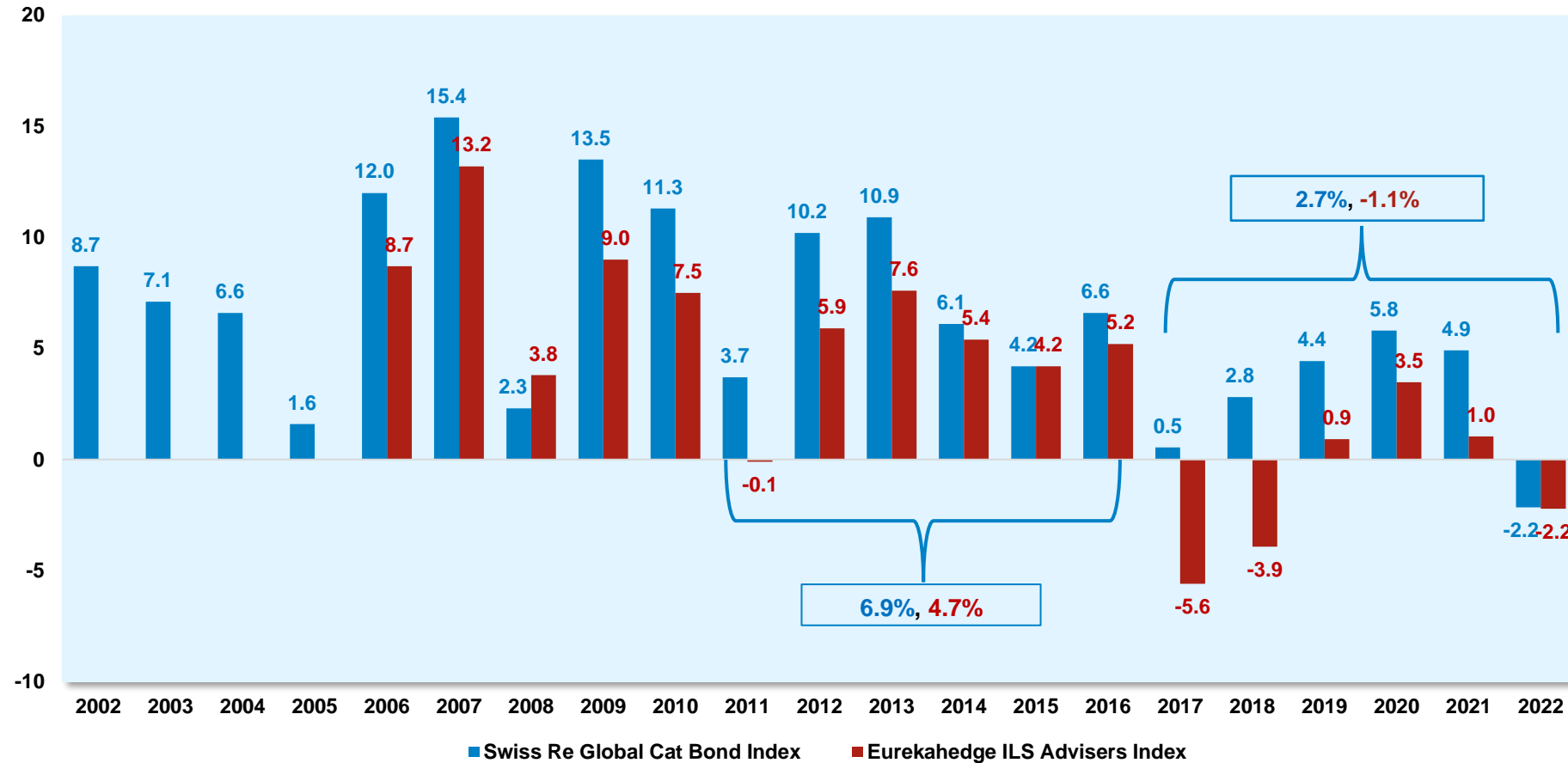
- Overall a distinct uptick in losses over the past 6 years
- Avg. cat loss from 2017 to 2022 was \$112.7bn
- 10-year avg. cat loss = \$81bn
- Supply of capital diminished due to losses and investor hesitation
- Trapped capital as high as \$20bn

Source: Swiss Re



Hard Market in Reinsurance

Consecutive Years of Extreme Losses (cont'd)



- Eureka hedge ILS Advisers Index: returns of about 26 ILS funds
- Swiss Re Global Cat Bond Index: returns of cat bond portfolios
- 10-year annualized returns from 2013 to 2022 were 4.4% and 1.5% for Swiss Re Global Cat Bond Index and Eureka hedge ILS Advisers Index, respectively

Source: Bloomberg, Eureka hedge, AM Best

Hard Market In Reinsurance

- Disruption of Retrocession Market
 - Total retro is believed to be USD 15B – USD 20B
 - Losses have reduced capacity
 - Retro shortage has prompted the search for alternative sources of retro coverage

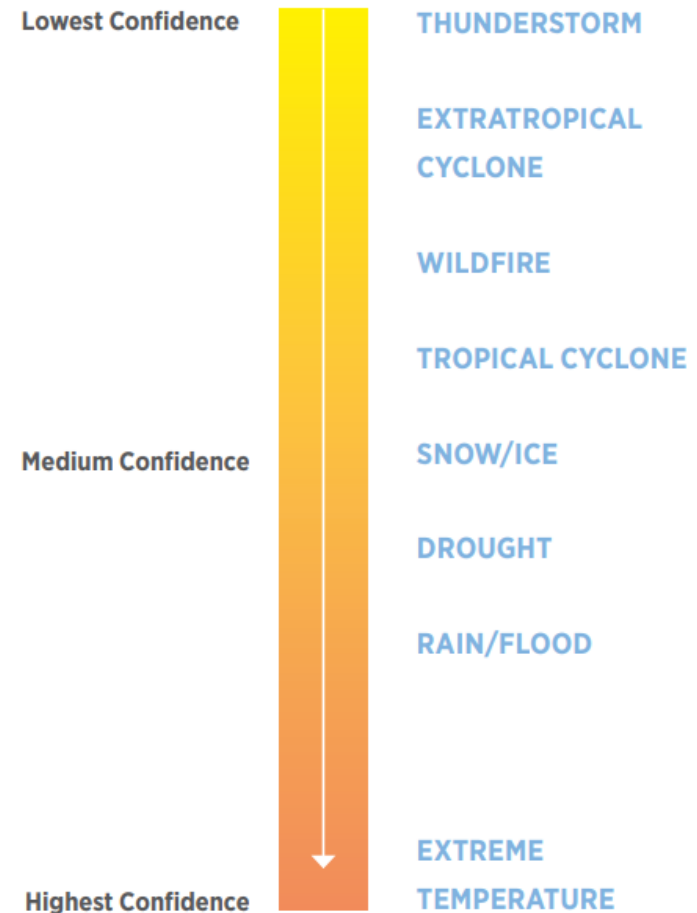
Soft Retro to 144A Cat Bonds (USD millions)			
	Soft Retro	144A Cat Bonds	% of Soft Retro to 144A Cat Bonds
2017	3,152	10,345	30.5
2018	1,500	9,084	16.5
2019	2,240	5,344	41.9
2020	3,708	11,024	33.6
2021	2,655	12,482	21.3
2022	2,496	9,391	26.6
1Q23	460	2,750	16.7
Total	16,211	60,420	26.8

De-Risking Activities of ILS Managers

- Increasing attachment points
- Focusing on well-modeled risks
- Managing exposure to aggregate cover
- Improvement in buffer loss tables
 - Buffer loss factors are getting smaller
 - Commutation is moving to 2-2.5 years as opposed to 3 years (depending on peril)

Pressure to De-Risk Due to Investor Climate Change Concerns

- ILS investors concerned about peril models' ability to capture impact of climate change
- Scientific community's confidence about the impact of climate change on the type of perils varies
- Some ILS managers discuss model adjustments
- More are increasingly avoiding risks that may be caused by climate change



Source: Gallagher Re

ILS Activities in 2023

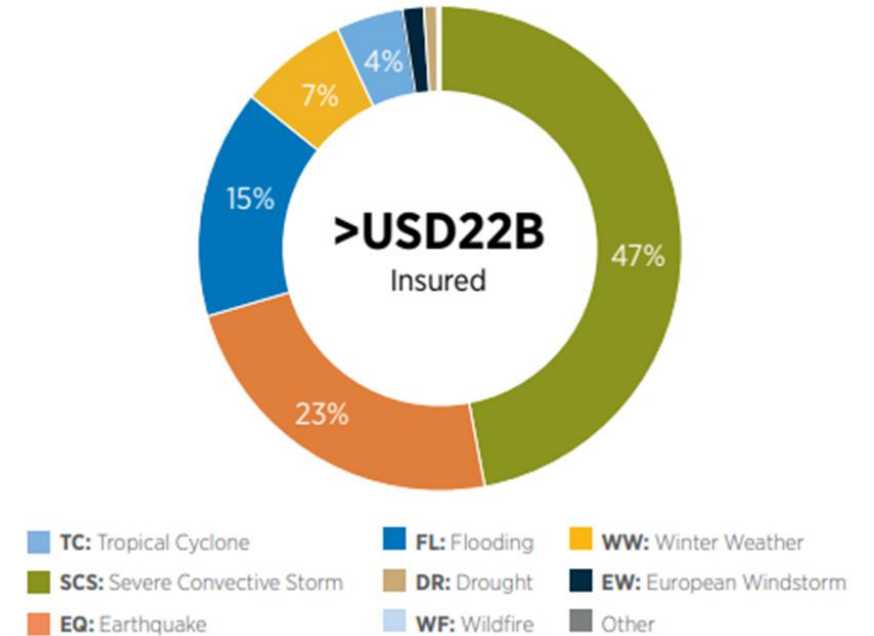
2023 Premium Outlook

Region / Peril	Change (YoY)	Assessment
US	+25% - 40%	<ul style="list-style-type: none"> Significant impact from Hurricane Ian (costliest hurricane on record)
European and Global	+20% - 30%	<ul style="list-style-type: none"> Significant cat losses in Europe (winter storms/ France hailstorms)
Japan	+15% - 25%	<ul style="list-style-type: none"> Lower demand pressure due to lower inflation

Source: LGT ILS Partners, AM Best

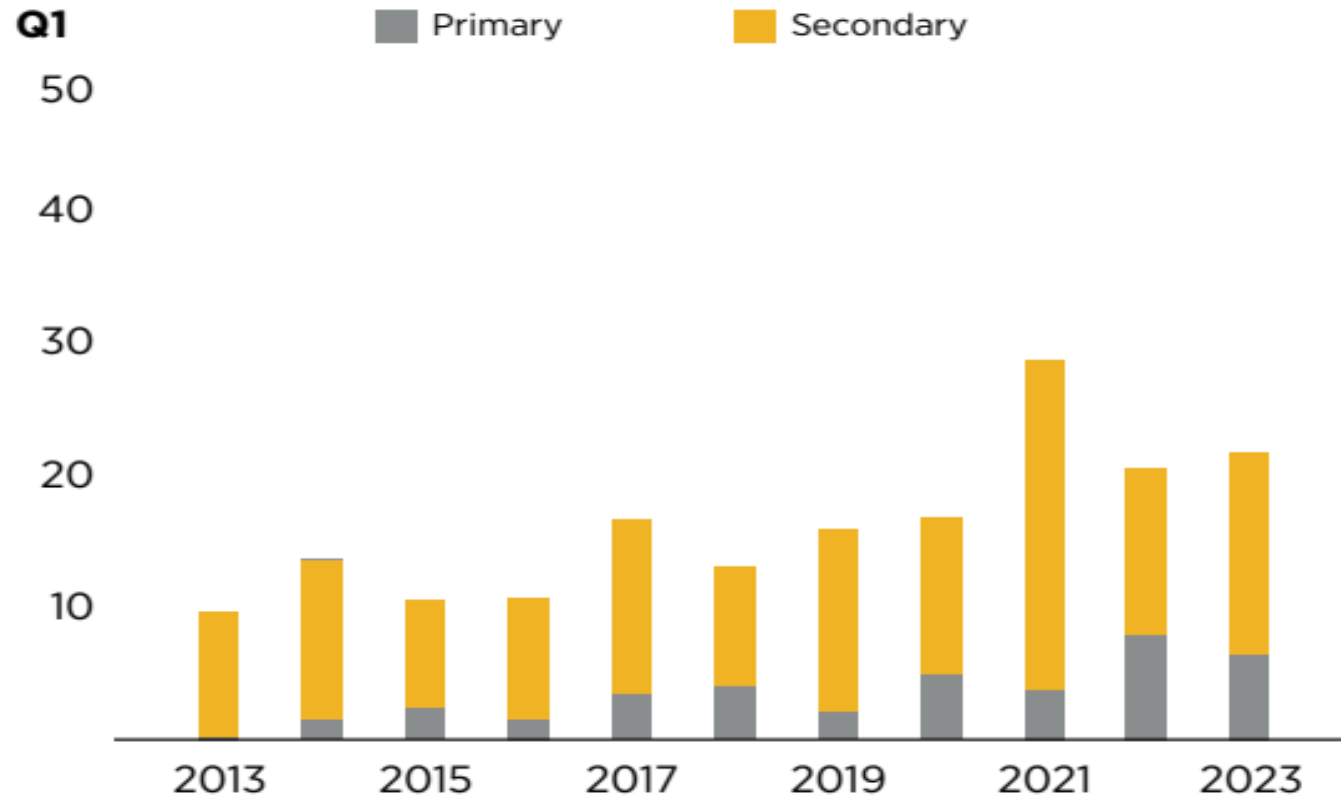
First Quarter 2023 Nat Cat Events

- Severe Convective Storms in Southeast and Midwest US (March) – USD 7 to 10 billion
- Turkey / Syria Earthquake (February) – USD 3.5 to 5 billion
- Australia Floods (February and March) – USD 4 billion
- California Atmospheric Rivers – USD 2 billion
- New Zealand Floods (January and February) – USD 1.7 to 2 billion
- Cyclone Gabrielle NZ (February) – USD 900 million



Source: Gallagher Re

First Quarter 2023 Nat Cat Events by Primary, Secondary Perils

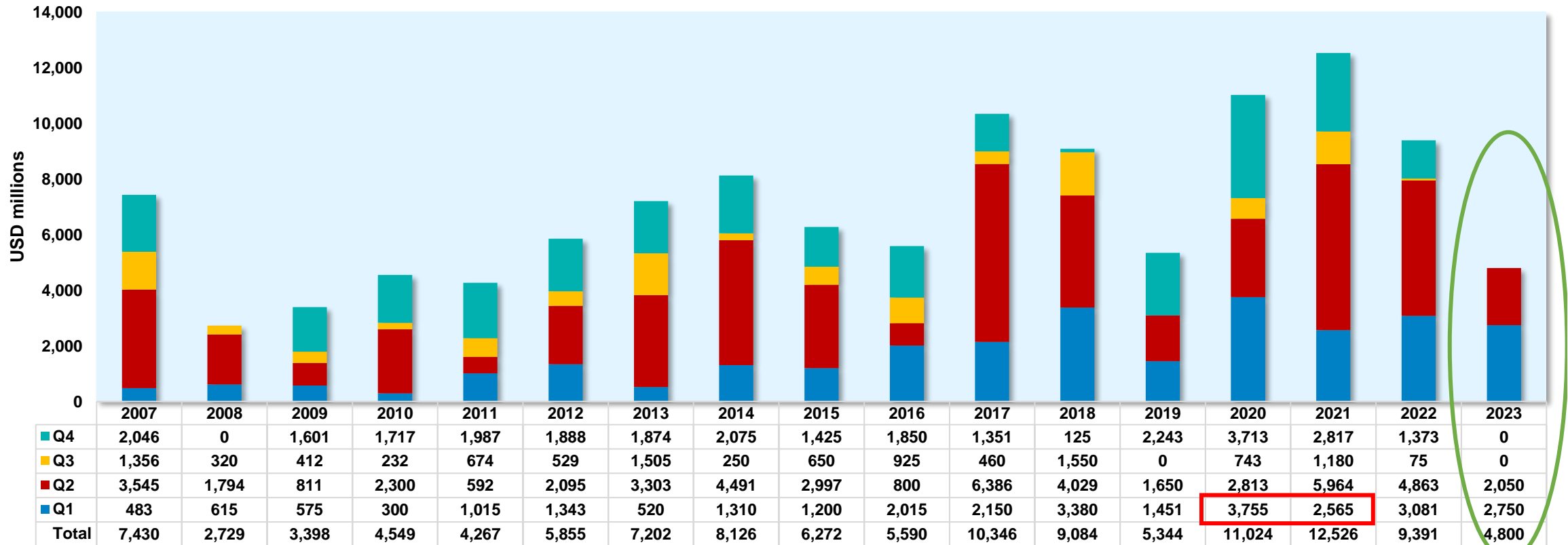


- 1Q23 loss is \$22bn: higher than the average of about \$15bn
- Secondary perils naturally dominate the first quarter
- Major hurricane season is in 2nd half of the year.

Source: Gallagher Re

Cat Bond Issuance in 2023 – Barometer for ILS Market

Cat Bond Issuance by Quarter



*2Q 2023 reflects only the month of April

2Q 2023 ~USD4 billion maturity due and ~USD2 billion of issuance so far in April

Source: Artemis

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Top 10 Natural Catastrophe Bond Sponsors Since 2016

Sponsor	Category	Issuance Volume (USD M)	Total Issuance Count	YTD 2023 Issuance Volume (USD M)	YTD 2023 Issuance Count
California Earthquake Authority	Public Sector	4,915	11	200	1
USAA	Primary Insurer	4,240	16	200*	1*
Allstate	Primary Insurer	3,663	12	250	1
Everest Re	Reinsurer	3,575	9		
State Farm	Primary Insurer	3,100	12	450	2
Zenkyoren	Primary Insurer	2,600	5	225	1
Texas Windstorm Insurance Association	Public Sector	2,600	7	500	1
FEMA/NFIP	Public Sector	2,500	6	275	1
Citizens Property Insurance Corp.	Public Sector	2,310	6	500	1
Swiss Re	Reinsurer	2,285	9		
Total		31,788	93		

Source: Artemis

*Not yet closed

1Q + April 2023 Cat Bond Issuances*

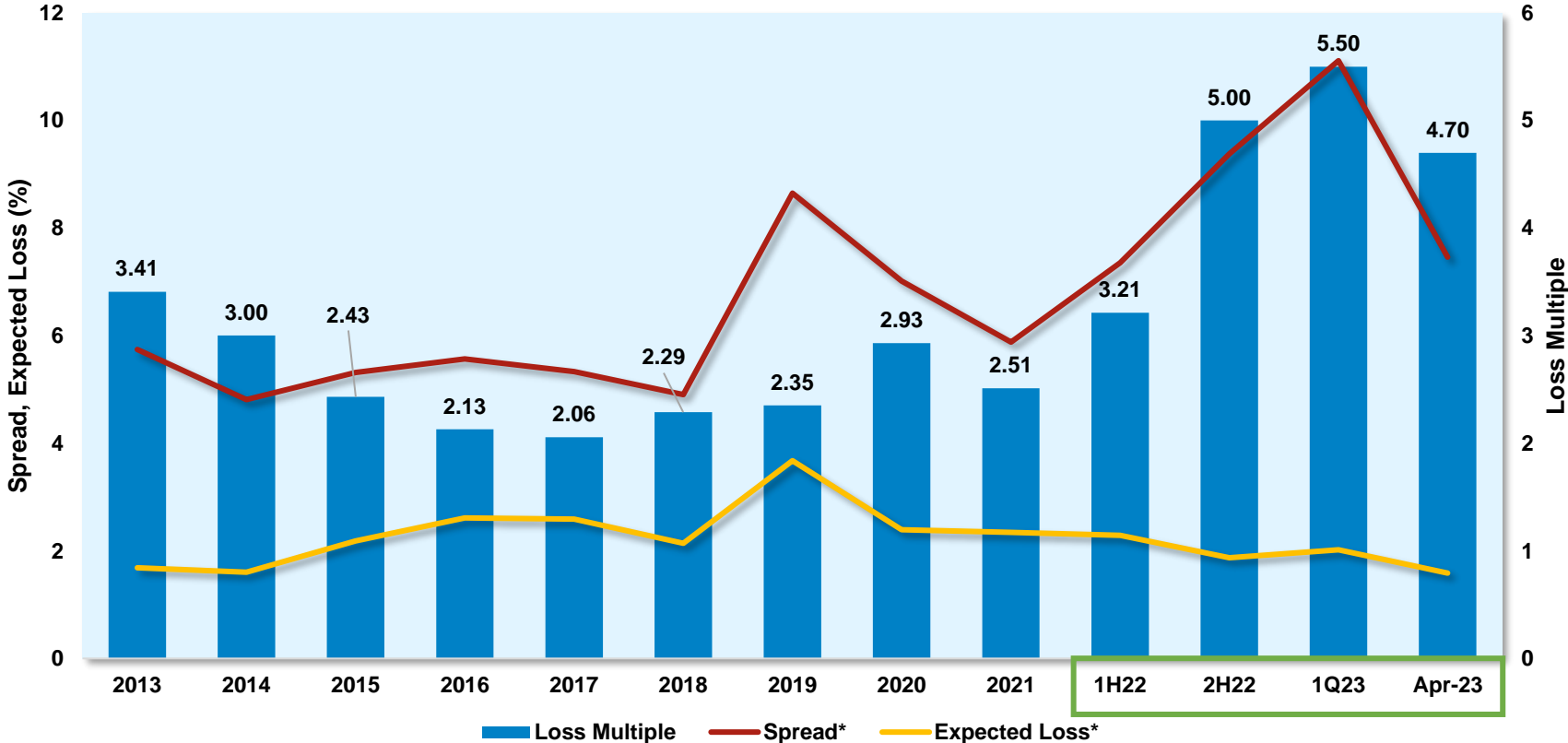
Issuer	Class	Month	(A) Initial Offer Size (\$M)	(B) Final Size (\$M)	(C) Change in Size (%)	(D) Initial Spread Midpoint (bps)	(E) Final Spread (bps)	(F) Price Change from Midpoint (%)
Nakama Re Ltd. (Series 2023-1)	Class A	April	50	75	50	275.0	250.0	-9.1
Nakama Re Ltd. (Series 2023-1)	Class B	April	150	150	0.0	425.0	400.0	-5.9
Alamo Re Ltd. (Series 2023-1)	Class A	April	250	500	100.0	1,000.0	850.0	-15.0
Ursa Re Ltd. (Series 2023-1)	Class AA	April	100	125	25.0	625.0	550.0	-12.0
Ursa Re Ltd. (Series 2023-1)	Class C	April	75	75	0.0	900.0	825.0	-8.3
Cape Lookout Re Ltd. (Series 2023-1)	Class A	April	200	350	75.0	737.5	650.0	-11.9
Gateway Re II Ltd. (Series 2023-1)	Class A	April	100	125	25.0	987.5	950.0	-3.8
Purple Re Ltd. (Series 2023-1)	Class A	April	100	100	0.0	1,200.0	1,225.0	2.1
Hypatia Ltd. (Series 2023-1)	Class A	March	100	150	50.0	1,212.5	950.0	-21.6
Sanders Re III Ltd. (Series 2023-1)	Class A	March	100	100	0.0	612.5	575.0	-6.1
Sanders Re III Ltd. (Series 2023-1)	Class B	March	125	150	20.0	1,537.5	1,550.0	0.8
Integrity Re Ltd. (Series 2023-1)	Class A	March	100	150	50.0	1,150.0	1,200.0	4.3
First Coast Re IV Ltd. (Series 2023-1)	Class A	April	100	100	0.0	1,050.0	900.0	-14.3
Locke Tavern Re Ltd. (Series 2023-1)	Class A	March	125	175	40.0	587.5	475.0	-19.1
Hestia Re Ltd. (Series 2023-1)	Class A	March	100	100	0.0	1,100.0	975.0	-11.4
IBRD – Chile 2023	Class A	March	150	350	133.3	512.5	475.0	-7.3
Lightning Re Ltd. (Series 2023-1)	Class A	March	200	500	150.0	1,200.0	1,100.0	-8.3
Titania Re Ltd. (Series 2023-1)	Class A	February	65	75	15.4	1,337.5	1,225.0	-8.4
Titania Re Ltd. (Series 2023-1)	Class B	February	50	50	0.0	1,387.5	1,275.0	-8.1
FloodSmart Re Ltd. (Series 2023-1)	Class A	March	200	225	12.5	1,675.0	1,625.0	-3.0
FloodSmart Re Ltd. (Series 2023-1)	Class B	March	50	50	0.0	2,200.0	2,150.0	-2.3
Gateway Re Ltd. (Series 2023-1)	Class A	February	150	300	100.0	1,262.5	1,300.0	3.0
Gateway Re Ltd. (Series 2023-1)	Class B	February	50	55	10.0	1,950.0	2,000.0	2.6
Mona Lisa Re Ltd. (Series 2023-1)	Class A	January	75	85	13.3	1,200.0	1,225.0	2.1
Mona Lisa Re Ltd. (Series 2023-1)	Class B	January	75	100	33.3	1,250.0	1,250.0	0.0
Bonanza Re Ltd. (Series 2023-1)	Class A	January	75	70	-6.7	787.5	825.0	4.8
Bonanza Re Ltd. (Series 2023-1)	Class B	January	50	65	30.0	1,950.0	2,000.0	2.6

*Cat bonds with available issuance data



Rate Increases Manifested Through Cat Bond Multiples

Loss Multiple = Spread to Expected Loss



- Loss multiples have generally increased since 2017
- Loss multiples ballooned from 3.21 in 1H 2022 to 5.00 in 2H 2022
- Loss multiples in 1Q23 remains high at 5.50
- April '23 multiple is at 4.70
- Jan – April '23: multiple at 5.25

* Spread and expected loss are dollar-weighted.
Source: AM Best industry research



Return Indices for 2023 – Capital Markets & ILS

	Swiss Re Global Cat Bond Return Index	Eurekahedge ILS Advisers Index
1Q22 Cum Return (%)	0.48	0.36
1Q23 Cum Return (%)	4.99	3.11

Cat Bonds Potentially Impacted by Hurricane Ian (Partial List)

Bond	Sponsor	Tranche Size (USD millions)
Astro Re 2021-1 A	Frontline	40
Bonanza Re 2022-1 A	American Strategic Insurance Group	135
Cosaint Re 2021-1 A	Universal P&C	150
FloodSmart Re 2021-1 B	NFIP	125
FloodSmart Re 2022-1 C	NFIP	25
Herbie Re 2020-2 C	Fidelis	25
Herbie Re 2021-1 A	Fidelis	150
Hestia Re 2022-1 A	Kin	175
Integrity Re 2019-1 A	American Integrity	50
Integrity Re 2020-1 A*	American Integrity	150
Kilimanjaro Re 2019-1 A-1	Everest Re	150
Kilimanjaro Re 2019-2 A-2	Everest Re	150
Manatee Re 2019-1 A	Safepoint	20
Merna Re II 2021-2 A	State Farm	300
Merna Re II 2022-2 A	State Farm	200

* Believed to be extended 5 years for loss development

Source: LGT ILS Partners, AM Best research

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New Types of ILS Transactions

Investors Showing Interest in Other Segments

- Multiple years of catastrophe losses – investors want more stable insurance outcome
- Some investors view risk modeling in the natural catastrophe space as inadequate
- Trapped capital has changed investment duration expectations

Ideally, they'd like to maintain the basic tenets of ILS investing ...

Third Party Capital Interested in Non-Cat Transactions

- Risk profile of non-cat line of business is not like natural cat lines
- Returns on some casualty lines moderately correlated with capital markets
- Well-defined commutation mechanism needed to wind up transactions at maturity

Line of Business	Avg. Years to Reach 95% of Claims
Auto Physical Damage	1.1
Personal Property	2.3
Commercial Property	3.7
Personal Auto Liability	4.7
Marine, Aviation, Transport	5.8
Commercial Auto Liability	6.2
Reinsurance Assumed – Property	6.3
Commercial Multi Peril	6.8
Fidelity & Surety / Financial Guaranty	7.1
Medical Professional Liability – Claims Made	9.1
Other Liability – Claims Made	10.0
Medical Professional Liability – Occurrence	12.2
Products Liability – Claims Made	13.2
Products Liability – Occurrence	14.3
Other Liability – Occurrence	14.8
Reinsurance Assumed – Casualty	18.5
Workers Compensation	22.0

Examples of Non Cat-Linked Transactions/Entities

- Multistrat Group (2017-2022) – \$1B contracted premiums (backed by about \$300mm in capital)
- Ledger Investing Inc. (2020-2022) – \$761mm contracted premiums (backed by about \$150mm-\$160mm in capital); ANB Capital agreement in 2023 to invest \$100mm
- Fontana Re (2022) – Ren Re's \$475mm joint venture: \$325mm 3rd party capital; \$150mm Ren Re capital
- Vesttoo Ltd. – Unknown contracted premiums

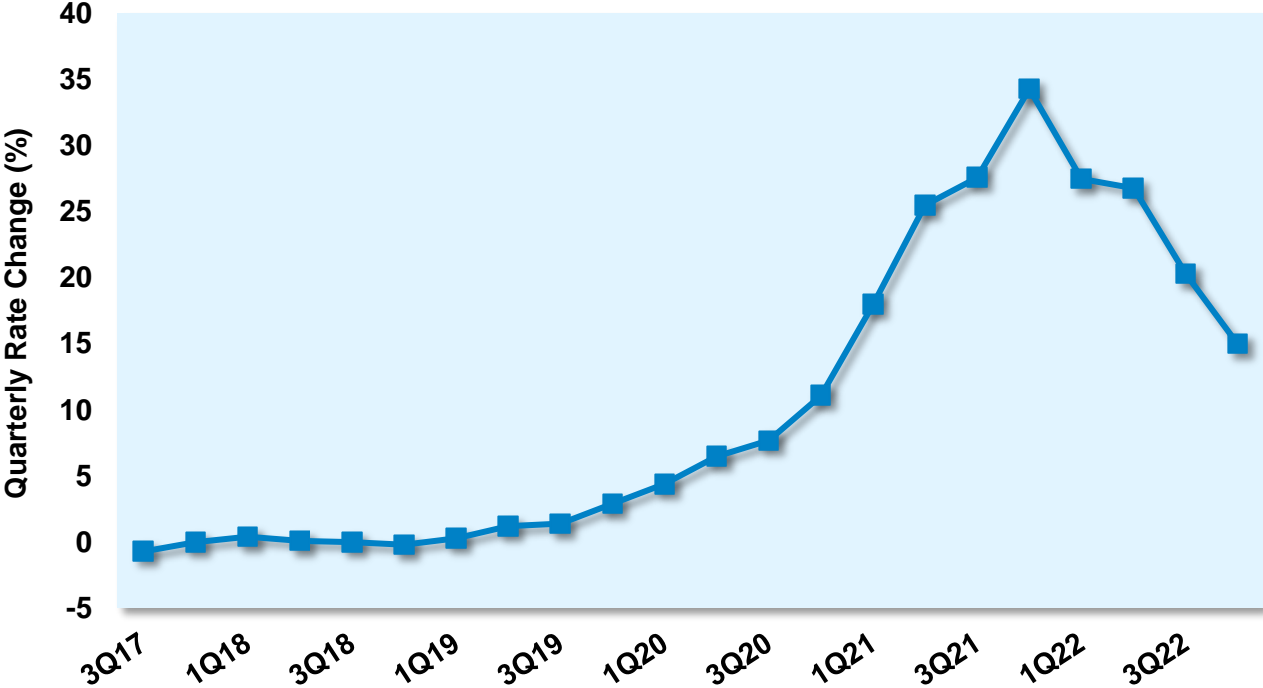
Source: Ledger Investing, Inc., Multistrat Group, AM Best

Third-Party Capital Interested in Cyber-Linked Transactions

- Short-tail business attractive to ILS investors
- Returns perceived to have low correlation with capital markets
- Skyrocketing of cyber rates in 2020-2022 indicating shortage of capacity approximately
- Projected premium growth: about USD 12B in 2022 to USD 23B in 2025
- Modeling problematic – historical data may not represent future evolving risk; risk definition fuzzy

Rising Demand of Cyber Risk Insurance

Cyber Rate Changes



Estimated growth of global cyber insurance premiums (USD billion)

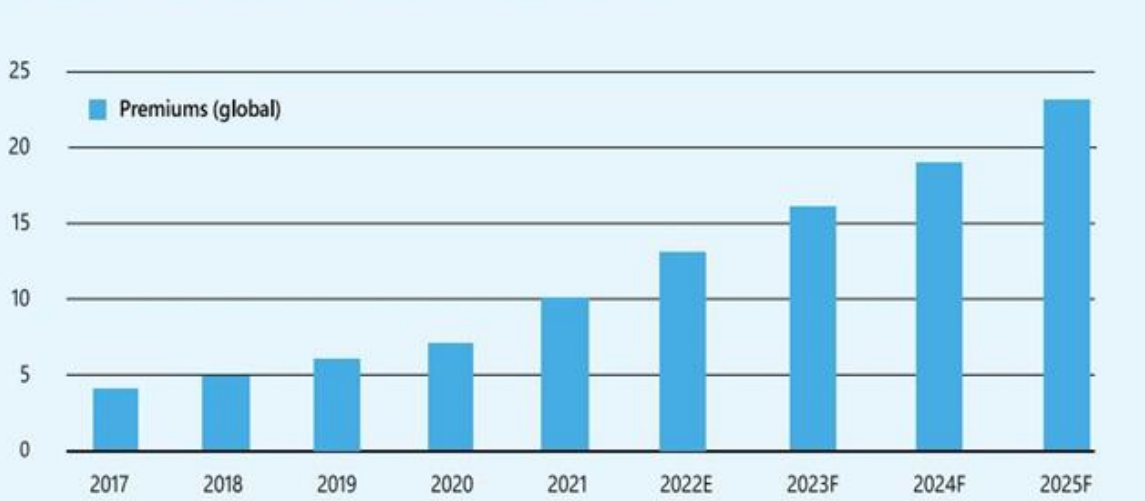


Figure 3. The dramatic growth of the cyber insurance market is expected to continue for years to come
 Note: E =estimates, F=forecasts. Swiss Re estimates/forecasts comprise standalone and packaged cyber policies
 Source: Swiss Re Institute

Source: CIAB



Examples of Cyber-Linked Transactions/Entities

- Operational Re IV*(2023) – a \$217mm bond issued that covers Credit Suisse’s operational risk including:
 - Cyber coverage (IT system failure that causes business interruption), unauthorized activity, accounting errors, HR & compliance issues, personal injury, and more.
- Cairney(2023) – A \$45mm pure cyber cat bond
 - Bond pays out to Beazley if total claims from any kind of cyber attack exceeds \$300mm
 - ILS investors, including Fermat, provided the capital to support the transaction
- Ferian Re (launched by Coalition Insurance Company in 2023) to provide reinsurance capacity for Coalition’s cyber programs. \$300mm of 3rd party capital

*Operational Re I, II, and III issued 2016 (\$220mm), 2018 (\$148mm), and 2020 (\$460mm), respectively

Concluding Remarks

Concluding Remarks

ILS managers are not, as a whole, seeing a rush of new capital

New inflows are likely going to the cat bond market

Hard market conditions will attract investment. Question is: how much and how soon?

Other branches of ILS outside of property cat continue to develop

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