LLOYD'S

Capital & Validation Briefing

2022

Agenda

- Opening remarks
- Where we are in terms of 2022 priorities
- Considerations for the 2023 LCR submissions
- Areas of Focus for the 2023 LCR submissions
- Closing Remarks
- Q&A

LLOYD'S

Opening Remarks

Mirjam Spies

Head of Actuarial Oversight

Priorities for 2022

- Full Implementation of principle-based approach
- Only actual performance drives your capital and plan
- Reducing complexity and increasing transparency
- Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

LLOYD'S

… and how they have changed

Ukraine and Inflation Reviews

Full Implementation of principle-based approach

Only actual performance drives your capital and plan

Reducing complexity and increasing transparency

Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

LLOYD'S

Where we are in Terms of 2022 Priorities

Rebecca Soraghan

Senior Manager, Syndicate Capital

LLOYD'S

Priorities for 2022

- Full Implementation of principle-based approach
- Only actual performance drives your capital and plan
- Reducing complexity and increasing transparency
- Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

LLOYD'S

Lloyd's Principles for Doing Business

A look back at what has happened so far

December	January	February	April	May	June

Start of engagement with the market

– RIO principles published to the market
– Oversight letters included expected maturity

Capital Guidance Updated

– Guidance was updated to better align with the Principles

Getting ready for the Principles

– Briefings held to give technical teams more information on the Principles & how we'd be assessing syndicates
– Oversight processes aligned with the Principles, e.g. deep dives

Syndicate self-assessments

– Syndicates completed self-assessments and submitted to Lloyd's

Differences of Opinion

– Comparison of Lloyd's and syndicates' self-assessments.

– Discuss with syndicates where there were difference of opinion at a Principle level

Rating finalisation

– Sign-off ratings for all principles by the Lloyd's Market Oversight Group (MOG)

– Syndicates notified of final CPG categories for this year.

Lloyd’s Principles for Doing Business

Back to Basics!

We start by calculating an expected maturity

– This aligns the sophistication of capital modelling with expectations based on the materiality of the syndicate as defined below

Dimension	Materiality measure	Low Foundational	Moderate Intermediate	High Established	Highest Advanced
Principle 7: Capital	Ultimate SCR (latest approved current year, excluding RICB)	<£100m	>=£100m	>=£250m	>£500m
	Syndicate Tail Risk - 99.8 % to 99.5% Claims Ratio Thresholds (subject to minimum £250m uSCR materiality threshold)	-	-	>=6%	>10%

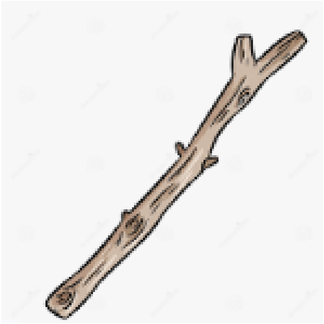
Then we consider the assessed maturity

– This reviews the level of sophistication of the capital model based on what the syndicate is actually doing

Lloyd’s Principles for Doing Business

What does it mean for capital teams?

- In line with the principle-based approach, syndicates rated Meets Expectations will receive less oversight
- For capital this means fast-track for CPG – capital more predictable, less time-pressured queries, faster approval



- Syndicates can’t have an outperforming rating at an overall level, if they’re not meeting expectations in all areas
- No Fast track for capital
- Controls loading as intervention which can be used by ALL oversight areas for governance/risk management concerns

LLOYD'S

Fast Track & Deep Dives

Target: Reducing Review in Planning Season

CPG season

For 2022 LCR reviews, we increased the number of syndicates on Fast Track route, and have made **further changes** to Fast Track to try to put **more syndicates on Fast Track** for 2023 LCR submissions.

- Increased allowance for capital movements
- Giving credit to Deep Dives performed in the last 2 years

In order to make these changes, we are asking the market:

- To conduct Deep Dives with agents during the year
- Syndicates to be meeting expectations under the new Principles.

Year-round

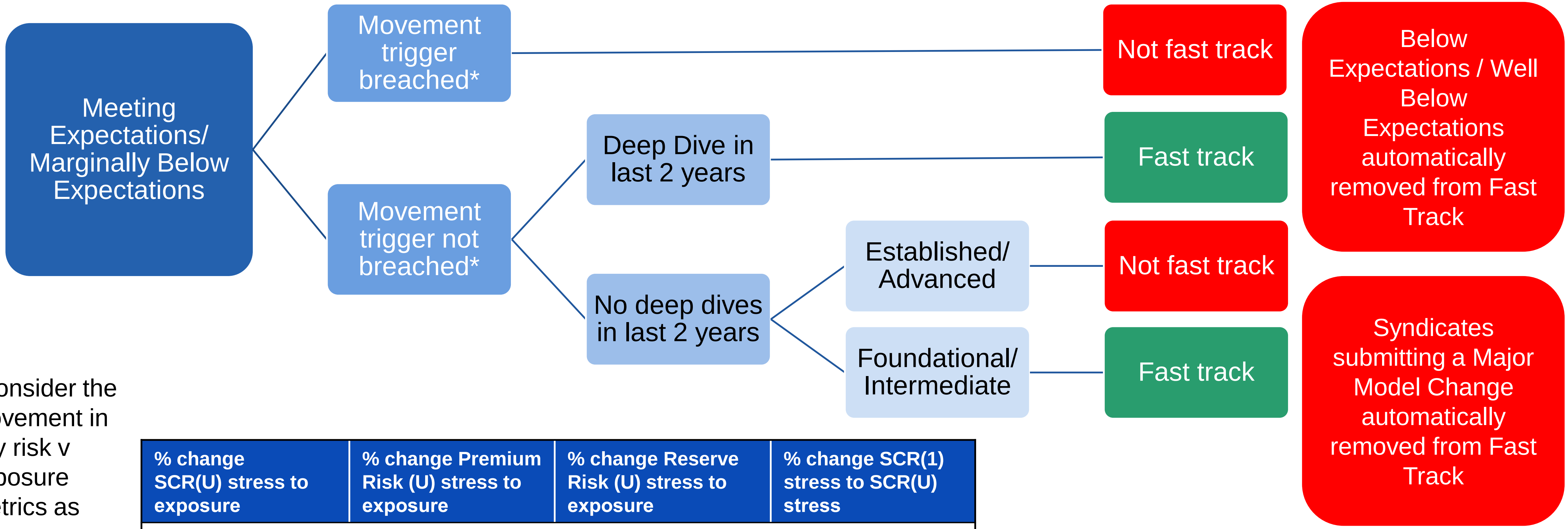
Everyone likes a waived loading

LLOYD'S

Fully Implementing the Principles-Based Approach

Fast Track Process

This has been updated further this year to align with the Principles



*Consider the movement in key risk v exposure metrics as follows:

% change SCR(U) stress to exposure	% change Premium Risk (U) stress to exposure	% change Reserve Risk (U) stress to exposure	% change SCR(1) stress to SCR(U) stress
-10%	-20%	-20%	-20%

Priorities for 2022

Full Implementation of principle-based approach

Only actual performance drives your capital and plan

Reducing complexity and increasing transparency

Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

Reserving Tests of Uncertainty

Risk-based oversight with a focus on the material risks to drive meaningful discussions

- Introduced in 2019 to address the risk of market-wide understatement of capital requirements due to inappropriate reserving input – in particular the loss ratios
- Market uplift of loss ratios against plan increased and loadings reduced year-on-year → incorporation of loadings into models, no loadings required in for 2022 LCR
- Tests not deemed necessary in same format – market-wide testing replaced by risk-based oversight

Year end 2019
£564m loading
38 syndicates

Year end 2020
£204m loading
21 syndicates

Year end 2021
£218m loading
11 syndicates

Year end 2022
£0m loading*
0 syndicate

**(post of benefit of the de-minimis loading criteria introduced)*

Key Changes to Reserving Tests for 2023 Capital Setting

Data Returns used to analyse Syndicates Performance

– **Including Catastrophes** (excl COVID where possible)
– Consistent with other teams e.g. PMD

Quantitative Assessment

– Simplified Quantitative metrics
– Longer Time Horizon considered
  – E.g. 10 years history for prospective year loss ratio setting
– Assessment of both ability to meet plan and capitalised loss ratio
– TP Roll Forward assessed on 3 year basis

Qualitative Assessment

– Additional overlay of past/recent engagement
– Assessment of recent trends over time in data

Syndicate Selection

– Syndicates triaged into “High Risk” and “Low Risk”
  – High Risk Syndicates assessed prior to CPG
  – Low Risk Syndicates assessed as part of BAU oversight
  – Run minimum tests (e.g. compliance with Modelled Loss Ratio Floor guidance) as part of capital assessment framework

This is no longer just about passing formulaic tests!

LLOYD'S

Reserving Tests Summary

Risk Based Oversight Approach

Shifted market behaviour and improved market conditions means less market-wide oversight expected	Monitoring of *individual syndicates* for the need to interrogate assumptions in scope of Actual vs Plan loss ratio and technical provisions roll forward tests	Syndicates of "High" risk reviewed for the CPG process all others integrated into BAU oversight	Run minimum tests (e.g. compliance with Modelled Loss Ratio Floor guidance) as part of capital assessment framework	Monitoring of market as a whole to assess if market testing needs to be reinstated due to future shifts in market cycle

Even though our oversight has changed, the expectation has not!

The expectation is that these key reserving inputs take into account historical performance and any material recent economic impacts to adequately reflect uncertainty going forwards.

And how they will change for 2022

- Full Implementation of principle-based approach
- Only actual performance drives your capital and plan
- Reducing complexity and increasing transparency
- Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

LLOYD'S

Capital Setting for New Syndicates

Proposed change for 2023 SCR

Background / Context

- Lloyd's currently **sets capital for new syndicates for up to 3 years** using the Syndicate Benchmark Model (SBM) while they build their own internal model.

Drawbacks / Challenges

- We have recognised that the approach **lacks transparency**, **makes it difficult for syndicates to predict movements in their capital and is time-consuming** (for both syndicates and Lloyd's).
- It **does not account for specific risk profile features of the syndicate**, such as reinsurance or asset make-up

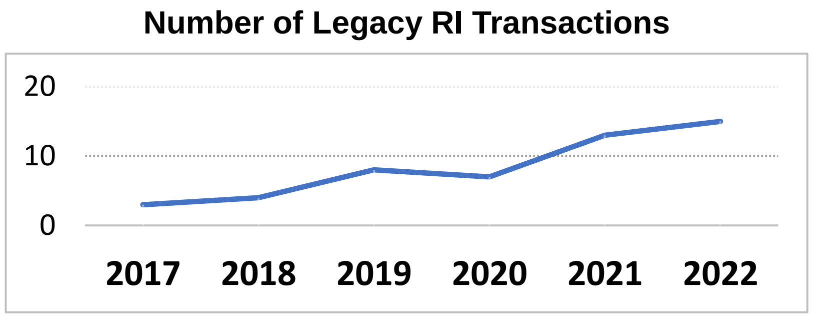
Proposal

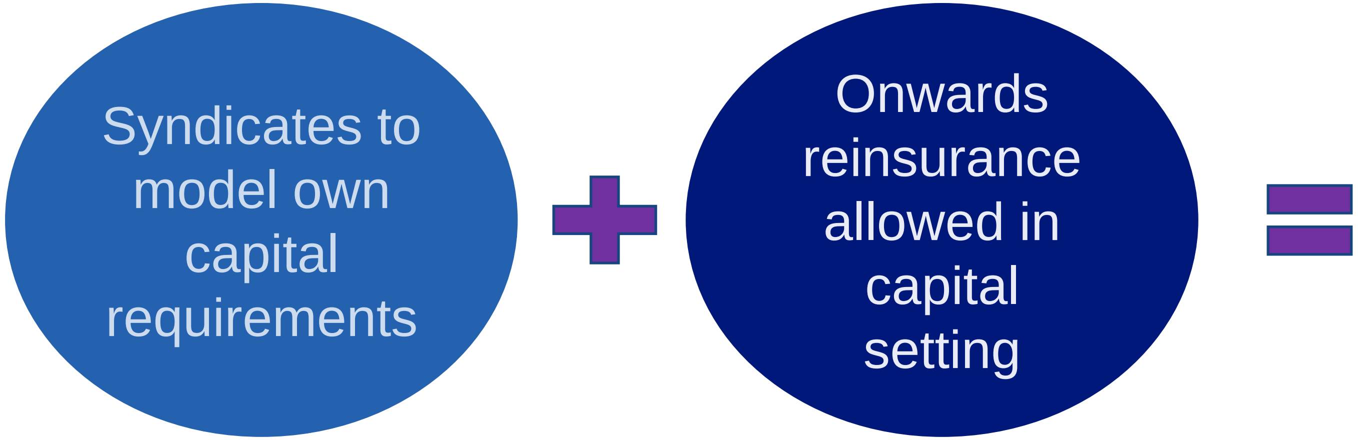
- Build a new **factor-based, spreadsheet model** similar to the Solvency II Standard Formula, **adjusted to be Lloyd's specific** and appropriate to the risk profile of new syndicates.
- Expected to be built over 2022 for use in **setting new syndicate capital for 2023 SCRs**.
- In line with the current approach, it will be used to **set capital for new syndicates for up to 3 years** while they build their own internal model.
- We will formalise risk profiles for which the new approach is not appropriate
- It is **not expected or designed to change the level of capital collected**

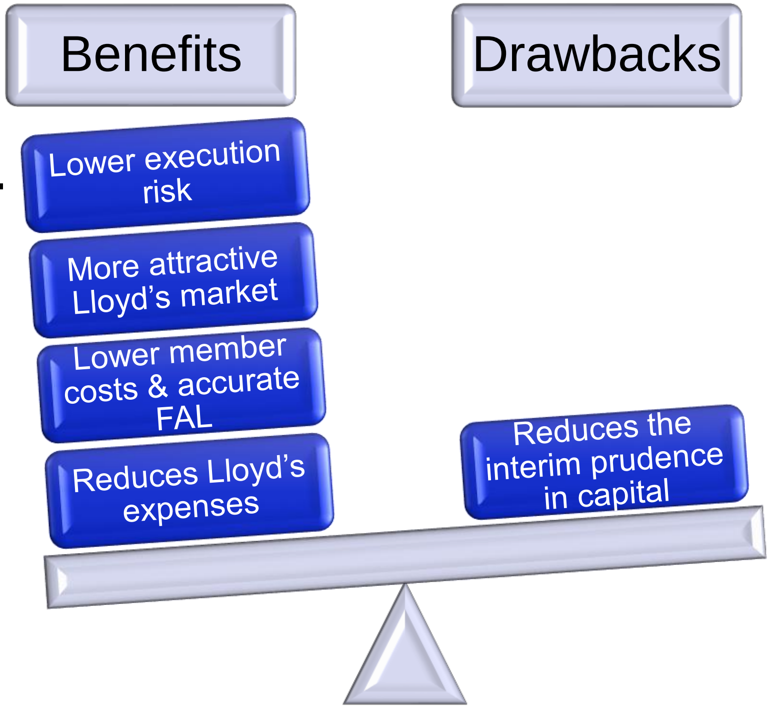
!! Note: Lloyd's will not accept benchmarking to the Lloyd's Standard Model in syndicates LCR submissions !!

Capital Setting for Legacy Reinsurance

- Currently **capital is set by Lloyd's for receiving syndicate** before deal is signed until new business can be modelled appropriately (most of the time involving a major model change).
- Capital setting based on the standalone "Partial LCR" by the ceding syndicate and Lloyd's internal model – bespoke features (like e.g. reinsurance) were not catered for.
- Lloyd's has seen a **sharp increase in the number of legacy RI transactions** being proposed with often bespoke features to the deals.
- **Proposal: Capital add on to be set by receiving syndicates instead of Lloyd's, but reviewed by Lloyd's in line with the "Partial LCR".**
- Given the uncertainty of the capital required since the information on the new business is limited this will be subject to certain **minimum thresholds**.
- **Syndicate will need to justify the level of capital – process needs further refinement**.







And how they will change for 2022

Full Implementation of principle-based approach

Only actual performance drives your capital and plan

Reducing complexity and increasing transparency

Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

Non-Natural Catastrophe Thematic Review

Cyber to be considered as part of this review

2021

- Focus Areas containing Cyber and non-nat cat data collected
- Additional information on Cyber collected from the largest writers
- Syndicates for non-Cyber questionnaire selected based on Focus Areas.

Jan - March

- Draft questionnaire and MDC LCR update (Form 313) discussed with market working group
- Data request to participants (for non-natural cat)
- Thematic review on Cyber information will start

April - June

- Main work on thematic review CYBER ONLY
- Feedback sent out to participant with timelines for further engagement – CYBER ONLY

November-December

- Feedback sent out to participant with timelines for further engagement – CYBER
- Market report to be finalised and published in early 2023

Post Review

- Public presentations of findings to take place
- Feedback to participants to be reviewed and sent out during LCR reviews

And how they will change for 2022

Full Implementation of principle-based approach

Only actual performance drives your capital and plan

Reducing complexity and increasing transparency

Non-natural Catastrophes (incl. Cyber)

Integration of Actuarial Oversight Team

LLOYD'S

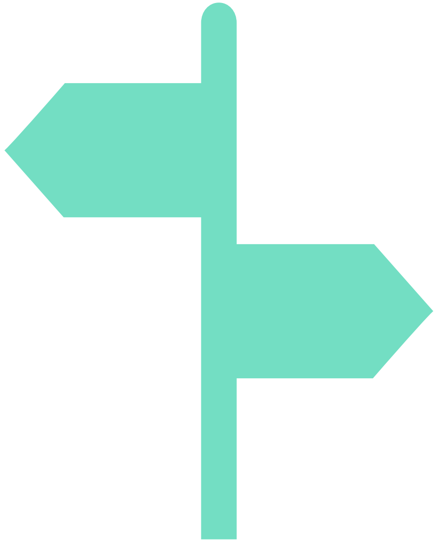
Considerations for the 2023 LCR Submissions

Rebecca Soraghan

Senior Manager, Syndicate Capital

Tips for a Great Submission

- We tend to give the same feedback repeatedly!
- The **analysis of change** is the key document we use to review submissions
  - Don’t just comment on movements – justify them!
  - Remember to comment on movements in diversified capital.
  - Direct our attention to the important factors causing movements in capital
- Make sure you **address prior feedback and loadings**…
  - …by the deadline stipulated.
- Take care when completing the **focus areas return**
  - This is a key part of the submission – make sure it isn’t an after-thought.



Signposting, Signposting, Signposting

Lloyd’s Concentration Risk Review

- **Franchise guidelines are in place to help manage certain concentration risks to Lloyd’s**
- Review of the guidelines to ensure ongoing **appropriateness of the thresholds** and measures in 2022
- Proposed changes are **still undergoing review** through internal governance process
- Publication via **market bulletin**
- Proposed changes have been backtested with data for several years and have only historically been breached by very few syndicates – hence **this will only affect very few of you**.
- We will be in touch with any syndicates that have had breaches historically.

LLOYD'S

Franchise Guidelines Proposed Changes - Summary

2 New restrictions introduced

- Max Net line size vs. ECA plus profit can't exceed 30%
  - To ensure capital can cover 3 line size losses
- Tail Metric – Ratio of 99.8th percentile vs. 99.5th percentile of net claims can't exceed 1.35
  - For syndicates on the benchmark model this metric is replaced by a tail metric for cat risk only

2 Restrictions changed/abolished

- Abolishing franchise guideline for 1 in 30 AEP metric
- Change to the max gross line size can't exceed 8% of GWP
- No change to RDS franchise guidelines – but note change in definition for RDS submissions with SBF

Areas of Focus for the 2023 LCR Submissions

Mirjam Spies

Head of Actuarial Oversight

LLOYD'S

Areas of Focus for 2023 LCR submissions

- Non-modelled natural Catastrophes
- Non-natural Catastrophes
- Conflict in the Ukraine
- Inflation – Economic and Excess Inflation

Climate Change

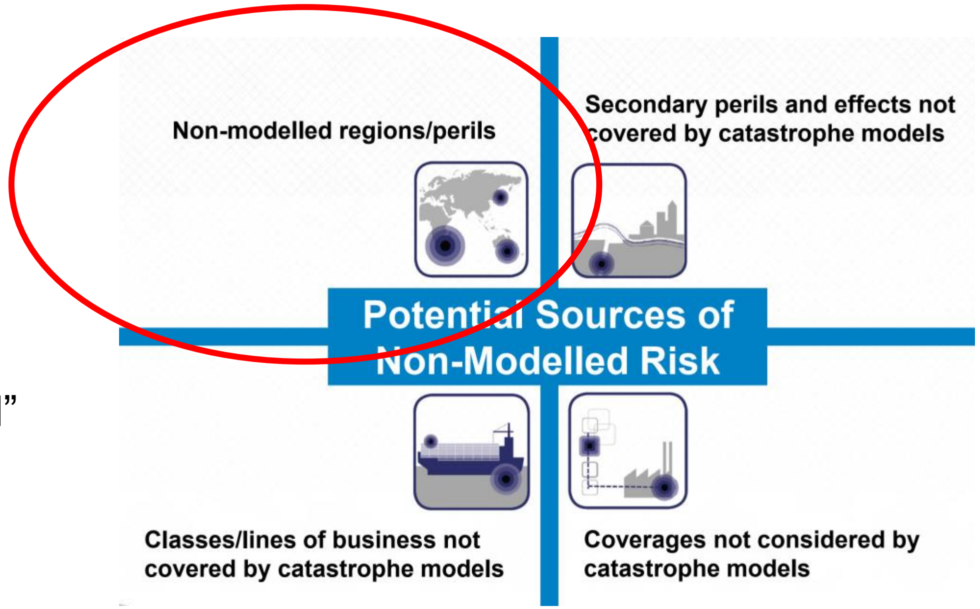
Understanding Completeness of Non-LCM5 (Rest of World) Perils, and Natural Catastrophe Risk as a Whole

Principle 2: Catastrophe Exposure

Sub-Principle 4: Managing agents should ensure their syndicates have a complete representation of catastrophe risk in the internal model, reflecting all possible sources of loss.

Validators should consider the following:

- Various sources of non-modelled risk and how they have been accounted for in the model
- Demonstrate that allowance is sufficient
- If there is only an implicit allowance then it shouldn't be a "catch-all"



Cat risk representation should be uplifted if elements of it are missing from the internal model

1. Syndicate can demonstrate that their Rest of World modelling is 'complete'

– No further action required
– No impact on syndicate capital

2. Syndicate unable to demonstrate that Rest of World LCM is complete, but able to show that missing elements are adequately represented elsewhere

– No impact on syndicate capital – internal model is demonstrably complete
– Uplift to syndicate's LCM5 for risk captured elsewhere, after CRA calculation and as input to central LCM

3. Syndicate unable to demonstrate that Rest of World LCM is complete and unable to show that missing elements are accounted for elsewhere

– Uplift to syndicate's cat risk representation required
– Degree of uplift determined by how many peril-regions / how much risk is deemed 'missing'
– Model Completeness loading on capital

4. Syndicate chooses not to participate in 2022 Model Completeness process

– 20% uplift applied to syndicate's LCM5 data
– Model Completeness loading on capital

LLOYD'S

Oversight

– Various thematic reviews going on across several areas over the last years

– Publication of the RIO principle for non-natural catastrophe exposure

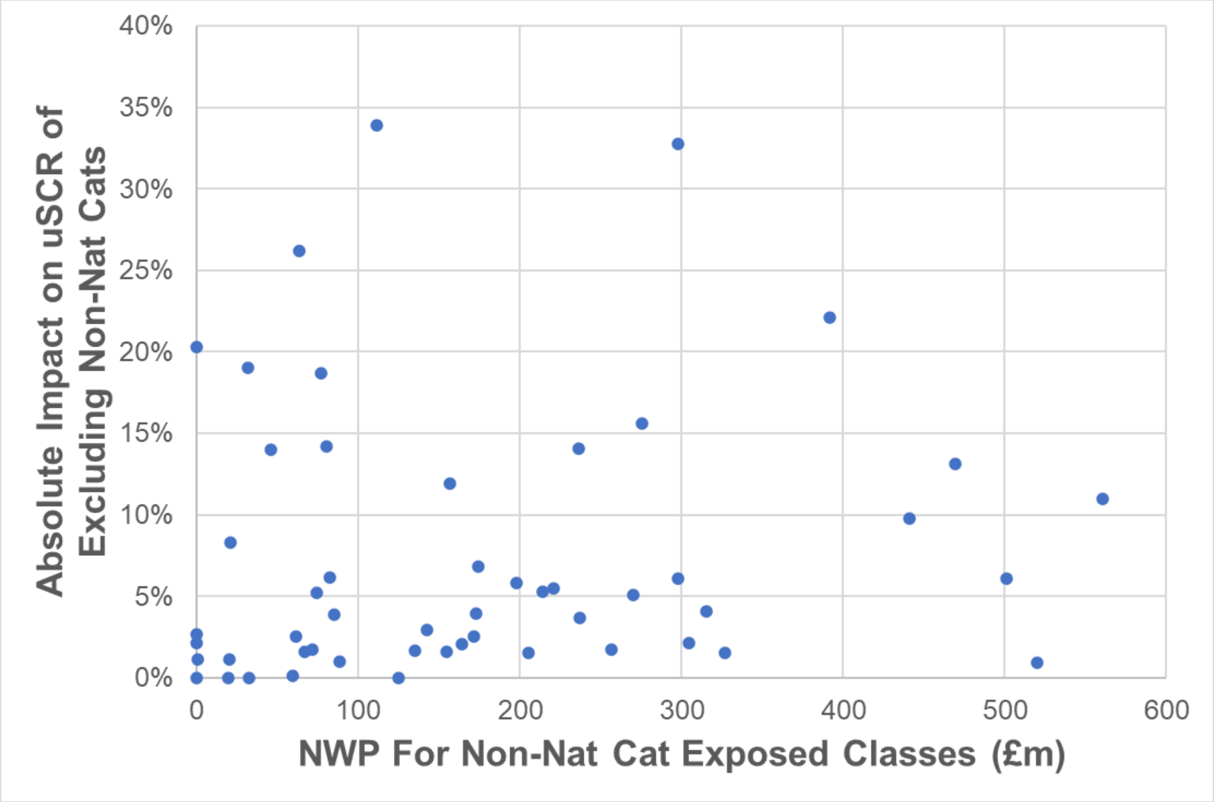
– In order to determine the right level of oversight need to understand the materiality of non-natural catastrophe risk better:

- Expected maturity for the RIO Catastrophe Exposure (Non-Nat Cat) Principle is based on:
  – GWP of classes exposed to Non-Nat Cats and proportion of GWP in Non nat-cat classes vs. total GWP
  – maximum Non-Nat Cat RDS
- Quantification on non-natural catastrophe claims in 2023 LCR

3. Insurance Risk Including Catastrophe Claims (Notes 313.2 to 313.7)

		One Year			Ultimate		
		Net Mean	Net 99.5th	Post diversified claims 99.5th	Net Mean	Net 99.5th	Post diversified claims 99.5th
		F	G	G(i)	H	I	I(i)
1	total: Catastrophe Claims	= F1a + F1b	v: if > G1a + G1b w: if = G1a + G1b	= G(i)1a + G(i)1b	= H1a + H1b	v: if > I1a + I1b w: if = I1a + I1b	= I(i)1a + I(i)1b
1a	split: Non-Natural Catastrophe Claims	w: if -ve	w: if -ve	w: if -ve	w: if -ve	w: if -ve	w: if -ve
~~1~~1b	split: Natural Catastrophe Claims	= F2 + F3	v: if > G2 + G3 w: if = G2 + G3	= G(i)2 + G(i)3	= H2 + H3	v: if > I2 + I3 w: if = I2 + I3	= I(i)2 + I(i)3

Materiality in Terms of NWP vs. Impact on SCR



- In the 2022 YoA Focus Areas Lloyd's collected information on non-Nat Cats to focus resources in capital reviews and lay a foundation for the non-Nat Cat thematic review.
- Scrutiny of syndicates with high NWP but low impact on SCR. Could be driven by multitude of reasons:
  - Despite non-nat Cat exposure being large this might still be a relatively small proportion of the total NWP.
  - Limitations when running the sensitivity test and isolating the impact
- Queries to understand the reasons before the next LCR submission.

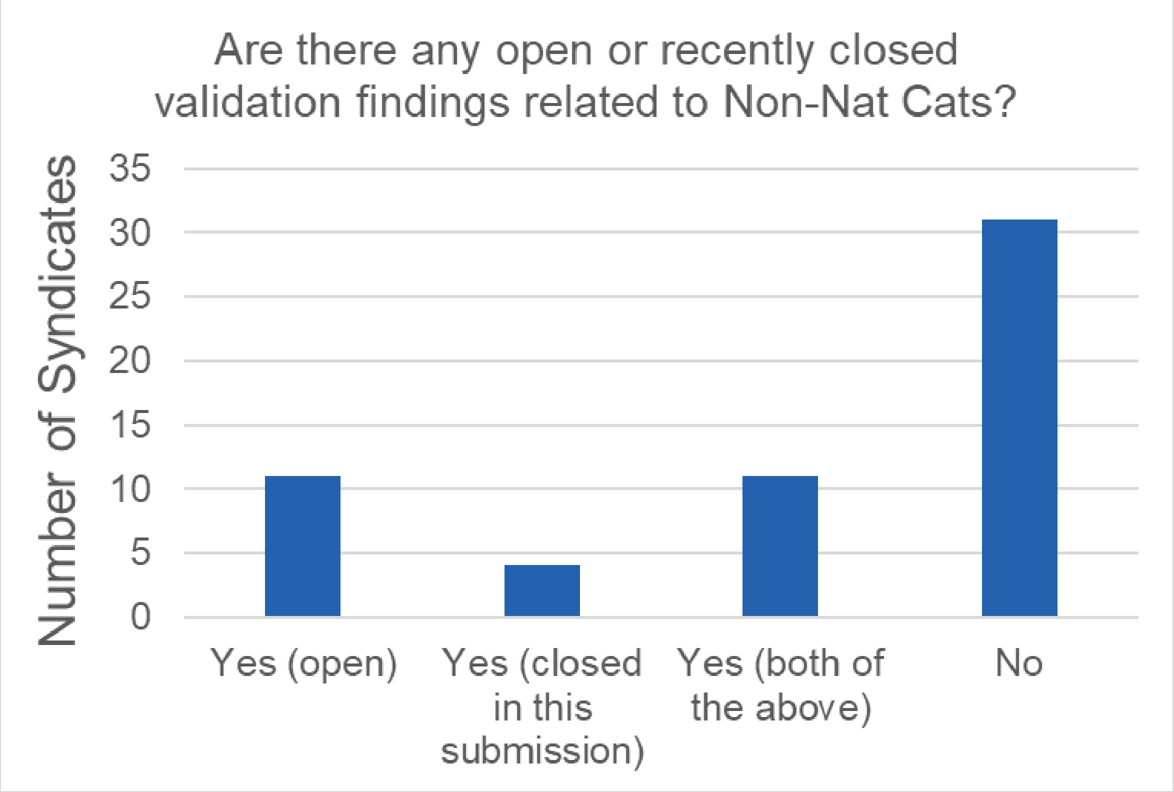
Definition

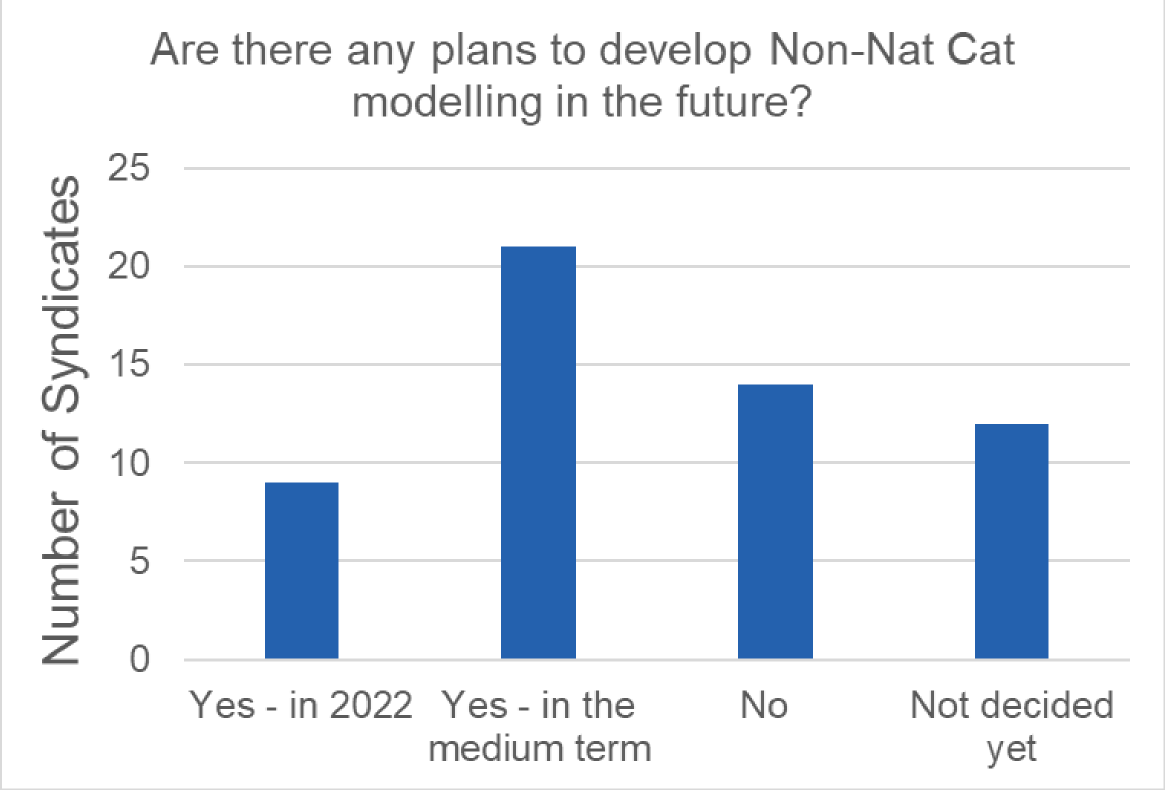
Losses from events that are not the result of the natural processes of the earth

- In general refers to accumulation of losses – i.e. several policies and/or classes
- Sizeable losses – to distinguish between attritional/large losses
- When is an event modelled as a catastrophe – when is it modelled as a loss in a class (large loss curve?)

Examples of non-natural catastrophes	
Event	**Definition**
Marine Incidents (e.g. Marine collision RDS)	Major marine accidents, such as collisions, sinkings, construction accidents
Aviation Incidents (e.g. aviation collision RDS)	Major aviation accidents such as collisions, crashes, disappearances
Terrorism	Major terror attacks at key target locations
Explosion / Conflagration	Large fires or explosions, e.g. at ports, airports, industrial or energy complexes
Cyber	Cyber attacks or non-malicious incidents
Pandemic	Epidemic of an infectious disease that has spread across a large region, affecting a substantial number of people
Liability/Casualty Cat	Accumulation of losses across liability / casualty classes caused by a common underlying factor
Space Weather	Impacts on earth (e.g. to electronics, power grids) of conditions on the sun, in the solar wind, and within Earth's magnetosphere, ionosphere and thermosphere

Future Validation Actions and Development Plans





Common themes include:
- Appropriateness of frequency of reparameterization.
- Lack of clear distinction of Non-Nat Cat claims from other claims.

Common themes include:
- Greater use of vendor models.
- Increase number of perils explicitly modelled.
- Improve data collection.

Ukraine

- We expect this to be a major but financially manageable event for the market in 2022.
- Not a solvency or capital event for corporation or individual syndicates
- Consequences for insurance market fluid and complex
- Operational challenges and economic uncertainty will persist
- Increased oversight on affected lines as well as secondary impacts.

Significant Uncertainty Associated with Potential Ukraine Losses

Class level uncertainty

Ongoing nature of crisis: The duration, severity and geographical impact of the crisis is unknown and highly uncertain. In particular, it is very difficult to estimate potential losses in respect of the conflict extending into new territories and the extent of losses which could emerge the longer the crisis runs.

Evolving sanctions: New sanctions continue to be introduced and whilst not expected soon, the timing of any future removal of sanctions difficult to predict. Uncertainty around impact of disruption to provision of services from Russia and Ukraine.

Lack of notifications: Reserves are largely IBNR at this point with few loss notifications

Coverage: Coverage for Aviation and potential for lengthy litigation

Asset values: Exact value of planes in the impacted regions is challenging to estimate. Ships written off after 12 months.

Other uncertainties

Reinsurance: Risk of dispute over coverage terms. Risk of erosion due to impacts from classes on same treaty. Heightened default risk due to exposure to several counterparties.

Data: Lots of information outstanding at this stage, will take time to receive and develop clear picture, e.g. loss notifications, loss adjustment reports, up to date satellite and drone imagery, on-the ground reports, information about exposure.

Economic uncertainties: Indirect losses from macroeconomic pressures and disruption to global trade and financial markets

Considerations for 2023 LCR

Insurance risk	• Impact of losses on future volatility for affected classes • Modelling of uncertainties with respect to inflation, litigation, further indirect and direct losses • Q2 to Q4 TPs roll-forward process
Credit risk	• Material reliance on recovering from reinsurance counterparties • Potential for dispute over terms of coverage
Market risk	• Impact on asset values and the general economic environment
Operational risk	• Staff impairment, high claim volumes and disruption to provision of services • Potentially increased risk of cyber attacks
Dependencies	• Review whether internal model continues to capture interdependencies appropriately (e.g. between insurance and market risk; between classes of business)

Considerations for the 2023 LCR

Validation

– Class and risk backtesting
– Scenario testing of potential outcomes to compare against the internal model
– Sensitivity testing to establish materiality
– Review treatment of first and second order effects of the ongoing event
– Review model changes and management adjustments
– Review whether internal model continues to capture interdependencies appropriately (e.g. between insurance and market risk; between classes of business)

Essential considerations

– Syndicates **must make allowance for heightened uncertainty**
– Secondary impacts (economic, sanctions etc) may lead to more material losses than direct losses from the ongoing event
– Consider impact across **all areas of the model**
– We will accept management adjustments as a pragmatic measure to address uncertainty
– **Focus area return** will be used to direct attention to where we will focus on in our review

Current level of Economic Inflation – a Black or Grey Swan?

Quarterly CPI inflation outturn versus February 2021 projection

Source: Bank of England's Monetary Policy Report (MPC) from May 2022

Levels of inflation are outside the 90th percentile of Bank of England projections

Rising inflation is of 'serious political concern' to insurance sector – Elisha Walia

Insurance Times

"Powell says Fed will keep tightening until inflation has been tamed"

FINANCIAL TIMES

Specialty risks becoming 'more opaque' amid surging inflation: Scor's Bishop

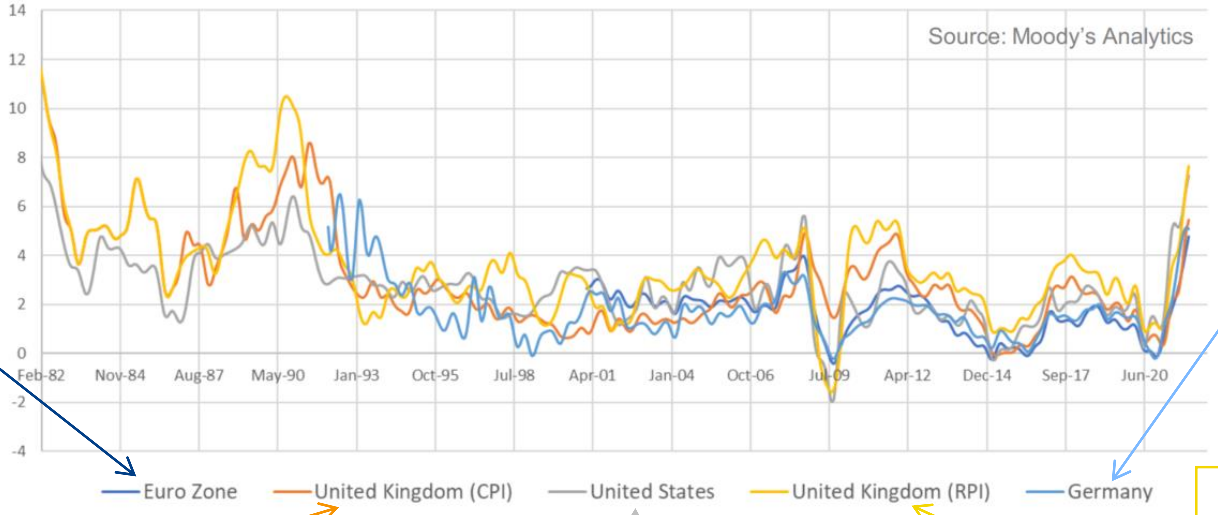
insurance insider

Rishi Sunak warns of tough few months as inflation soars

BBC

How does Current Inflation Compare to History?

Historic annual inflation, monthly movements to 31 December 2021 (Moody's Analytics)



No bigger shock than observed between Q4 20 and Q4 21

No bigger shock than observed between Q4 20 and Q4 21

3 observations bigger than shock observed between Q4 20 and Q4 21

1 observation bigger than shock observed between Q4 20 and Q4 21

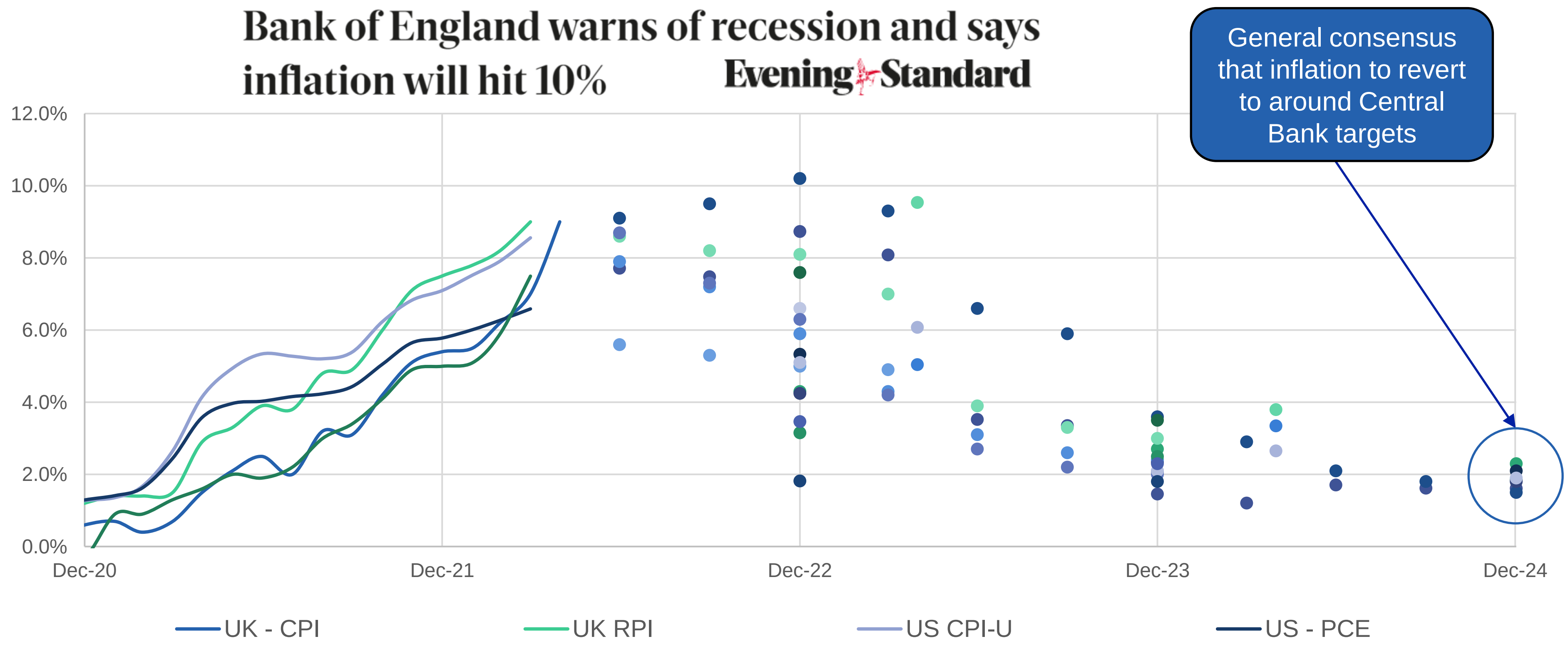
2 observations bigger than shock observed between Q4 20 and Q4 21

Range of Inflation Forecasts (as at March 2022)

In general, inflation rates are anticipated to remain elevated through 2022 before reducing to target levels over the following 1-2 years

Inflation forecasts taken from:

Central banks
Global organisations
Government
Markets
Consensus forecast



Lloyd's Definition

We define **claims inflation** as the change in claims cost of a like for like policy over time. Claims cost is considered as all costs in relation to the payment and settlement of a (re)insurance claim. This includes loss adjustment expenses directly associated with the claim, such as claims handling. Like for like means having consistent policy wording, exposure and level of coverage, such that the change in claims cost is considered after normalizing for changes in policy terms and other differences in the policy. Our definition of claims inflation covers changes in claims cost due to trends which affect the number (frequency) and/or size (severity) of claims.

Claims inflation is the sum of **economic inflation** and **excess inflation**:

– **Economic inflation**: Changes in claims costs as captured through published economic indices relevant to a (re)insurer's mix of business. Typically, this is inflation in the cost of a basket of selected goods and services or average wage costs, which are captured in price and wage indices (such as RPI, CPI and ASHE in the UK, which are produced by ONS).

– **Excess inflation**: Changes in claims costs beyond what is captured in economic indices, including factors which are specific to a (re)insurers' business and including social inflation. Typically, this is inflation associated with resources specific to the nature of the claims costs of the (re)insurer (beyond that captured in generic inflation indices); or emerging risk from new materials, medicines and technologies; changes in the legal environment; evolving social attitudes towards claiming; and political developments.

We define **social inflation** as a subset of excess inflation, which more narrowly pertains to claims inflation as a result of societal trends. This includes rising costs of claims resulting from increased litigation, broader definitions of liability (excluding those caused by changes in policy terms and conditions), more plaintiff-friendly legal decisions, larger compensatory jury awards and social movements.

Claims inflation	Property D&F	General liability	Medical malpractice
Economic	•The most relevant published economic index/indices •E.g. CPI, ONS construction output price indices (OPIs)	•The most relevant published economic index/indices •E.g. RPI, CPI	•The most relevant published economic index/indices •E.g. ASHE index (careworker wages), CPI - medical care commodities, medical care services
Excess (excluding social)	•Increase in cost of building materials (including as a result of supply chain issues) above economic index used •Wage inflation for construction workers above economic index used (including from constrained resource as a result of COVID-19) •Increase in property prices	•Wage inflation above economic index used •Cost of legal services above economic index used •Advancement in medical treatments •Construction issues arising from increased infrastructure activity – e.g. defects and cladding issues	•Health care costs •Medical equipment costs above economic index used •Cost of legal services •Advancement in medical treatments •Digitalization of health care services
Social	•Litigation of business interruption claims •Increase in claim frequency through damage caused in protests associated with social movements	•Third-party litigation funding •Court award trends •Tort and statutory reforms •Emerging concepts in tort law •#MeToo movement	•Court award trends •Tort and statutory reform

What needs to be done?

Principle of Proportionality

Economic inflation

Mean

Future projection

Volatility of indices from ESGs

Explicit allowances – in addition to current?

Volatility in CoV and dependency assumptions/ inflation drivers

Volatility

Excess inflation

- Consistency of assumptions
- Transparency of assumptions
- Understanding/ review and challenge by board → ultimate ownership
- Clear communication - uncertainty by presenting ranges

Inflation

Mean projections – explicit allowances in reserves and SBF

Requirement by Lloyd's for SBF and Q2 reserving process

AIM: explicitly consider inflation allowance (split into economic and excess (including social inflation) by class:

– in SBF for loss ratio setting
– in pricing
– for setting reserves (and the roll-forward of reserves for the capital model)
– for modelled loss ratio setting for underwriting risk parametrisation

Considerations to achieve the aim:

– Different classes of business will have exposure to different drivers of inflation – assumptions will need to be set:
  - Underwriters/claims teams: what are the drivers of claims costs by geography?
  - Use weightings of different indices to project class specific indices,
  - Reserving: payment pattern by class to determine weighting of future years

– Be clear on inflation assumptions already in the past data, i.e. how does the new allowance compare to historical allowances
– In particular for reserving distinguish between: any additional inflation allowances already in case reserves, IBNR allowance and IELR allowance

– Business needs to agree on future projections of different economic indices over time
  - Involve relevant areas of the business, e.g. economic experts, investment teams
  - Take into account different scenarios

– Excess inflation trends needs to be projected (class specific at times), e.g. timber rebuilding costs for property classes

– The capital model captures uncertainty around the mean inflation assumptions, therefore consider this when setting your assumptions

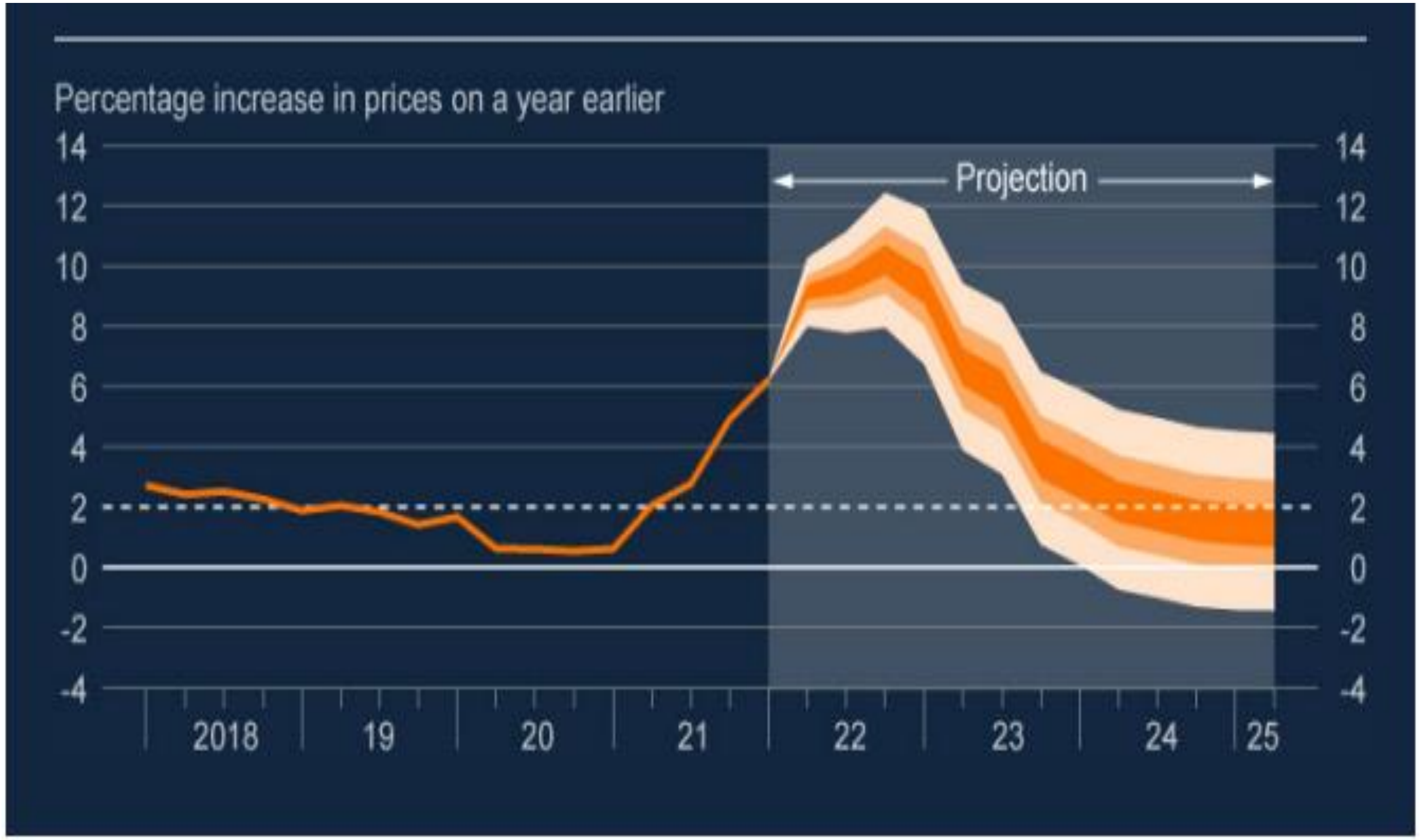
Considerations for the 2023 LCR

Economic inflation

- Generally modelled as **driver from ESG** for most syndicates
- Not very material – is that true still? → **Principle of proportionality**
- **Mean inflation** should **align** with wider business views
- Ensure **ESG is updated** to reflect latest view
- **Review and validate ESG assumptions and outputs** – you must own and be able to justify all inputs to the internal model
- **Sufficient volatility for shocks** – make sure this is not driven by model limitations
- **Make adjustments** to the ESG where appropriate
- Review the assumptions around which indices drive which classes

Considerations for the 2023 LCR

CPI inflation May 2022 projection (BoE MPR), based on market interest rate expectations



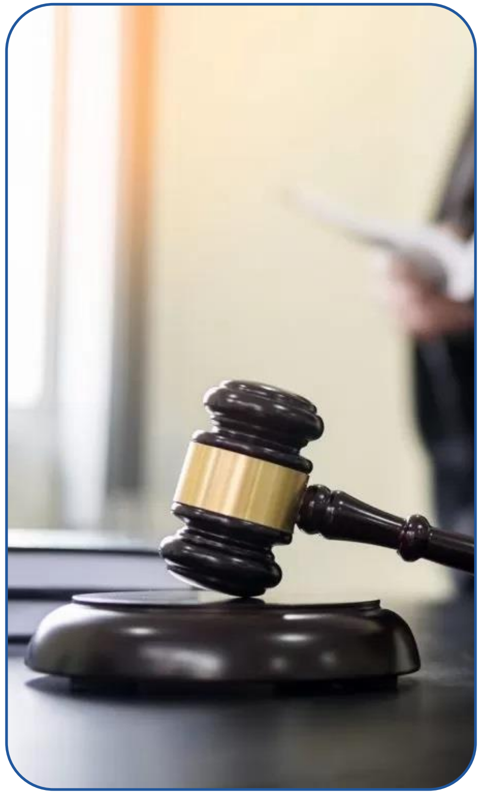
Considerations for the 2023 LCR

Economic inflation beyond the ESG

- **Catastrophe risk**
  - Severities need to be adjusted to reflect expected rebuilding costs for 2023
  - Ensure exposure projections are appropriate for 2023 not just rolled forward
- **Non-cat underwriting risk**
  - Severities also need to be potentially adjusted
  - On-levelling of historic claims needs to be updated when curves are fitted
- **Reserve risk:** Mean changes might have indirect impact on volatility
- **Market risk:**
  - Market value of current portfolio may have decreased, reducing risk
  - Expectation of interest rate rises increase future returns, lowering market risk
  - May lead to negative contributions to capital if rate rises offset inflationary impact on claims -> review market vs. insurance risk dependency

Considerations for the 2023 LCR

Excess inflation



- Continue work on excess and in particular on **emerging trends** like social inflation – in line with claims inflation thematic review from last year and response to feedback:
  - Are **systemic effects** of inflation captured appropriately?
  - Where excess inflation is a material risk driver, is there use of **explicit drivers** to model and quantify volatility?
  - Is the effect on **dependency** between classes and **contribution** to capital appropriate?
  - Leveraging effect on long-tailed liabilities captured?
- Has the current environment had an impact – and/or does it increase uncertainty?
  - Future settlement costs may be more uncertain - rebuilding costs clearly changed
  - Potential for higher frequency of claims going to court if there is an economic downturn
  - Dependency between excess and economic inflation in the model

Considerations for the 2023 LCR

Validation

- Lloyd's prior thematic review found that inflation is often validated implicitly in insurance risk testing, this was identified as an area of weakness
- If there has not been been sufficient validation of the modelling area in the past, is a **deep dive** needed?
- **ESG model and ESG adjustments should be validated**
- Is the **modelling approach commensurate** with senior management view of the risk, if not has there been challenge to change or improve the model?
- Validation testing should be specific, targeted and employ a wider range of testing tools than we've seen in previous reviews, for example employing SSTs, RST and type 1 and 2 sensitivity tests

LLOYD'S

Closing Remarks

Emma Stewart

Chief Actuary

LLOYD'S

Summary

- **RIO** has been implemented and will lead to an **enhanced fast track process**
- **BAU oversight during LCR submissions streamlined further** with waived loadings to stay and scaling back of reserving tests of uncertainty
- Areas of focus **non-natural catastrophe risks and claims inflation**
- **NEW Areas of focus ECONOMIC INFLATION and UKRAINE**
- Time to **re-prioritise** your workloads

LLOYD'S

Closing Remarks

- We appreciate that this is another very busy year for capital modellers and validators
- Another blackish/grey swan event – after we had just dealt with COVID
- What does that mean?
  - Are models useless?
  - More focus on emerging risks required?
  - Scrutinise our own biases?



What does the year look like and where are we now?

Q1

- Publication of all Capital Guidance
- RIO technical briefing (27 January)
- Capital briefing (8 February)
- Retrospective loadings assessment (Lloyd's to inform syndicates which will be loaded by 3 March)
- Validation critical feedback responses (within Q1)
- March reassessment templates and where necessary, MY CIL LCR resubmissions (3 March)
- IMO returns (7 March)
- Data request due for thematic review on non-natural Catastrophes

Q2

- Self Assessment against the Principles submitted to Lloyd's (29 April)
- New model application reviews
- Deep dives reviews (linked to MMCs where possible)
- Market messages (18 May)
- Capital and Validation briefing (8 June)
- Exposure Management reviews of Non-Nat Cat maturity
- LCR instructions and focus areas return published
- Updates on Reserving Test on Uncertainty – communication to syndicates
- Syndicate Categorisation confirmed ahead of CPG (June)

Q3/ Q4

- Exposure management model completeness return – due 7th of July
- LCR submissions – timelines were published in Market Bulletin Y5373
- Standard Formula Return (end of November)
- NED Forum (29 November)

Time for questions

Disclaimer

This information is not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation. It is the responsibility of any person publishing or communicating the contents of this document or communication, or any part thereof, to ensure compliance with all applicable legal and regulatory requirements.

The content of this presentation does not represent a prospectus or invitation in connection with any solicitation of capital. Nor does it constitute an offer to sell securities or insurance, a solicitation or an offer to buy securities or insurance, or a distribution of securities in the United States or to a U.S. person, or in any other jurisdiction where it is contrary to local law. Such persons should inform themselves about and observe any applicable legal requirement.

Appendices

Analysis of Change

The area we give the most feedback for – how can you avoid that

Area	Common problems observed	What we expect to see
Explanations provided within the AoC	Movement is explained **but not justified.** **Sometimes, not even explained**	• Take a top-down view – step back from the model • Explain in terms of **risk profile** **• Justify using quantitative analysis**
Contribution in capital	Ignored	**Explain** why **contribution to capital** has changed or remained stable!
Form 600 ratios	Only absolute movement in capital is discussed	Make sure key **risk: exposure metrics are justified** as they are key in our oversight.
Class level changes	Often **not enough detail** provided	Focus on: - Material classes - Material movements - Counterintuitive movements (e.g. reduced volume and volatility)
Supporting analysis	Absent or lacking in sufficient detail Not linked to risk profile	Provide sufficient detail – remember that we are not part of the day-to-day business Parameter changes should comment on link to risk profile
Key drivers	Included in AoC but not drawn out	**Direct our attention to the important factors** causing movements in capital

Examples:

Bad: "capital increased because of X"
Better: "and this is reasonable / as expected because of Y"

Bad: " "
Better: "the movement in reserve risk volatility in class Z arises due to the change in mix of reserves across YOA… as shown in this table"

Bad: "underwriter revised their view" / "extra year of good experience"
Better: "The extra year of data further supports our view that the previous explicit allowance for prudence can be reduced this year"

LLOYD'S

What are we expecting of your submission?

Examples of Analysis of Change – individual changes

Good: Link to risk profile

Capital increased by 3% due to risk profile changes in the updated 2020 SBF. The premium risk increase relating to this was £20m, which was mainly driven by changes in class A, B and C.

In the 2020 SBF, class A has increased line sizes from £20m to £50m in line with strategy to increase market share. The parameterisation of large losses in this classes has been updated to allow for this increase in line sizes, as well as updating frequency assumptions considering increased volumes but also potential for aggregations. The associated RI programme has also been updated with higher retention, moving from £10m to £20m.

A secondary impact of this was a reduction in RI credit risk – however, the impact on capital of this was immaterial.

Given the change RI credit risk could also have increased (due to more business being written at higher line sizes) – i.e. particularly important that the movement is explained and reasoned, more details can be helpful (e.g. premium split or policy count by line size bands).

Not sufficient: Only a description of individual changes is provided

"Capital increased by 3% when the 2020 SBF was updated."

Template like below might be helpful:

Description of change
Rationale for change
Data / risk profile / parameter changes?
Methodology changes?
IT / structural changes?
Expectation of change: total capital / risk categories (mean and 1:200, uSCR and 1-yr)
Actual impact of change
Validation performed
Supporting analysis
Governance (change made by, reviewed by, sign-off, dates)

What are we expecting of your submission?

Examples of Analysis of Change – Premium Risk by Class

Class comparison from SuppQ used in our analysis:

Reduced volume with stable volatility – counter-intuitive

Increase in 99.5th in material class

Reduction in volume and volatility – counter-intuitive

Significant decrease in 99.5th in material class

Reduction in contribution

Class Name (in order of size by net premium)	2021 CiL Net Premium	2021 CiL Mean Net Claims	2021 CiL 99.5th Claims / Mean	2021 CiL Contribution / Mean	2020 CiL Net Premium	2020 CiL Mean Net Claims	2020 CiL 99.5th Claims / Mean	2020 CiL Contribution / Mean	Movement Mean Net Claims (%)	Movement 99.5th: mean ratio (%)	2021 CiL Contribution %ile to Premium Risk	2020 CiL Contribution %ile to Premium Risk	Change in
1. Property Treaty	200.0	160.0	238%	136%	200.0	160.0	255%	136%	0%	-6%	83%	83%	[illegible]
2. Casualty Treaty	100.0	80.0	374%	154%	110.0	88.0	382%	154%	-9%	-2%	82%	82%	[illegible]
3. Marine - Cargo	90.0	72.0	436%	218%	90.0	72.0	340%	180%	0%	28%	95%	95%	[illegible]
4. Casualty - US	80.0	64.0	264%	123%	80.0	64.0	300%	145%	0%	-12%	74%	74%	0%
5. Casualty non-US	70.0	56.0	237%	119%	70.0	56.0	245%	119%	0%	-3%	73%	73%	0%
6. D&O	70.0	56.0	532%	183%	70.0	56.0	550%	183%	[illegible]	[illegible]	92%	92%	0%
7. Property Binders	60.0	48.0	413%	282%	60.0	48.0	413%	350%	[illegible]	[illegible]	89%	97%	-8%
8. Marine Hull	20.0	16.0	1011%	645%	50.0	40.0	1011%	645%	[illegible]	[illegible]	98%	98%	0%
9. Aviation	10.0	8.0	408%	199%	10.0	8.0	420%	199%	[illegible]	[illegible]	91%	91%	0%
10. Med Mal	5.0	4.0	191%	116%	5.0	4.0	200%	116%	[illegible]	[illegible]	75%	75%	0%
Total	705.0	564.0	165%		745.0	596.0	178%						

Analyst's initial view would be that there has been a weakening of the modelling of premium risk. Any material classes with material movements will be investigated, also counter-intuitive movements.

Disclaimer – figures are dummy figures and not necessarily internally consistent.

Addressing Prior Feedback and Loadings

Do this by the deadline given!

Discuss with your point of contact ASAP if this isn't possible

Documentation should clearly state the feedback that has been given previously and what has been done to address it.

Signpost to where more detail is provided if necessary!

If a feedback point is no longer relevant, you should make that clear.

A feedback point isn't considered addressed until we have reviewed your response and closed it

Not addressing prior feedback is considered a governance failure that may lead to a controls loading

LLOYD'S

Focus Areas Return

This is a key part of our review!

Information in here should be consistent with other returns (eg LCR, QMA,…)

- And internally consistent with itself!

Clear signposting to where we can get more information

- The clearer the signposting, the less back and forth there is between Lloyd's and MAs and indicative loadings that could have been avoided by provided sufficient

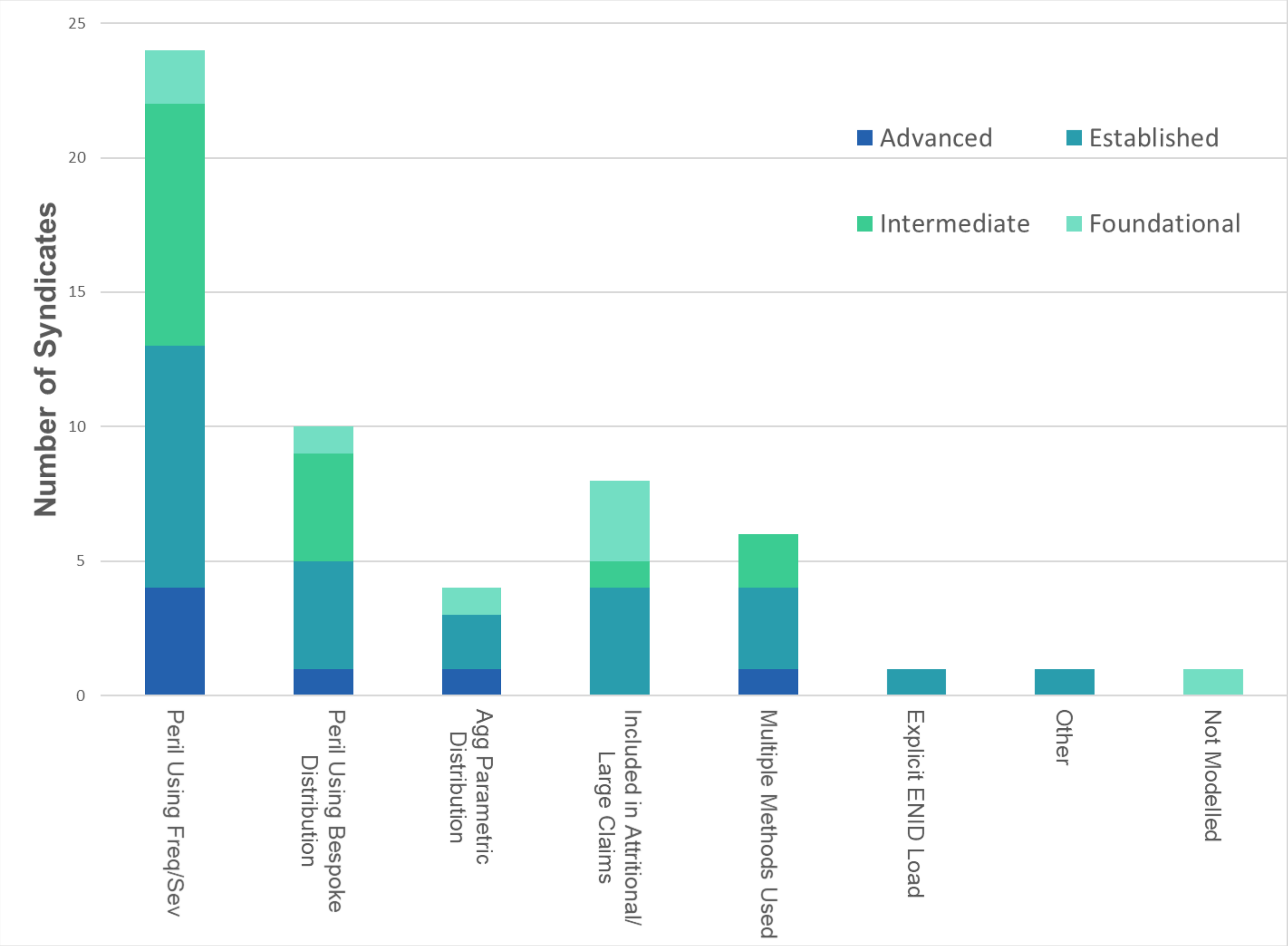
As for other returns, ensure there is sufficient justification where required

Ensure all parts are completed

Expect this to have been reviewed by the validation team

Non-Natural Catastrophes

Methodology/Approach to Modelling Non-Nat Cats

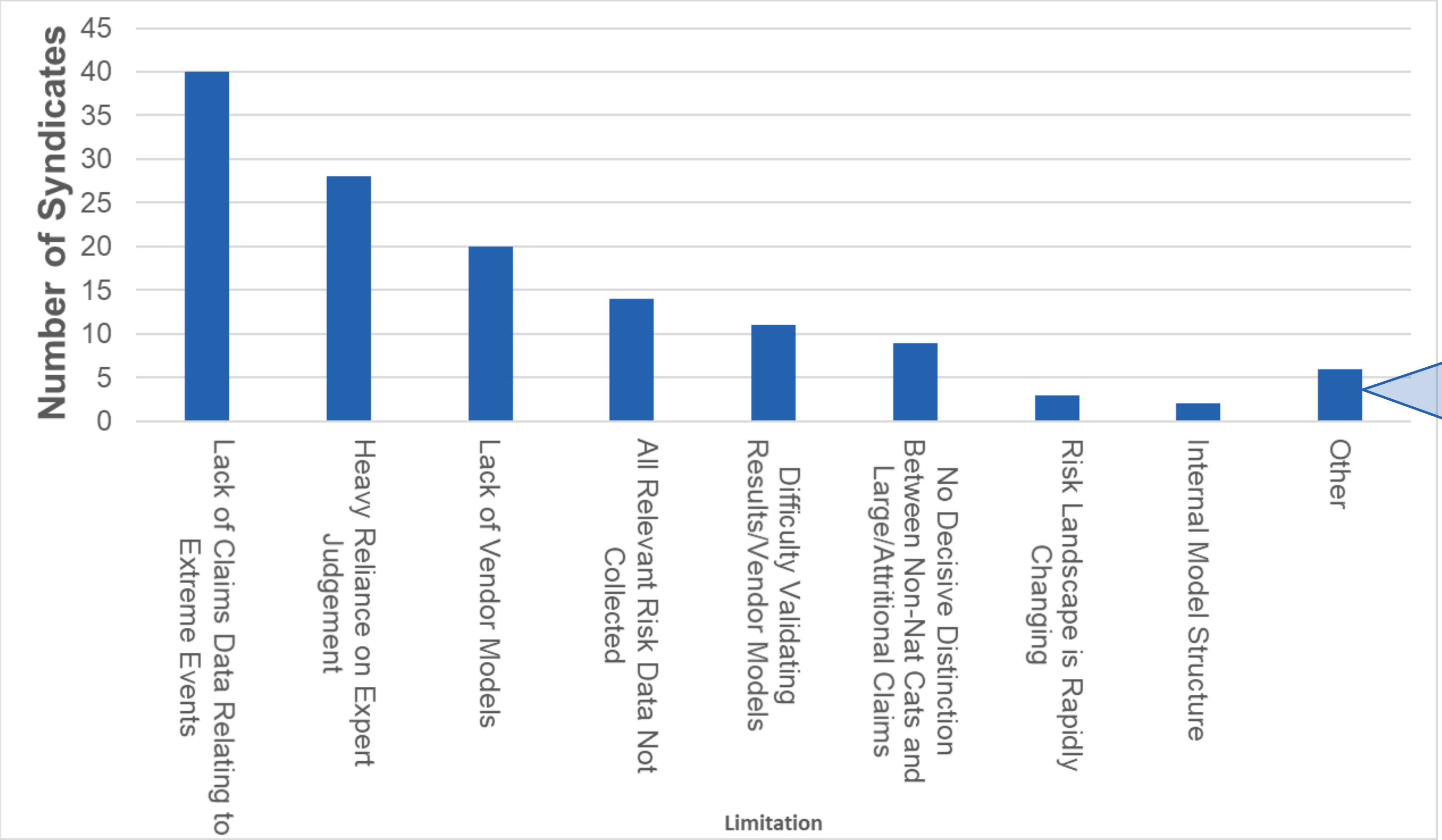


- We collected information in the 2022 YoA Focus Areas on non-Nat Cats to lay a foundation for the non-Nat Cat thematic review.
- The graph shows different methodologies used by syndicate split into the RIO materiality for the non-nat Cat principle.
- The more material Non-Nat Cats are the greater the expected level of modelling sophistication.
- Non-Nat Cat thematic review will give insight into best practices and areas requiring development.

LLOYD'S

Non-Natural Catastrophes

Common Limitations in the Modelling of Non-Nat Cats



Other limitations include:

- Less established modelling techniques.
- Lack of decisive exposure measure.
- Limits of platform functionality.
- Scenario analysis risks introducing bias in parameterisation.
- Costs of developing sophisticated modelling outweighs benefits.
- Unclear optimal balance between generic allowance and specific peril modelling.

- Syndicates should demonstrate that limitations do not cause a material misstatement of capital.

LLOYD'S

Non-Natural Catastrophes

Examples of Bespoke Scenarios

- Legal change event in specific territory.
- Widespread financial product mis-selling.
- Major marine collision in US waters.
- Wide reaching building material defects.
- UK recession.
- Two coordinated terrorist attacks in New York.
- Illegal access to transportation sector IT systems leading to data or system interference.
- Hack of software controlling autonomous vehicles.
- Design mistake in infrastructure project.
- Default of Eurozone member.
- Cyber attack damaging oil assets in the North Sea.