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# Validation Workshop

2021

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# Agenda

- Introduction
- 2021 observations
- Targeted validation – COVID-19
- Insights from the LIM
- Moving forward

# Introduction

Mirjam Spies

Senior Manager, Syndicate Capital

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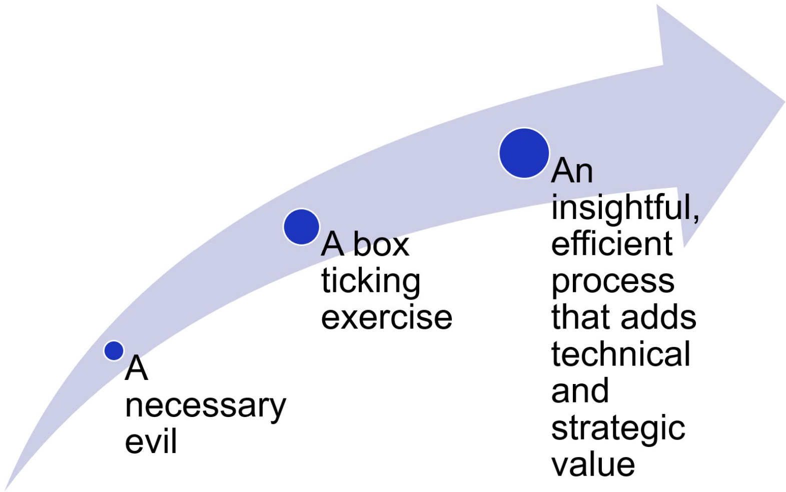
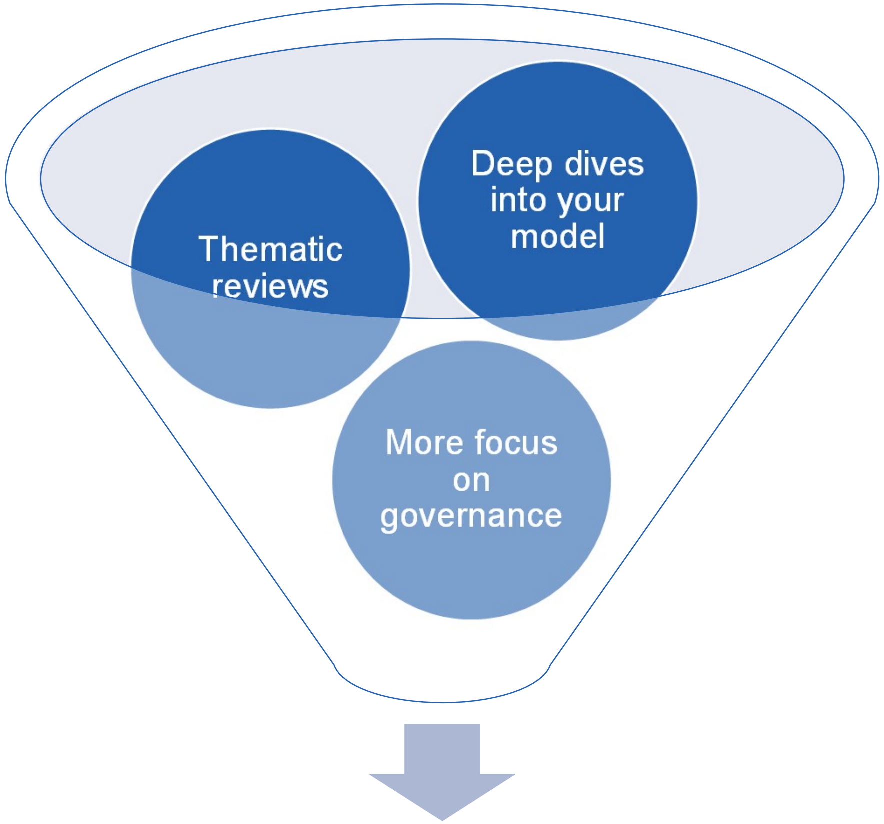
# Validation should add value and not be a box-ticking exercise




# Principle-based approach boosting Fast Track




Principle-based approach

Additional benefit: Boosting Fast Track

- Minimise review required in planning season
- More predictable capital requirements
- More time to resolve any issues found

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# Lesson learnt from COVID-19 for validation should be taken on board in the future

## Basic requirements for validation

- Validate overall movements in SCR / model changes
- Perform risk ranking and assess materiality of parameters
- Test all material components of the model
- Validate model output (including stability)

## Questions to drive validation

- Questions the board is concerned about
- Changes to risk profile that warrant looking into
- Deep dives on the list
- Lloyd's focus areas:
  - Model loss ratios
  - Non-modelled nat cats
  - COVID-19 ongoing monitoring
  - Claims inflation
  - Non-nat cat accumulation

## Tools to employ

- Stress and scenario testing
- Backtesting
- P&L attribution
- Type II sensitivity testing

# 2021 observations

Adhnan Chaudhry

Actuary, Syndicate Capital

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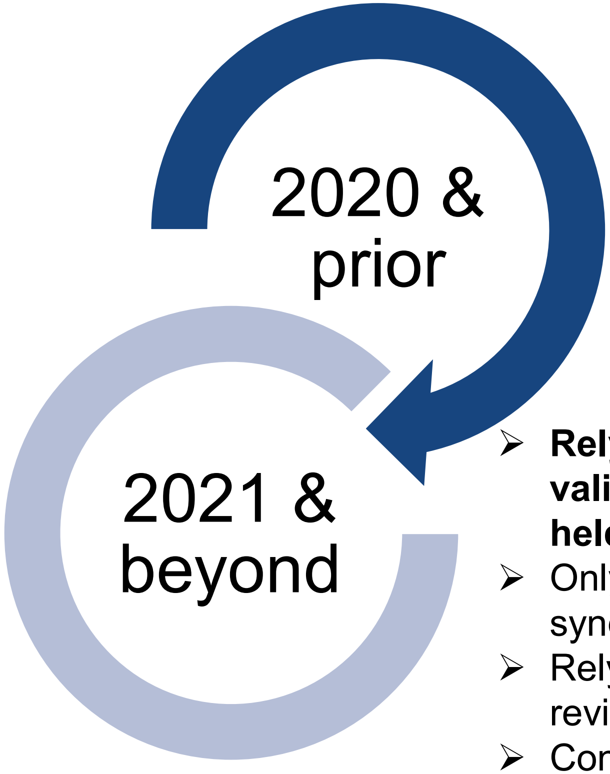
# MRC approach to review validation reports




- Detailed review of all syndicate validation reports / approaches against Minimum Standards
- Review 3 year validation plans
- Thematic reviews of validation tool usage
- Review outstanding feedback on validation reports

- **Rely on syndicate governance and signposting template to ensure validation process works as expected and compliance with Solvency II is held up**
- Only carry out detailed review of validation reports / approaches for new syndicates and syndicates where we have concerns about validation
- Rely more on validation reports for capital submissions and Lloyd's thematic reviews / focus areas
- Continue to track outstanding feedback on validation reports

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# How we reviewed 2021 YoA reports

**Detailed review**: Review against Minimum Standards

**Prior validation feedback**:

- Review of outstanding feedback from prior validation report submissions
- Review feedback from 2020 thematic review of RSTs and testing against experience

| Type of review | Number of reviews |
|---|---|
| Detailed | 7 |
| Prior validation feedback | 49 |

- Of the 49 prior feedback reviews, 37 sets of feedback were closed while 12 remain open – standard of reports has been improving
- For thematic review of RSTs and backtesting majority of critical and material feedback points were closed but there remain areas of testing that could be improved

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# Standard of RSTs and testing against experience has improved

RSTs

+ Setting pass/fail criteria: Improvement in objectivity and robustness of criteria used, referencing pre-defined ranges of sims around expected return periods
+ Independence of the testing: More syndicates comparing against management estimates which are truly independent from the model output, the point of unviability is not always fixed at the 1 in 200 / SCR level
+ Granularity of testing: Testing is being better defined at more granular levels than just for the primary loss/risk category
- Minor risk categories: Impact on minor risk categories such as credit and operational risks are not always given enough thought
- Secondary impacts: More consideration of second order impacts should be made i.e. knock-on losses from the primary loss drivers – this can aid the validation of dependencies between risk types

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# Standard of RSTs and testing against experience has improved

Testing against experience

+ Setting pass/fail criteria: Improvement in objectivity and robustness of criteria used, syndicates responded to feedback by introducing a statistical basis to assess outcomes
+ Justification of the data: More justification for excluding data points
- Consistency between data and model output: This is still an issue with some comparisons, e.g. carried reserves with reserve margins are being used to backtest best estimate reserve volatility
- Non-insurance risks: Backtesting should be further extended to market, credit and operational risks, with the aid of external data
- ENIDs: Testing could be improved by referencing how ENIDs have been treated to allow for deficiencies in the data sample and model outputs

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# Validation themes arising from capital reviews in 2020

1. Line between capital modelling and validation teams not always clear
2. Reporting of escalation process
3. Quality of analysis of change
4. Post-diversified contributions
5. Deep dives / 3 year plans
6. Validation reports covering multiple syndicates

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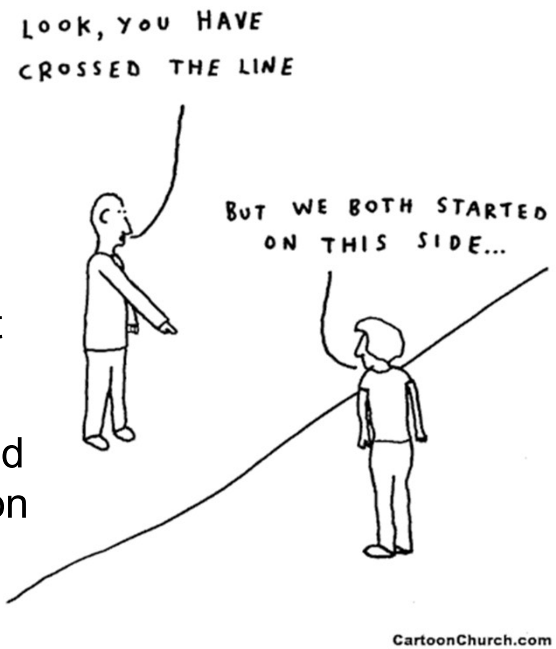
# 1. Line between capital modelling and validation teams not always clear

Independence vs. efficiency

- ➢ As per the Minimum Standards, there should be sufficient independent challenge of the model
- ➢ Important that validation offers true challenge and not just appear independent "on paper"
- ➢ Independence extends to reporting lines and governance for validation issues
- ➢ Where should the boundary sit between the first and second line?
  - ➢ More efficient for first line to carry out bulk of the testing, second line is reliant on this but needs to be close enough to the detail to challenge
  - ➢ If second line do more testing, process can be cumbersome for both sides and effort is duplicated (e.g. same / similar tests run as part of the parameterisation process for "justification" and then again for "validation")



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# 1. Line between capital modelling and validation teams not always clear

Example delineation of responsibilities

| Task | Capital team | Validation team |
|---|---|---|
| Implement model changes | ✓ | ✗ |
| Review model changes | ✓ | ✓ |
| **Justify and explain model changes** | ✓ | ✗ |
| Test design | ✗ | ✓ |
| Set pass/fail criteria | ✗ | ✓ |
| Run tests | ✓ | ✗ |
| Escalate test outcomes | ✗ | ✓ |
| Respond to escalations | ✓ | ✗ |
| Remediate model | ✓ | ✗ |
| Remediate test design | ✗ | ✓ |
| Decide final test outcome | ✗ | ✓ |

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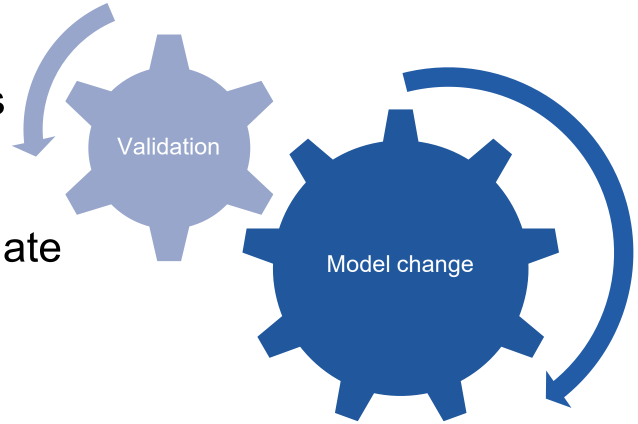
# 1. Line between capital modelling and validation teams not always clear

What makes this difficult

## Challenges

- Point of validation is to find issues – you work in the same company but you charge the company for it
- Validators will receive challenge from capital team and other stakeholders
- Validation team not close enough to the model so can miss important details
- High turnover of validation staff and providers
- Validation not close enough to model development plan so get involved too late




## Lloyd's expectation

- Validation team own their issues and stand up to pressures
- First line needs to explain and justify methods, assumptions and model change impacts, validation should challenge gaps more
- Validators to be more involved in model development plan so more testing can happen in parallel and less after changes have been made

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# 2. Reporting of escalation process

Escalation and remediating issues is an important part of the validation cycle

- Some reports document evidence of test escalations, others do not
- Many show tests that initially fail or are rejected, but later pass or are accepted. Detail about the steps taken to justify the final outcome is often missing.
- Good reports emphasise test failures and how the validation framework dealt with them
- Provide examples in your report, to demonstrate the efficacy and independence of the validation process.
- Elements of a robust escalation process include a:
  - Well-defined trigger in terms of validation test outcomes and risk materiality;
  - Description of the person(s) responsible for the escalation;
  - Clear expectation of what is required for resolution of the validation escalation.

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# 2. Reporting of escalation process

### Test failure

- Escalate to capital modelling team
- Consider modifications to the test, if necessary

### Remediation

- Adjust the model
- Adjust validation plan
- Re-run test
- If test remains a fail, consider sensitivity of model output to the result

### Reporting

- Escalate to relevant risk committees
- Consider next steps, such as future changes to the model or testing approach
- Provide evidence of the process in the validation report

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# 3. Quality of analysis of change

- New analysis of change (AoC) guidance issued in 2020
- AoC document should be prepared by first line – capital team should understand movements and explain at the right level to satisfy all stakeholders
- Validation role is to review and challenge the AoC and independently test / verify whether the movements make sense – ensure sufficient information is included in the document
- Lloyd's observations:
    - High-level risk category movements generally well explained
    - Granularity of the change analysis not always sufficient
    - Explanation of unintuitive movements is often missing, e.g. when one-year and ultimate movements are different, second order impacts of a change on unrelated risk categories
    - It is NOT sufficient to explain standalone movements only – contribution to capital also needs to be covered

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# 4. Post-diversified contributions

- Validation of this does not get enough attention - should challenge movements by risk category, and at a more granular level where necessary
- Make sure capital team has adequately explained movements in the context of changes in the risk profile
- There should be sufficient testing of the stability of contributions in the validation plan, such as reviewing the post-div risk results using multiple seeds/runs – this should support movements 'resulting from simulation error'

| | | Standalone | | | | | Diversified | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Run | uSCR | Premium | Reserve | Credit | Market | Op | Premium | Reserve | Credit | Market | Op |
| Base | 874 | 524 | 350 | 131 | 262 | 175 | 411 | 236 | 74 | 92 | 61 |
| Seed 1 | 861 | 517 | 344 | 129 | 258 | 172 | 405 | 232 | 73 | 90 | 60 |
| Seed 2 | 774 | 465 | 310 | 116 | 232 | 155 | 364 | 209 | 66 | 81 | 54 |
| Seed 3 | 828 | 497 | 331 | 124 | 249 | 166 | 389 | 224 | 70 | 87 | 58 |
| Seed 4 | 820 | 492 | 328 | 123 | 246 | 164 | 385 | 221 | 70 | 86 | 57 |
| Average | 821 | 493 | 328 | 123 | 246 | 164 | 386 | 222 | 70 | 86 | 57 |

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# 5. Deep dives / 3 year plans

- Syndicates still fail to compare validation carried out against the 3 year validation plan in their reports.
- Quality of deep dives needs to be improved if they are to be relied upon in later validation cycles.
- The events of last year reminded us that the plans need to be flexible so that workloads remain manageable
  - Have a clear process to adjust the plan and change priorities with clear ownership of the sign off of changes
  - Think about resource availability (internal and external)
- If the plan has changed, communicate a restated version in the report, comparing against the original

| Deep dive model area | 2021 SCR | 2022 SCR | 2023 SCR |
|---|---|---|---|
| **Reserve risk** | | | |
| Non-cat | ✓ | | |
| Catastrophes | ✓ | | |
| Reinsurance | ✓ | | |
| **Premium risk** | | | |
| Non-catastrophe | | ✓ | |
| Natural catastrophe | | | ✓ |
| Man-made catastrophe | | | ✓ |
| Non-modelled events | | | ✓ |
| Reinsurance | | | ✓ |
| **Insurance risk** | | | |
| Intra/inter risk dependency | | ✓ | |
| One-year risk | ✓ | | |
| Inflation | | ✓ | |
| ENIDs | ✓ | | |
| Model adjustments | | | ✓ |
| Non claim P&L items incl. expenses | | | ✓ |

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# 6. Validation reports covering multiple syndicates, including SPAs

- Validation reports tend to be heavily focused on the most 'material' syndicate for the agent
- Can re-use or leverage testing of one syndicate for others, so long as the credibility of this approach is assessed and explained in the report
- Testing specific to every syndicate should still be carried out and reported:
  - There will be differences in risk profile and what drives capital
  - A material risk to an SPA may not be an issue for the host syndicate and therefore needs a different level of focus for the different syndicates
  - RSTs, stress and scenario tests, P&L attribution, testing against experience and relevant sensitivity tests should be syndicate specific
  - One validation report for multiple syndicates is still acceptable.

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# Targeted validation - COVID-19

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# Challenges faced by the market

Old validation findings not addressed

Late and reactive model changes

New testing framework needed

Time to validate squeezed

Emerging information

Resource availability

Lack of relevant data

Communication to the Board

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# How the market responded

| Areas of strength | Areas for development |
|---|---|
| Expanded use of top-down testing such as scenario tests and RSTs – more 'real world' testing should be employed in future | Derivation of the PML and the explanation of it – not enough information about chosen scenarios or how they informed model changes/parameterisation |
| Being able to validate a higher number of model iterations than usual | Link between PML, 1 in 200 and return periods from backtesting not always clear or well explained, consistency of scenario definition between Focus Areas and validation not always there |
| Scaled back non-core validation, re-prioritised testing and applying full suite of validation tools to assess pandemic impacts | Second order impacts not well covered – we noted 6 in the Focus Areas but majority of syndicates only commented on 2-3 of these |
| Produce standalone COVID-19 reports documenting model changes, validation and response to Lloyd's Focus Areas template | Validation should challenge appropriateness of the ESG more |

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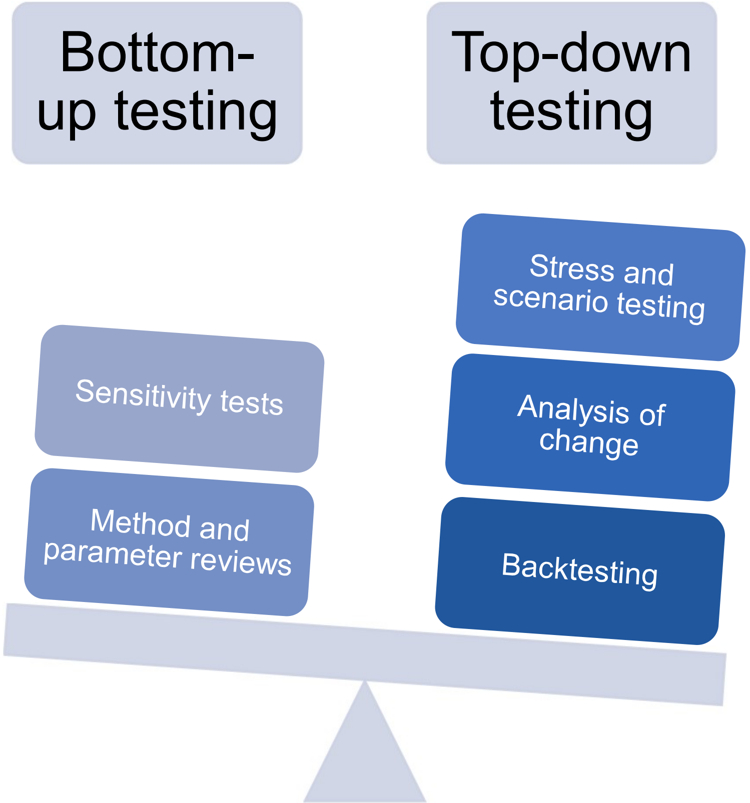
# Top-down testing was a highly effective tool for Board communication



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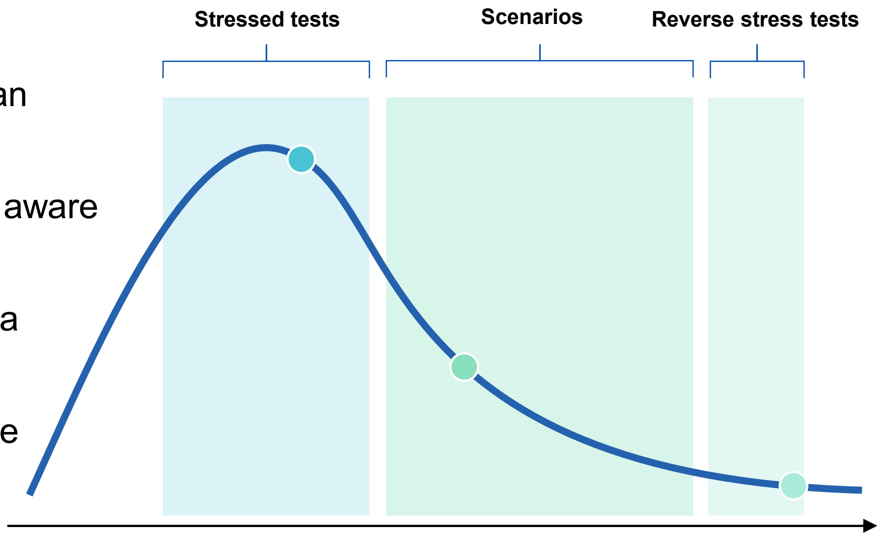
# Stress and scenario testing

## Best practice approaches

- Setting scenarios involved multiple experts and not just actuaries, e.g. a 'COVID action group' to bring together underwriters, exposure management, investment experts, planning team and other technical experts to develop a consolidated view
- Where triggers for a scenario are breached, have a feedback loop with scenario experts to decide how acceptable the result is and whether the scenario or model should be adjusted
- Document scenarios and changes to them carefully, as interrogating them can uncover useful information for capital modelling
- Validators maintain a link to other processes such as the ORSA, so they are aware of key issues and are guided by the latest views of Risk Management
- Impact on all risk types considered, including second order impacts such as a recession and social trends
- Scenario definitions consistent between PML, validation report and rest of the organisation



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# Stress and scenario testing

**Examples of the scope for pandemic scenarios:**

- Pandemic: Multiple waves of infection/mutations and resulting impact on economy and public attitude
- Pandemic: Government intervention policies lasting longer than expected
- Economic: Economic impacts from initial pandemic wave through to delayed impacts resulting from extended Government support
- Economic/Political: Impacts from longer term economic recession, geopolitical tensions and trade concerns
- Reinsurance: Reinsurance dispute risk and default risk
- Legal: Adverse outcomes from test cases and policy wordings not holding up
- Social: Impacts from social trends (changing work patterns, social recession (=impact on physical and mental health from extended lack of social interaction), social inflation, increased cyber risks

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# Insights from LIM

Gurmeet Ghumman

Head of Validation, Risk Management

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# Learnings from 2021 LIM validation

## Challenges faced by the market were also experienced by the LIM validation team

## The validation team responded in a similar fashion to some leading examples from the market

- SST suite includes more relevant forwarding looking scenarios
- Increased external support to still deliver the plan but some changes necessary

## Outcome: Challenging the methods and processes

- Does the modelling methodology and framework hold up in light of experience?
  - Review of insurance risk dependencies and dependencies between risk types
- Are existing processes sufficient or do new processes need to be introduced?
  - E.g. if the risk of RI defaults is heightened due to the market event, then a process should be in place to trigger a review of credit risk parameters

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# Learnings from 2021 LIM validation

**Model assumptions and limitations may not hold up in a stressed environment**

  - Example 1: Updating the model for increased exposure vs volatility parameters and how this correlates to other areas in the model
  - Example 2: Updating the model for specific volatility can lead to unusually large increases in risk, where dependency with another risk area exists
- Can Validation / Capital pre-empt future surprises?
  - Trigger event in place to capture movements in exposure
  - Real-world sensitivity testing and that which adapts to model changes
  - Stress and scenario testing for emerging risks
  - Run through expert judgement and limitation logs to test materiality and falsifiability criteria

We can't catch everything, but validation can be proactive!

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# Learnings from 2021 LIM validation

### Model development: How validation can be influential

- Don't underestimate the value of thematic findings
- Longer term objectives: can the model cope with future / long term business plans?
- Focus on model use: are there any current projects / questions from key stakeholders that can not be addressed by the model?
- Are there issues that haven't been addressed for a number of years? Are there circumstances in which these can become more material?
  - Tracking of validation issues and reporting each issue through the governance structure can help with stakeholder engagement
  - Stay focused on material findings

# Moving forward

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# Messages from the capital briefing

- Moving to a principles-based approach
- Fast track to be boosted
- Model changes to be prioritised
- Only actual performance drives your capital

# Messages from the capital briefing

Moving to a principles-based approach

We will rely much more on your Pillar 2 controls

We will assess your model holistically

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# Moving to a principles-based approach

**Governance**

- Challenge of numbers presented
- Strong controls

**Validation**

- Independence
- Model as realistic and robust assessment of risks

- Greater reliance on your governance means that if we find material issues this could result in a SII loading – and this could be for wider ranging issues than just the capital model

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# Moving forward

- Moving away from detailed validation reviews to thematic reviews and using validation report in capital reviews/deep dives
- Lloyd's feedback will still be tracked (on validation reports and capital reviews) --> clearly show how feedback has been addressed
- Onus on syndicate to ensure compliance with guidance / minimum standards --> document areas where syndicate doesn't comply, quantify limitation, capital add-on if necessary
- Acceptable to be out of line with guidance if it's demonstrated to be immaterial (and other model development is higher priority)
- Continue to review workloads and step back to think about where validation adds value – quality of tests over quantity
- Track 3 year validation plans and any updates. Show progress against the new plan in validation report and clearly state anything that has been de-prioritised.

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# Focus areas for 2022 validation

1. **Model loss ratios**
2. **Non-modelled natural catastrophes**
3. **COVID-19 ongoing monitoring**
4. **Claims inflation modelling**
5. **Non-natural catastrophes accumulation risk**

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# 1. Model loss ratios

Moving focus to gross loss ratios and relying more on validation for net allowances

## New guidance

- Gross prospective year modelled loss ratio >= gross plan loss ratio (by class of business).
- Net of reinsurance prospective year modelled loss ratio >= net plan loss ratio (at syndicate level)

## Resulting changes to the Reserving Actual vs. Plan (AvP) test

- The test will be carried out on a gross of reinsurance net of acquisition costs (gross net) basis only. The test will not additionally be performed on a net net basis.
- Lloyd's will also move to a risk-based approach to the testing.
- Lloyd's will place greater reliance on challenge by validators to ensure the reinsurance assumptions and the resultant output net loss ratios are appropriate

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# 1. Model loss ratios

Onus is on validation to test appropriateness of model loss ratios

More reliance on validation instead of testing by Lloyd's to model loss ratio by class of business is appropriate.

In detail we ask that validators consider the following guidelines:

1. Validators to consider historical actual vs plan in determining if the prospective year loss ratio is appropriate.
2. Validators should ensure in that the LCR instructions (regarding the floor to the modelled loss ratio) is complied with. Lloyd's will check this, but the expectation is that this will have been validated.
3. Moving Lloyd's AvP testing to a gross only basis will place greater responsibility on validators to make sure that appropriate RI programmes are incorporated in the model and that model net loss ratios and plan net loss ratios are consistent.
4. Validation reports should clearly call out any self-uplift applied by the syndicate in its modelled prospective year loss ratio (including quantum and rationale for the self-uplift) on both a gross and net basis.

A summary of how the validator has addressed these points should be included explicitly and signposted in the validation report.

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# 2. Non-modelled natural catastrophes

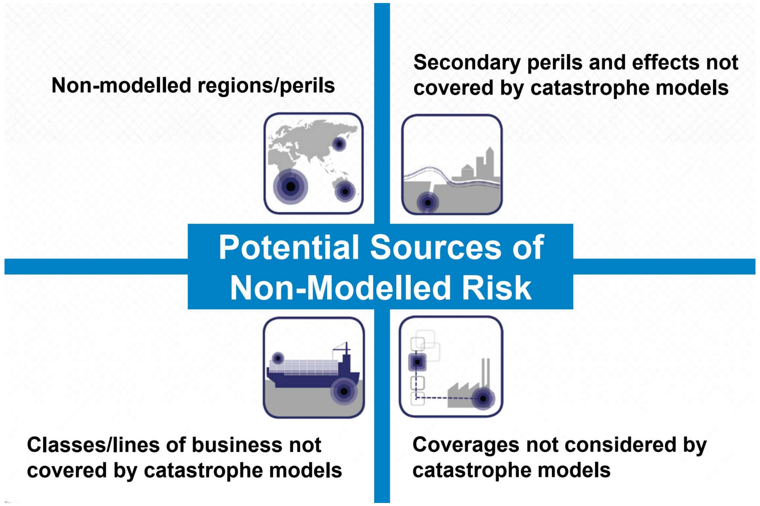
Understanding completeness of LCM5 perils, and LCM5 risk captured outside of external models

Minimum Standard EM 1.2.6: Managing agents shall ensure that the parameterisation of catastrophe risk in the internal model is materially complete

- New model completeness return has been published by Exposure Management and is due on the 18th of June
- Return now focusses on ALL LCM 5 perils – rest of world will follow in 2022 (2020 only US flood and wildfire)

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"



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# 2. Non-modelled natural catastrophes

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

**1. Syndicate can demonstrate that their LCM5 submission is 'complete'**

- No further action required
- No impact on syndicate capital
- Central NMR load no longer required in respect of syndicate's contribution to LCM5

**2. Syndicate unable to demonstrate that LCM5 data is complete, but able to show that missing elements are adequately represented elsewhere (and correlated with LCM5)**

- 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 LCM5 data 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/how much of the NMR elements are deemed 'missing'
- Model Completeness loading established by calculating impact of the uplift on LCM5 1:200 FNL - this increase to be capitalised at standard CRA rate

**4. Syndicate chooses not to participate in 2021 Model Completeness process**

- 10% uplift applied to syndicate's LCM5 data
- Model Completeness loading established by calculating impact of the uplift on LCM5 1:200 FNL - this increase to be capitalised at standard CRA rate

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# 3. COVID-19 ongoing monitoring

MRC will continue to monitor syndicate COVID-19 model allowances

- COVID testing as BAU and catching up on de-prioritised/delayed work
- Leverage bespoke testing frameworks that were established last year

At a minimum, the validation report should comment on:

- The latest view of the PML, how this has changed and whether it makes sufficient allowance for reinsurance exhaustion, further reserve deteriorations and emerging losses from further lockdowns and test cases. Validation should review the extent to which risk in the PML is captured in the capital model.
- Appropriateness of COVID model changes and any being unwound. There should be justification for removing adjustments and explanation for how model continues to capture pandemic uncertainty.
- As government financial support eases the level of economic uncertainty changes and this should be appropriately reflected in the relationship between market risk and insurance risk
- Reinsurance dispute risk for COVID claims
- Appropriateness of the ESG used and adjustments made to align the economic view to an 'in-house' view
- The focus area return for the 2022 YoA

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# 4. Claims inflation modelling

## Lloyd's is growing in long-tailed lines and new claim trends emerging

Lloyd's will carry out a thematic review with a best practice report to be published in July about claims inflation modelling. Claims inflation is becoming a more important focus for the market with emerging trends such as social inflation and growth in long-tailed classes. Capital review follows the Syndicate Reserving Casualty market study from last year.

We expect validation to assess inflation modelling and challenge the allowances made in the model. This should consider, but not be limited to:

- Use of implicit and explicit drivers
- Impact of inflation on the dependency between years and between classes
- Inflation as a systemic driver in the tail across years and classes of business
- Quantification of implicit inflationary allowances in the model, as these should be known and validated
- Extent of inflation modelled for economically exposed classes of business and the link between market risk and insurance risks
- Inflation model limitations and plans to remediate these.

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# 4. Claims inflation modelling

## A reminder of the capital guidance on inflation modelling

1. Best estimate liabilities should include an allowance for inflation and may include an allowance to account for any emerging inflationary trends. Inflation that is higher than the amount assumed in the best estimate needs to be captured as part of insurance risk.
2. Documentation should be clear about how uncertainty in pure inflation has been captured, how additional inflation has been captured and how other claim trends have been captured.
3. Syndicates should consider the potential impact from inflation or other common trend on liabilities to occur across multiple classes and years of account, particularly in stressed scenarios. At a minimum, the method selected to capture this dependency, the material expert judgments and assumptions, and the resulting impact on capital should be documented.
4. If inflation related dependency is not modelled explicitly there should be appropriate justification for this approach.
5. If inflation is captured by an uplift to volatility, the syndicate should explicitly state the size of uplift, run a sensitivity test excluding the effect, and validate the impact.
6. The internal model should include an inflation risk driver to capture the relationship between insurance risk and market risk for financial classes. If losses are linked to the inflation series from an ESG, then an inflation risk driver is considered to be modelled. In this case the syndicate should assess whether the strength of this relationship sufficiently captures the actual strength of relationship, especially in the tail and if not consider including an additional inflation driver.

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# 5. Non-natural catastrophe accumulation risk

## Lloyd's is enhancing oversight of non-natural catastrophe risk

An event is considered to be a non-natural catastrophe if it is not the result of the natural processes of the earth

Exposure to non-natural catastrophes is increasing within the Lloyd's market and wider insurance industry. Compared to natural catastrophes, the risks are less well understood and continue to evolve.

| 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 |

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# 5. Non-natural catastrophe accumulation risk

Allowance for non-nat cat risk should be quantifiable in the model

### Strengthening of oversight in this area for 2021/2022

- Improving data standards for exposure management of liability and cyber risk
- Enhanced Exposure Management requirements
- Additional RDS (3 new cyber scenarios, 6 liability scenarios)
- Thematic review into cyber and liability was published by EM in January 2021
- Thematic review into non-natural catastrophe risk planned by syndicate capital in 2022
- New outputs required in the LCR forms (expected for 2023 YoA) to quantify materiality of non-natural catastrophe risk
- Focus area return for the 2022 YoA to collect some initial data

### We ask that validators consider the following for the 2022 YoA exercise

- Current treatment of non-nat cat risk in the internal model and whether this is commensurate with the risk
- Whether non-nat cat risk can be explicitly quantified, if it is an important risk driver
- Allowance for lack of data and knowledge of the underlying risk
- Allowance for emerging risks, such as increasing sophistication of cyber attacks and unknown perils/ENIDs
- Contribution to the tail of insurance risk
- Dependency with other risk types
- Whether the validation plan includes sufficient explicit testing of non-nat cats.

# Summary

## Focus on the big questions and add value

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# 2021 timeline

## Q1

- Capital briefing (9 February)
- IMO returns (15 February)
- Q1 2021 model loss ratio template. Sections A & B, all syndicates (16 February). Targeted syndicates, sections C & D (24 February)
- Validation critical feedback responses (19 February)
- Deferred Major Model Changes (plus greater volume RITCs than prior years)
- March reassessment templates and where necessary, MY CIL LCR resubmissions and March Focus Areas template (1 March)
- Fast track requirements reviewed

## Q2

- Making It Happen and Solvency II compliance reviews (data received, ongoing)
- Communication of syndicates selected for deep dives/Fast Track (linked to MMCs where possible)
- Validation briefing (11 May)
- Capital Market messages (10th of June)
- Exposure management model completeness return (18th of June)
- Claims inflation study (data received 30th of April, ongoing, report to be published in July)
- LCR instructions and focus areas published
- Assessment of Reserving Thematic tests of uncertainty, update on timelines and market engagement

## Q3

- NED Forum (TBC)
- LCR submissions begin – Fast Track in place
- Follow up interviews and final results of EM model completeness return
- Exposure management return on 3 new Cyber scenarios added to formal RDS framework at RDL (in-force 1/7/2020 exposures) and collected in Form 452 of 2022 SBF (projected exposures)

# Time for questions

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