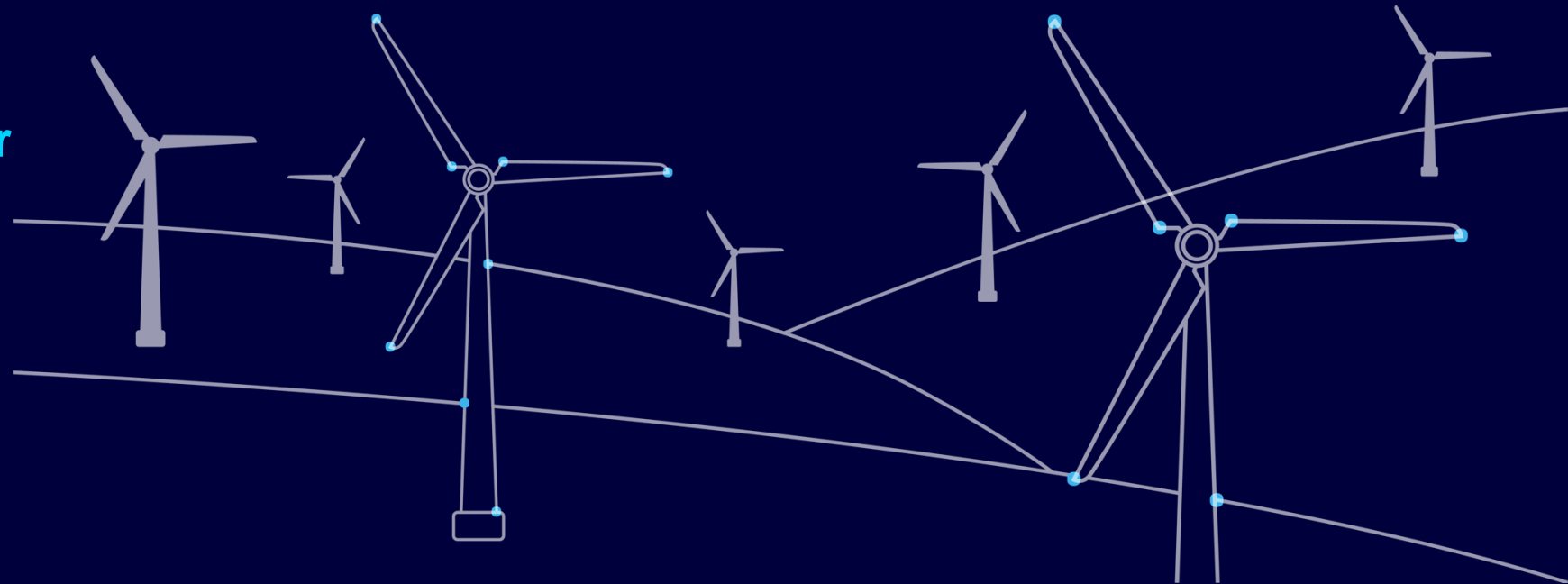




ORX Analytics & Scenario Forum 2021

Wednesday 22nd and Thursday 23rd September 2021

Leveraging the power of over
100 financial organisations
to energise your operational
risk management



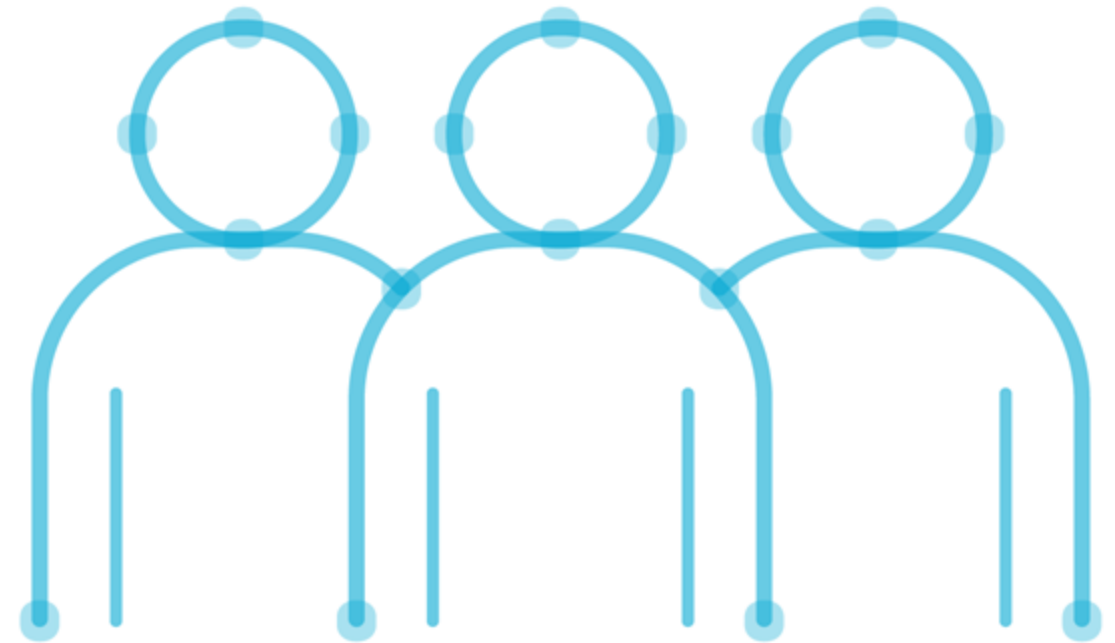
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Welcome and Introductions



Meet the ORX team



Luke Carrivick
Director of Research
and Information
ORX



Steve Bishop
Head of Risk
Management
Programmes
& Insurance
ORX



Giuseppe Aloï
Scenarios Senior
Manager
ORX

How to make the most of the virtual session



Find a quiet place to dial in from



Wear a headset for best sound



Turn on video when talking
(if the network quality allows)



Mute your mic when not speaking



Switch off from email and phones



Use “Raise Hand” button to ask a question



Use Chat function to ask a question



Email Robert.Reay-Jones@orx.org to ask questions



When dialling in, digit *6 to unmute



If you experience any technology issue,
please contact support@orx.org

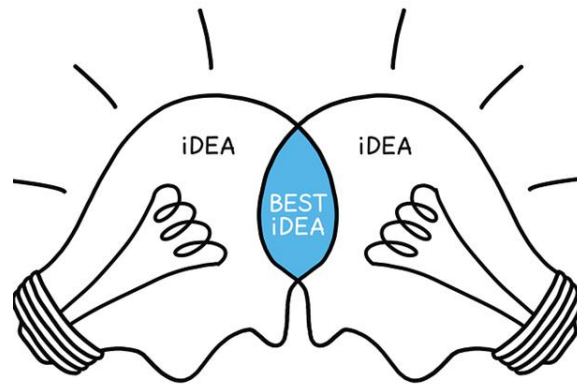
How to interact during the
forum

Format

- Topics will be discussed in panel, breakout or plenary sessions
- ORX will introduce and facilitate the sessions
- Timings are flexible
- Feel free to speak after someone else has finished, alternatively use the “raise your hand” functionality

Breathing space

- There is a 10-minute guided health and wellness session following by a short break in the agenda.



Culture

- Informal and very interactive
- Acceptance that no one has all the answers
- Share your experience and knowledge
- Ask questions & be honest
- Hopefully, we can all learn from the experience
- CHATHAM HOUSE RULES apply

**Please come prepared to share your views and perspectives.
We will be encouraging everyone to participate actively in the discussions.**



Welcome to the Analytics & Scenarios Forum

Louise Cordwell, **Lloyds Banking Group**
Chair of ORX Scenario Working Group



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Website: www.orx.org

Twitter: [ORX association](#)



Agenda and Timings – Wednesday 22nd September

O.R.X

14:00 – 14:10	Welcome to Analytics & Scenarios Forum Day 1	<i>Louise Cordwell, LBG Steve Bishop, ORX</i>
14:10 – 15:00	Synergies in operational risk scenario analysis and wider risk programmes	<i>Ian Philpot, Bank of America Susan Adibi, Credit Suisse George Gibbs, Deutsche Bank Paul Doran, Morgan Stanley David Hefti, Northern Trust</i>
15:00 – 15:40	Incorporating controls into the scenario development process to add value to risk management	<i>Ayala Feldman, CIBC Anna Bridget Littler, Natwest Anaïs Dangel-Jacquot, UBS Allan McMillan, Virgin Money</i>
15:40 – 15:50	Health and wellness guided session	<i>Cathryn Bishop</i>
15:50 – 16:00	Short break	
16:00 – 16:10	Validating scenario portfolio coverage using the ORX Scenario Library	<i>Giuseppe Aloï, ORX</i>
16:10 – 16:50	How using triggers can streamline the scenario review process	<i>Amanda Du Rand, First Rand Sunil Shah, HSBC Louise Cordwell, LBG Marie Malmberg, Nordea</i>
16:50 – 17:00	Wrap up and closing remarks	<i>Giuseppe Aloï, Steve Bishop, Luke Carrivick, ORX</i>

Agenda and Timings – Thursday 23rd September



14:00 – 14:05	Welcome to Analytics & Scenarios Forum Day 2	<i>Giuseppe Aloï, Luke Carrivick, ORX</i>
14:05 – 14:10	ORX information and activities on climate risk	<i>Luke Carrivick, ORX</i>
14:10 – 14:40	Climate stress of operational risk scenarios	<i>Patrick Naim, Elseware</i>
14:40 – 15:00	Climate Change: How behavioural change and economic consequences may impact operational risk	<i>Michael Grimwade, ICBC Standard</i>
15:00 – 15:40	Climate change: How to approach transition and reputational risk in stress testing	<i>Patrick Naim, Elseware Verena Stefan, Erste Group Michael Grimwade, ICBC Standard</i>
15:40 – 15:50	Health and wellness guided session	<i>Cathryn Bishop</i>
15:50 – 16:00	Short break	
16:00 – 16:50	What is the future for operational risk modelling?	<i>Colm Comeford, Bank of Ireland Eric Cope, Credit Suisse Brian Jaggard, HSBC Luke Carrivick, ORX Enrique Muñoz Garcia, Santander</i>
16:50 – 17:00	Close of Analytics & Scenario Forum	<i>Giuseppe Aloï, Steve Bishop, Luke Carrivick, ORX</i>



Synergies in operational risk scenario analysis and wider risk programmes

14:10 – 15:00

Panel discussion

Ian Philpot, **Bank of America**

Susan Adibi, **Credit Suisse**

George Gibbs, **Deutsche Bank**

Paul Doran, **Morgan Stanley**

David Hefti, **Northern Trust**



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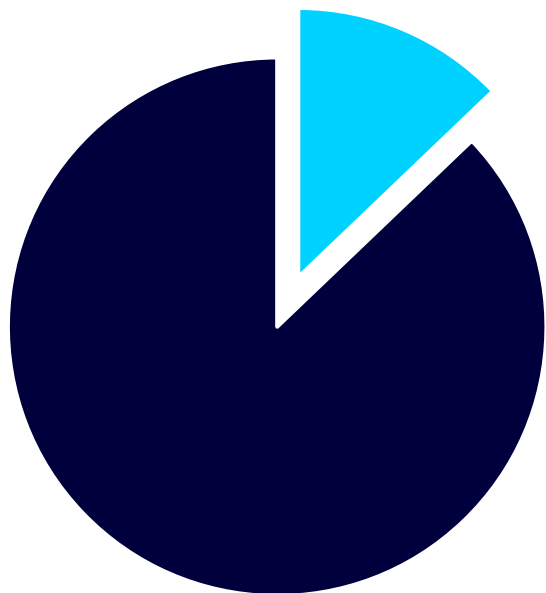
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Synergies in operational risk scenario analysis and wider risk programmes

In almost nine institutions out of 10, the operational risk scenario programme is aligned with other risk programmes

Source: [Scenario Practice Benchmark report 2021](#)



87% of firms participating in the study stated that they use operational risk scenarios for more than one purpose.

“While the primary use of scenario analysis remains risk measurement, the study shows that scenario outputs can provide greater value when also used for risk management purposes by increasing awareness of material risks and promoting understanding of gaps and weaknesses in controls.

In addition, firms use scenarios for a wider range of risk management purposes, such as operational resilience.”

Source: [Scenario Practice Benchmark report 2021](#)

The priority for most institutions is to evolve their scenario framework, to make it more agile and efficient. It is also evident that some firms have started to pivot away from risk measurement and are beginning to use scenarios in their wider risk management framework (e.g., risk appetite, control environment test etc.).

Source: [Scenario Operational risk scenarios white paper 2021](#)

Synergies in operational risk scenario analysis and wider risk programmes

Firms are expanding the use of scenarios beyond risk measurement:



Themes for discussion

- Does your firm use scenarios for more than one purpose? If so, what are these other purposes/programmes?
- Do you use your scenario framework/methodology for other purposes OR do you leverage results from your operational risk scenario programme in multiple risk exercises?
- Did you have to adapt or change anything in your scenario framework in order to achieve this?
- What was the most challenging aspect?



Incorporating controls into the scenario development process to add value to risk management

15:00 – 15:40

Plenary session introduced by:

Ayala Feldman, **CIBC**

Anna Bridget Littler, **Natwest**

Anaïs Dangel-Jacquot, **UBS**

Allan McMillan, **Virgin Money**



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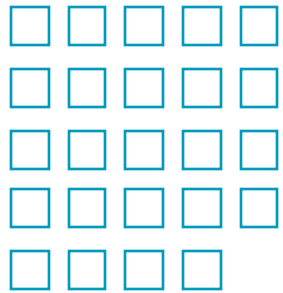
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Incorporating controls into the scenario development process to add value to risk management

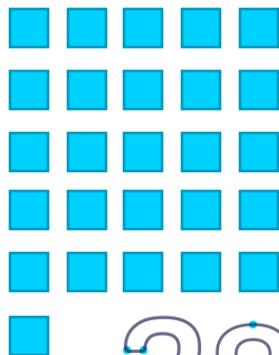
Over **two thirds** of surveyed organisations **identify risk management actions** as part of scenario assessment

Source: [Scenario Practice Benchmark report 2021](#)



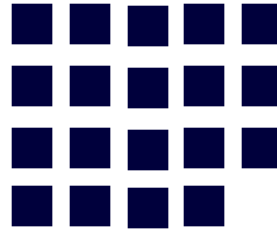
35%

The scope of the scenario assessment covers direct impacts only (e.g., customer compensation, legal costs)



38%

The scope of the scenario assessment covers direct and indirect impacts such as customers' and shareholders' sentiment and some **risk management actions are identified**



27%

The scope of the scenario assessment identifies all impacts (direct and indirect) and includes the development of **risk management response plans** (playbooks) and/or uplift actions to **enhance the control environment**.

Themes for discussion

- How are controls included in scenario assessment?
- Are controls assumed to fail in order for the scenario to materialise? Is the latter realistic or can some level of control effectiveness be considered?
- Do you link the scenario to actual controls used for RCSA in their risk system?
- How granular is the description of control failures (e.g. general or reference to specific / individual control)?
- How are risk management actions followed up once they are identified in scenario workshops?

Incorporating controls into the scenario development process to add value to risk management

ORX's 2017 study on industry practices and developments in control frameworks highlighted internal and regulatory pressure to enhance controls and control management, with a need over time to develop common terminology and practices.

The acceleration of digitalisation in the financial services sphere has resulted in additional challenges, requiring further enhancement of control practices.

Partnering with [McKinsey&Co](#), we aim to create an **ORX Reference Control Library**.

This will be developed using a similar member data-driven method to the ORX Reference Taxonomy. Data will be used to determine a common industry view of controls.

The outputs should allow members to benchmark controls, help develop your thinking and practice, and potentially even integrate the results into your own framework and systems.



Phase 1:

Data collection and analysis

Jun-Aug 2021



Phase 2:

Review with Member advisory panel
& Roundtables

Sep – Oct 2021



Phase 3:

Control library and practice report

Nov – Jan 2022



Health and wellness guided session

15:40 – 15:50

Cathryn Bishop - Sports & Remedial Massage Therapist



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Short break
See you in 10 minutes!

If you need to, please remember to complete the feedback form:

<https://orx.typeform.com/to/uN1q7ljo>



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Validating scenario portfolio coverage using the ORX Scenarios Library

16:00 – 16:10

*Giuseppe Aloï, **ORX***



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Website: www.orx.org

Twitter: [ORX association](#)

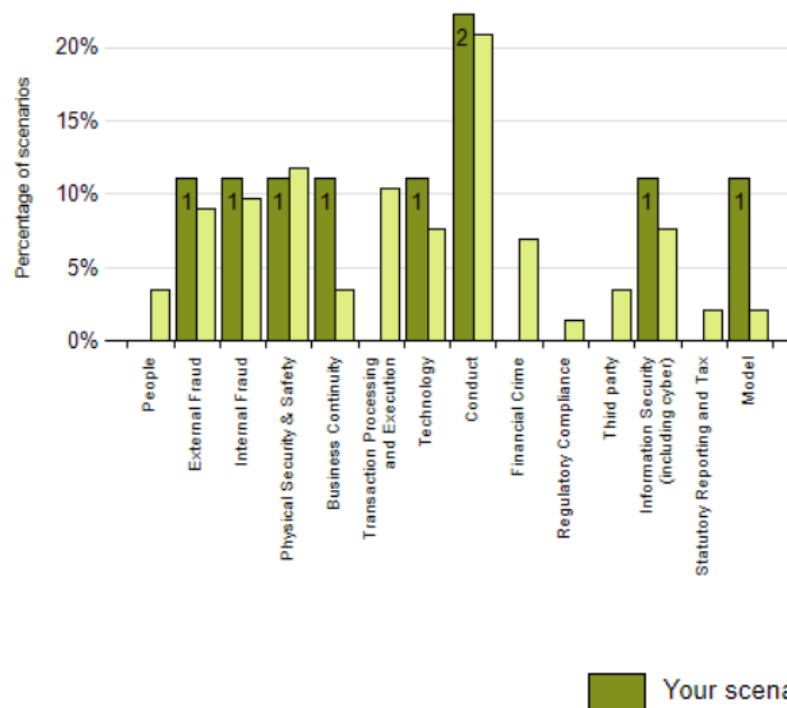


Validating scenario portfolio coverage using the ORX Scenarios Library

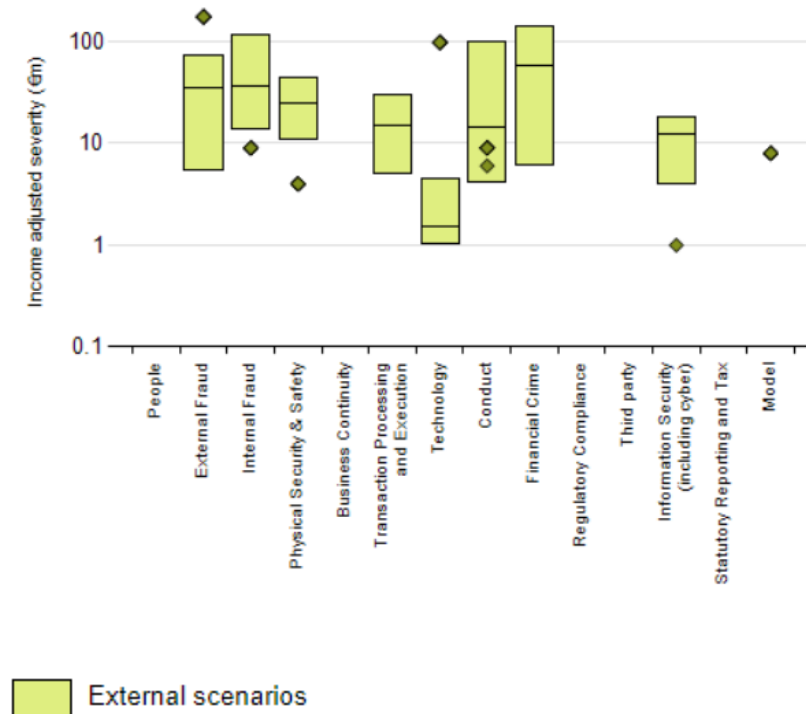
ORX is now revamping the Scenarios Library with the aim of providing its subscribers with an enhanced benchmarking tool.

From 2022, scenario subscribers will be able to compare their scenario portfolios against other peers (similar firms in terms of business lines, region or size).

Proportion of scenarios by taxonomy type



Scenario severity distribution



NB: Charts in this page are produced using **synthetic data**.
Scenario subscribers can access real data [Scenarios Portfolio Benchmark](#) report in Insight.

Validating scenario portfolio coverage using the ORX Scenarios Library

O.R.X

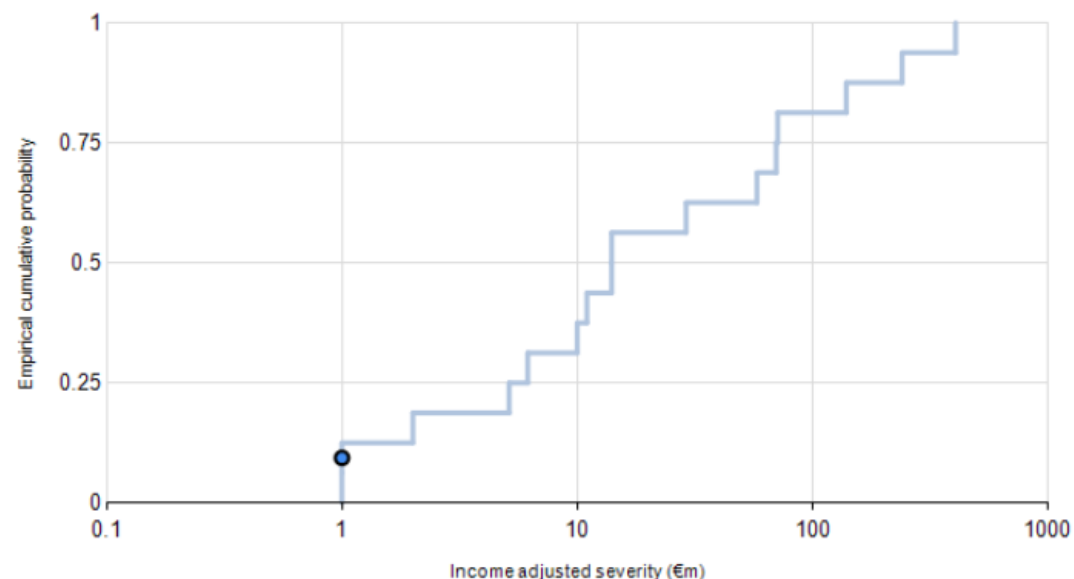
Subscribers will be able to compare:

- Assumptions (risk drivers)
- Cost components (direct financial impacts)
- Severity amounts
- Likelihood

NB: Charts in this page are produced using **synthetic data**.

Scenario subscribers can access real data the [Scenarios Focus](#) report in Insight.

Income adjusted severity



$$\text{Income adjusted severity (€m)} = \text{Scenario severity} \times \left(\frac{\text{Your total corporate exposure}}{\text{Total corporate exposure of member owning the scenario}} \right)$$

Key measures from the income adjusted severity dataset are shown below.

Estimated minimum severity	Estimated mean (average) severity	Estimated median severity	Estimated maximum severity	Benchmarked scenario severity
€1.0m	€67.3m	€14.0m	€405.0m	€1.0m



How using triggers can streamline the scenario review process

16:10 – 16:50

Panel discussion

Amanda Du Rand, **First Rand**

Sunil Shah, **HSBC**

Louise Cordwell, **Lloyds Banking Group**

Marie Malmberg, **Nordea**



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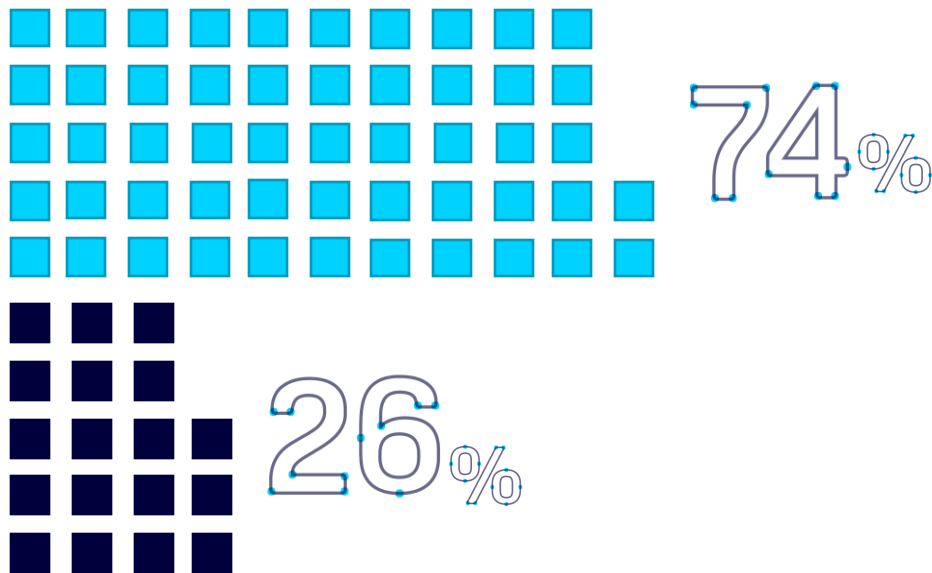
Twitter: [ORX_association](https://twitter.com/ORX_association)



How using triggers can streamline the scenario review process

O.R.X

The use of triggers is effectively implemented in over one quarter of institutions surveyed



Themes for discussion

- How are triggers used? Are they used to select scenarios for review during the annual campaign or to conduct ad hoc reviews outside the campaign?
- When are triggers defined in the process and who identifies them?
- What are the main types of triggers?
- Is an automated process established so that triggers launch alerts?
- How do you ensure that triggers remain relevant and are followed up?

Source: [Scenario Practice Benchmark report 2021](#)

Risk Indicator and Culture Pilot Study

ORX published the [Risk Indicator and Culture Pilot Study](#) results with the objective to:

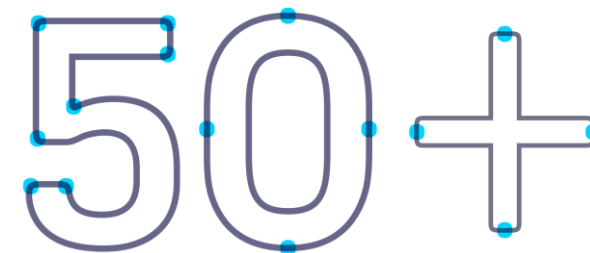
- support benchmarking of current practices, and
- further enhance the use of risk indicators to monitor material risks and/or key controls.

Study included:

1. **Study Report** – key findings from survey and roundtable discussion groups
2. The sharing of over **360 financial crime** risk indicators and **230 risk culture indicators**
3. **Risk indicator guidance** explaining key steps in developing risk indicators
4. The development of a risk indicator maturity matrix

Feedback from participants:

- ✓ Study report and discussion groups were very useful in understanding current practices
- ✓ Financial Crime and Risk Culture Indicators useful to help identify potential for enhancements
- ✓ A majority want further practice benchmarking, and sharing of risk indicators would be valuable

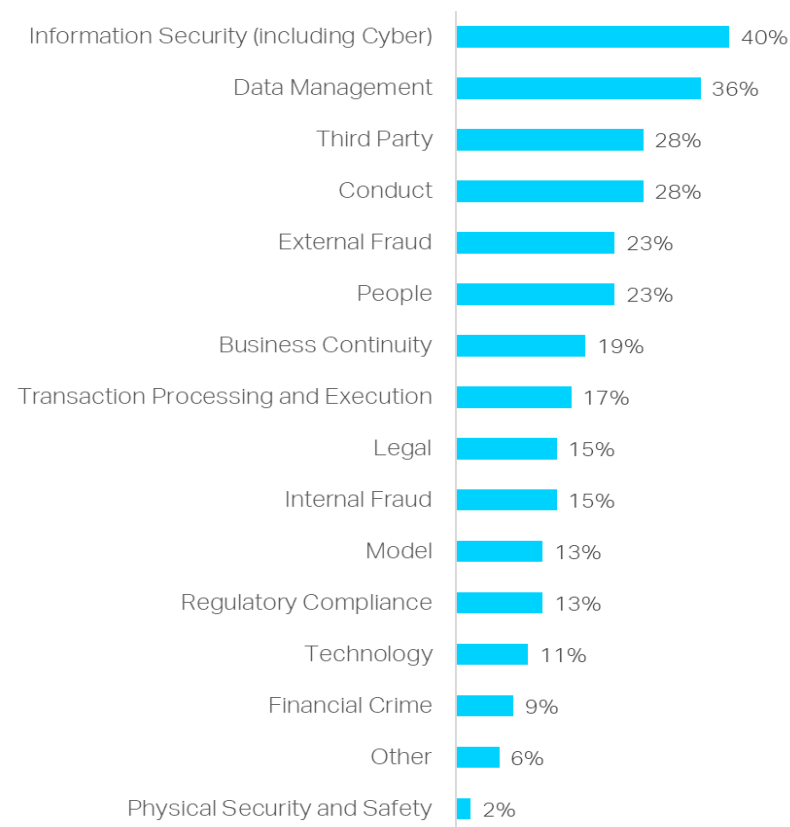


Financial Institutions took part to the study

Risk Indicator and Culture Pilot Study



Main risks that participants would like to prioritise for further ORX benchmarking



Next steps:

- 77% of institutions are planning to do more to enhance their risk indicators
- A majority of institutions wanted ORX to do further benchmarking activities for RIs
- ORX would like to create a library of risk indicators ideally for all Risk Types. This would help institutions to identify leading/useful lagging indicators
- Other planned external benchmarking activity to:
 - ✓ Understand where their RI practice can be enhanced using a RI Maturity Matrix
 - ✓ Provide an opportunity to learn from the successes of peers through further discussion groups



Wrap up and closing remarks

16:50 – 17:00

*Giuseppe Aloï, Steve Bishop, Luke Carrivick, **ORX***



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Wrap up and closing remarks



Thank you to everybody for your time and contribution to the event!



We will be asking for feedback – it would be much appreciated if you can take the time to provide this.

<https://orx.typeform.com/to/uN1q7ljo>



ORX will provide a summary of the key points discussed during the forum.



Thank you. Close of Day-1

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Commercial in Confidence

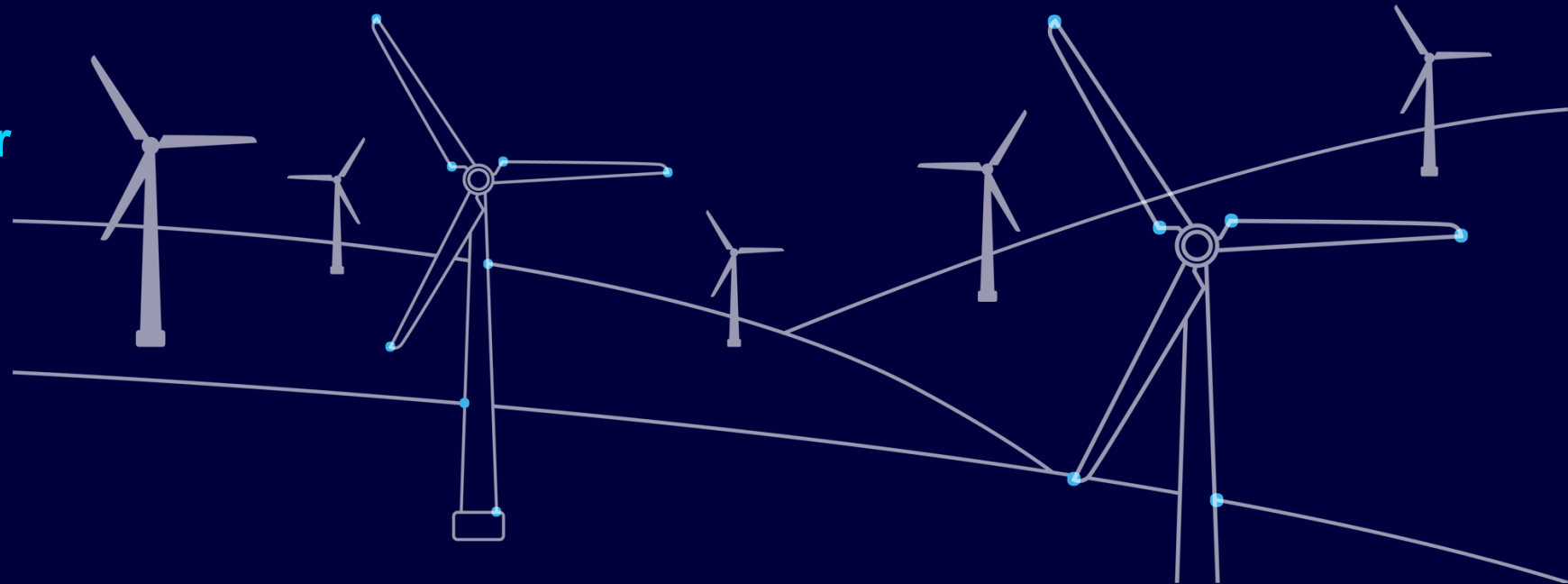
**Leveraging the power of
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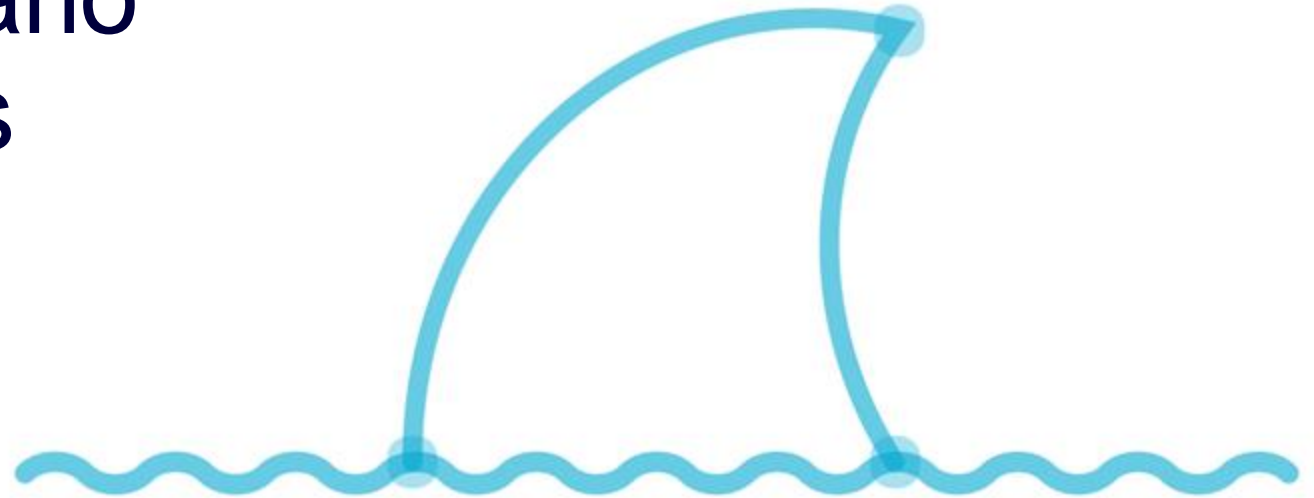
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Leading practices in operational risk scenario analysis and analytics Welcome to Day 2

Steve Bishop, ORX



Meet the ORX team



Luke Carrivick
Director of Research
and Information
ORX



Steve Bishop
Head of Risk
Information and
Insurance
ORX



Giuseppe Aloï
Scenarios Senior
Manager
ORX

How to make the most of the virtual session



Find a quiet place to dial in from



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If you experience any technology issue, please contact support@orx.org

How to interact during the
forum

Timings – Thursday 23rd September



14:00 – 14:05 **Welcome to Analytics & Scenarios Forum Day 2**

*Steve Bishop, **ORX***

14:05 – 14:10 **ORX information and activities on climate risk**

*Luke Carrivick, **ORX***

14:10 – 14:40 **Climate stress of operational risk scenarios**

*Patrick Naim, **Elseware***

14:40 – 15:00 **Climate Change: How behavioural change and economic consequences may impact operational risk**

*Michael Grimwade, **ICBC Standard***

15:00 – 15:40 **Climate change: How to approach transition and reputational risk in stress testing**

*Patrick Naim, **Elseware**
Verena Stefan, **Erste Group**
Michael Grimwade, **ICBC Standard***

15:40 – 15:50 **Health and wellness guided session**

Cathryn Bishop

15:50 – 16:00 **Short break**

16:00 – 16:50 **What is the future for operational risk modelling?**

*Colm Comeford, **Bank of Ireland**
Eric Cope, **Credit Suisse**
Brian Jaggar, **HSBC**
Luke Carrivick, **ORX**
Enrique Muñoz Garcia, **Santander***

16:50 – 17:00 **Close of Analytics & Scenario Forum**

*Giuseppe Aloj, Steve Bishop, Luke Carrivick, **ORX***



ORX information and activities on climate risk

14:05 – 14:10

*Luke Carrivick, **ORX***



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Discussion Groups

- During the first half of 2020, we held a series of regional calls to discuss the impact of climate change on operational risk [link](#).
- We facilitated conversations with ORX members based in [Canada](#), [South Africa](#), [Australia](#), and the [UK](#).
- These sessions provided a platform to share views on the impact of climate change on operational risk and to identify common challenges and potential solutions.

Information

Some climate information exists across our Data, ORX News, Scenarios Library and Horizon scanning – but this is limited.

Future focus

- Support climate risk within the context of specific regulatory requirements (e.g., ECB 2022)
- Expand the scope of ORX News to include relevant events
- Consider any definitional work with the DWG

Climate change discussion group

Members can find more information on the [ORX website](#).



Discussion groups - The Risks

- Globally - high levels of alignment on the scope of the problem and the risks
- Very familiar set of Physical and Transition Risks (model risk is more unusual)
- Challenge here is the different rates at which the risk profiles are changing, and the timeframe over which events will manifest

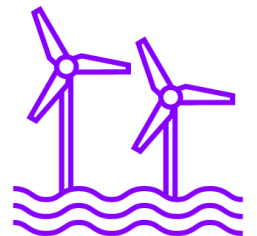
Physical

- Assets: Events resulting in increased damage to physical assets, buildings and other premises.
- Supply chain and external infrastructure: Events causing disruption to the supply chain and external infrastructure failure
- Internal Infrastructure: Infrastructure and IT failure



Transition

- Conduct and legal: Greenwashing, blue-lining, litigation
- Compliance: Increase in policy and regulation, changes in technological standards.
- Reputational: Changes in customer and stakeholder behaviour and expectations.
- *Model Risk: Suitability of current models*



Discussion groups - Key observations and challenges

Drivers

- Climate is a top concern
- Focus on regulatory requirements and developments
- Other stakeholder pressures

Approach

- Integrate climate change management across risk types
- Often specific working group or team

Measurement

- Scenario analysis
- Look to use other data (e.g. KRI) where possible

Time horizon

- Longer term horizon than other operational risks
- Significant variation in timeline by risk
- Is climate a cause or a risk – the scope of quantification?

Regulators

- Lack of guidance in some jurisdictions
- Hard to show you comply

Data

- Climate data is lacking and not granular enough – can be hard to differentiate change from natural variation
- Lack of historical event data, and challenge to identify the OR element of losses

Horizon Scanning - Climate as a top risk

- Climate risk was ranked 3rd in our [2021 emerging risk survey](#).
- Climate risk is viewed as a transversal risk that cuts across all areas of enterprise risk management.
- Poses a growing concern to the industry and continues to be monitored as an emerging risk – difficult to assess and yet to materialise.
- One of the big challenges around quantification is the variety of impacts, and the interdependency with other risks and external drivers.

	Transition risks	Physical risks
Risk types	<ul style="list-style-type: none"> Risks arising from actions taken to mitigate climate risk as the global economy transitions towards a low carbon future 	<ul style="list-style-type: none"> Risks arising from physical disruption, e.g. disruptive weather events and natural disaster
Primary impact dimensions	<ul style="list-style-type: none"> Reputational (but cuts across all) 	<ul style="list-style-type: none"> Operational and financial
Key emerging risk factors	<ul style="list-style-type: none"> Changing public sentiment Growing public and media scrutiny 	<ul style="list-style-type: none"> Operational resilience (including third party operational resilience) Physical security and safety and third party physical security and safety
Main risk theme interdependencies	<ul style="list-style-type: none"> Geopolitical risk Macroeconomic risk Regulatory change Model risk 	<ul style="list-style-type: none"> Systemic risk Third party arrangements Business continuity People risk
High degree of uncertainty and difficult to assess – emerging risk		

Where does ORX have Information on climate

Theme	Risk	ORX News	ORX Scenario Library	2021 Horizon
Physical	Assets	✓	✓	✓
	Supplier			✓
Transition	Macro-economic / strategic		✓	✓
	Regulatory / Compliance	Covered in media but no losses reported	✓	✓
	Reputational	✓		✓
	Conduct / Legal	✓		✓
Other	Model / Pricing			✓

- We tend to mirror the industry – so limited data is available
- Risks are articulated in horizon scanning surveys, but few examples (even within the scenario library)
- Plans to expand the scope of ORX News to include severe weather events, and infrastructure failures outside of financial services
- Some information relevant to transition risk are not events, so are not currently captured, e.g.:
 - ✓ Firms exiting carbon-intensive investment [BNP Paribas](#)
 - ✓ Move to invest more in projects that fight climate change [Goldman Sachs](#)
 - ✓ Some moves towards carbon divestment [Legal and General](#)
 - ✓ Reputational impact, activist pressure [Blackrock](#)

Example from ORX News

- Some examples of ORX News stories are presented based on Scenario Category = “Adverse Weather Events”

Story Reference Number	Headline	Country	Business line	Date first in media
8076	Floods damage up to IQD 12 billion of banknotes in Rafidain Bank vault	Iraq	Corporate Items	13-Nov-18
6908	Heavy flooding destroys 280 deposit boxes at Sparkasse Hildesheim Goslar Peine	Germany	Retail Banking	11-Aug-17
5901	ME Bank and others face ATM and card transaction problems after storms cause cloud server outage	Australia	Card Services	06-Jun-16
5731	Cyclone Winston causes Fiji Development Bank to lose FJD 5.4 million	Fiji	Commercial Banking	09-Mar-16
4495	Citibank and other banks see operations hit hard by Hurricane Sandy	United States	Corporate Items	30-Oct-12
2139	Capsugel settles insurance dispute with Allianz over USD 100 million Thailand flooding claim	United States	Liability	01-Mar-13
4163	AIG unit Lexington Insurance pays USD 1.6 million for failing to cover customer's Hurricane Sandy damage	United States	Liability	19-Sep-14
3869	DTCC attempts to recover 1.3 million physical bond and stock certificates	United States	Securities Clearing	14-Nov-12



Climate change: estimating the firm's exposure to physical risks

14:10 – 14:40

*Patrick Naim, **Elseware***



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Twitter: [ORX association](#)





Climate Change: How behavioural change and economic consequences may impact operational risk

14:40 – 15:00

*Michael Grimwade, **ICBC Standard***



LinkedIn: [ORX Association](#)

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Twitter: [ORX association](#)





Climate change panel discussion: how to approach transition and reputational risk in stress testing

15:00 – 15:40

Panel discussion

*Laurent Condamin, **Elseware***

*Verena Stefan, **Erste Group***

*Michael Grimwade, **ICBC Standard***



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Climate change panel discussion: how to approach transition and reputational risk in stress testing

Introduction

- Climate is likely to form a significant part of the 2022 ECB stress test, in which the identification of historical climate losses (physical, conduct and reputational) and the projection of future events are expected to be a key focus.
- This problem presents a variety of new challenges for operational risk, including data scarcity and the time frame over which climate change occurs.
- In this session, the discussion will focus on how institutions are responding to the challenge of understanding the relationship between climate and operational risk

Main challenges



Data Scarcity



Climate change time frame

Climate change panel discussion: how to approach transition and reputational risk in stress testing

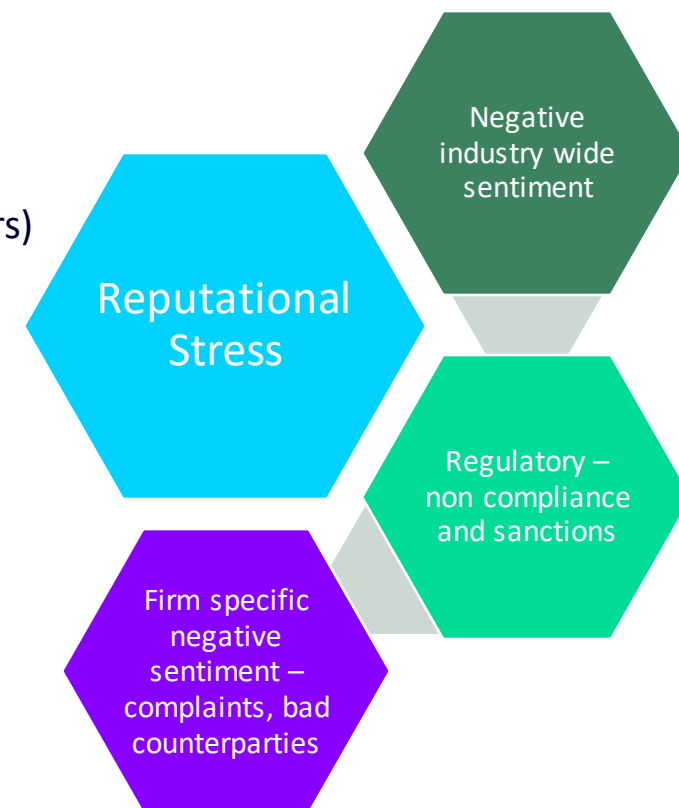
- The ECB will conduct a climate stress-test of individual banks in 2022 – here is **my best guess at what will be required**
- Contains the concept of an orderly and disorderly transition

What is required

- In line with EBA stress test, operational risk will need to submit a mixture of historical data (5 years) reporting and forecasting of expected future events (3 years)
- Even if there are no historical forecasts are still required

What is the focus

- Operational and Reputational Risks treated separately
- Operational Risks: **Physical** - broadly speaking “damage to physical assets” + “business disruption and systems failure”, and **Conduct** (subset of CPBP)
- Reputational Risks: Banks need to consider reputational risks triggered in a variety of ways
- Required to directly translate a reputational event into a financial loss – e.g. lower volume of new business, loss of market share
- There is also likely to be a survey to capture the level of maturity and integration of climate risk frameworks



Climate change panel discussion: how to approach transition and reputational risk in stress testing

Themes for discussion

1. The need for good data relating to Climate risk
 - How much data is there? What are the challenges with identifying it?
 - What are the alternatives - are there proxies?
2. Forecasting and modelling
 - How do you forecast and make decisions with limited data?
 - What will be different about forecasting losses due to transitional and reputational risks, in comparison to physical ones?
 - What are the biggest challenges you foresee?
3. Regulatory treatment
 - Where do you expect climate to sit within the regulatory framework?
 - Should be get used to doing climate stress testing?





Top 5 tips on Staying Healthy

15:40 – 15:50

Cathryn Bishop - Sports & Remedial Massage Therapist



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Short break
See you in 10 minutes!

If you need to leave, please remember to complete the feedback form:

<https://orx.typeform.com/to/uN1q7ljo>



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What is the future of operational risk modelling?

16:00 – 16:50

Introductions and breakout

*Colm Comeford, **Bank of Ireland***

*Eric Cope, **Credit Suisse***

*Brian Jaggar, **HSBC***

*Luke Carrivick, **ORX***

*Enrique Muñoz Garcia, **Santander***



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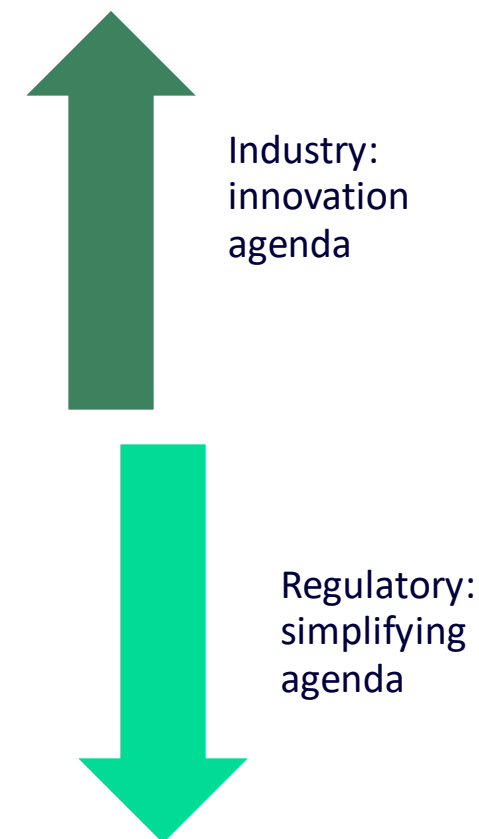
Twitter: [ORX association](#)



What is the future of operational risk modelling?

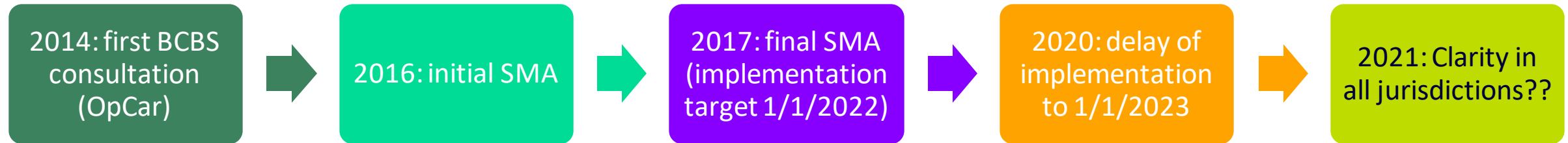
Introduction

- The **simplification** of Pillar I regulatory capital through the introduction of the SMA – the removal of a model and replacement by a formula – is likely to impact approaches to Pillar II and economic capital modelling.
- However – at the same time (as we saw above), some are taking steps to push the boundaries of operational risk measurement, innovate and adopt more sophisticated approaches.
- ORX will briefly present a few observations on what we at ORX see before handing over to our panellists
- They will give their perspectives on what the future holds, before opening the conversation out to provide an opportunity for participants to share how they see the future of operational risk modelling.



What is the future of operational risk modelling?

Pillar I Regulatory capital



What is *probably* coming

- Expectation is that within the next month regulators (on both sides of the Atlantic) will publish their implementation guidance on the SMA
- High chance that (in Europe at least) the ILM is set to 1
- However, loss data quality will be a concern as it will remain as a regulatory lever to increase capital. For this reason we will be running a study in 2022 on how to demonstrate loss data quality.

With clarity approaching we thought it would be a good opportunity to discuss where people are planning on taking their models. We do expect this to be mixed, the starting point is different - for some jurisdictions (e.g. Canada) have already moved to standardised approaches, and others (e.g. UK) in the end there were no AMA banks.

What is the future of operational risk modelling?

O.R.X

Below are some observations taken from interactions with our 103 banking and insurance members on broad modelling themes.

- High interest in capital models
 - Fundamentally it is still very useful to understand how much you could lose
 - 55 participants in our [capital benchmarking](#) study
 - We plan to run a model methodology study in 2022 – focused on more about the philosophy of how the models are being built and the design decisions made
- Innovation in models
 - Greater flexibility and innovation – shackles of AMA are off and people are taking advantage
 - Use of wider set of data – interest in using other inputs (e.g. KRI, RCSA data)
 - Interest in factor models (see [ORX study](#))
- Models that align better with risk management
 - Expectation that the modelling units (e.g. units of measure) have a correspondence to risk management
 - Focus on risk specific measurement from e.g. from regulators (e.g. BCBS measurement of [crypto asset risk](#)), or within the [ORX Cyber Community](#)
 - Increase in use of scenarios (we see this in [CCAR](#) and other stress tests)

Interest

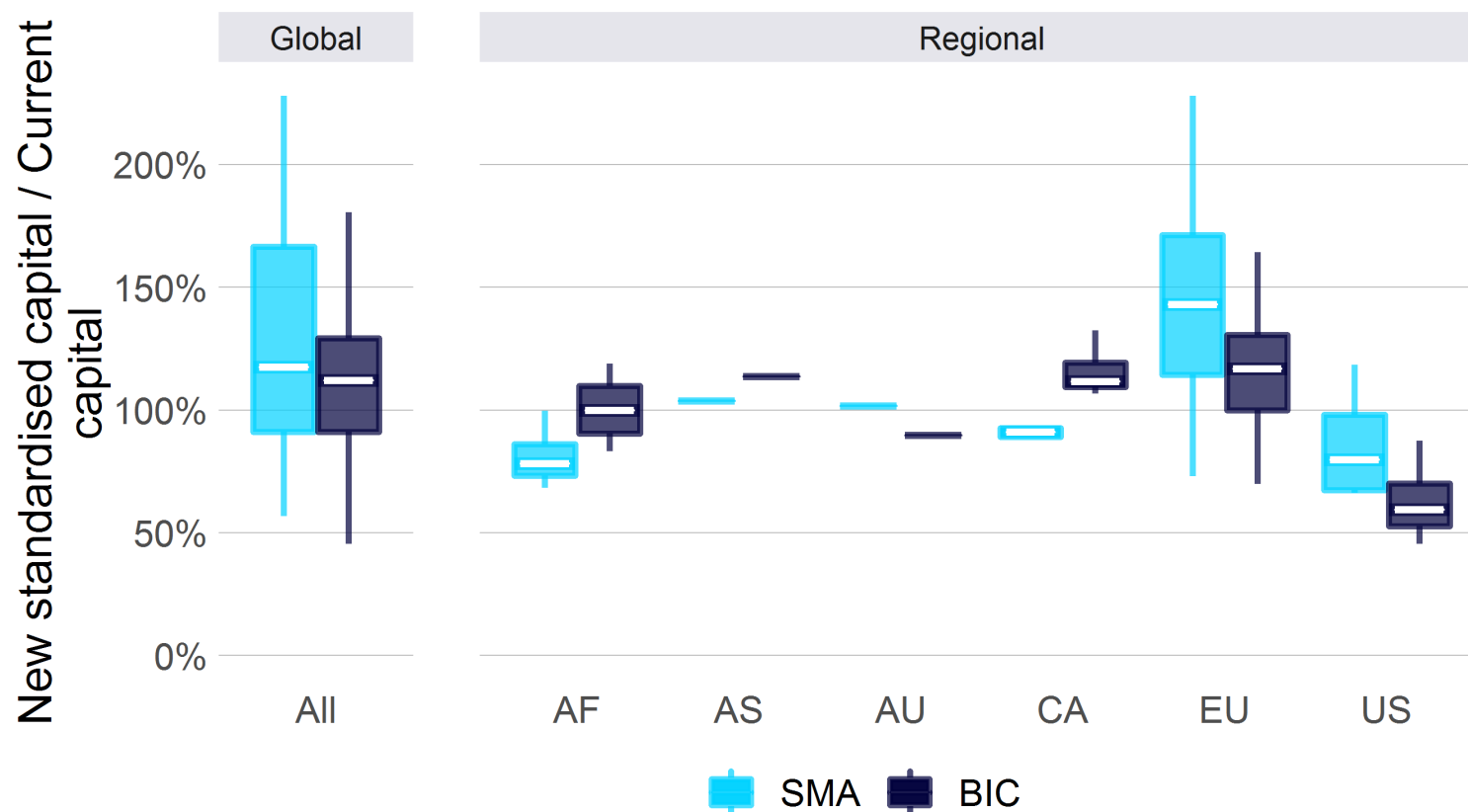
Innovation

Risk
Management
Use

What is the future of operational risk modelling?

Where is the interest in modelling and capital coming from?

- The chart is taken from our 2021 Capital Benchmark (to be published in a few weeks time).
- It shows the a comparison of Pillar I under the SMA in comparison to current capital
- Why is this relevant – I think it shows that there is an important role for models for understanding what capital levels should be, and how much operational risk we are exposed to...



What is the future of operational risk modelling?

Themes for discussion

1. Where do you see use of your model going post AMA?
 - Within other regulatory exercises - stress testing?
 - For economic capital, or supporting risk management decisions?
2. With AMA constraints removed what technical innovations are you making – or thinking of making in the near future?
 - Are you considering broadening the range of input data?
 - Have you reassessed assumptions about how the model is constructed?
3. What is the end game?
 - In a perfect world where would your model be in 5 years time?
 - To what extent will it be possible to bring all of your measurement needs (stress testing, economic capital, ...) into a single “model”?



Priorities for the year ahead

Giuseppe Aloï, Steve Bishop & Luke Carrivick, ORX





Wrap up and final remarks

16:50 – 17:00

*Giuseppe Aloï, Steve Bishop, Luke Carrivick, **ORX***



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Wrap up and final remarks



Thank you to everybody for your time and contribution to the event!



We will be asking for feedback – it would be much appreciated if you can take the time to provide this.

<https://orx.typeform.com/to/uN1q7ljo>



ORX will provide a summary of the key points discussed during the forum.



Thank you. Close of the forum

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