



ORSA – the Irish experience

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Agenda

1. Regulatory environment in Ireland
2. ORSA as a European regulatory tool
3. ORSA – what is it?
4. ORSA – actuarial aspects
5. ORSA – how it developed in Ireland

Ireland

Regulatory environment and the
Insurance Industry

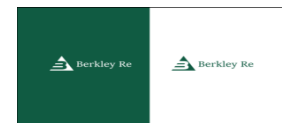
Solvency II in Ireland – the regulatory environment



	HQ in Ireland	EU Branch	Non-Solv II
Life	45	12	1
Non-Life	91	30	7
Reinsurance	60		3
Total	196	42	11

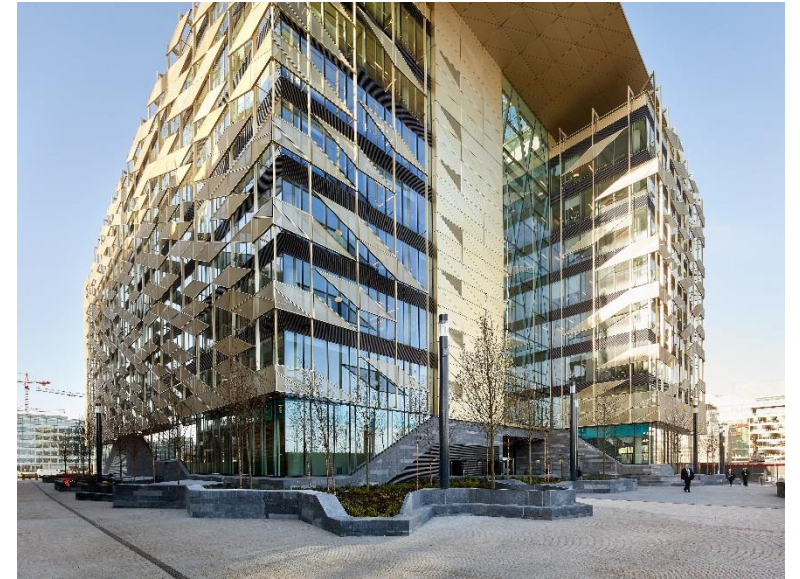
9 internal models approved in Ireland plus 3 partial internal models (more in pipeline)

Euro Insurances



Regulatory Background

- Central Bank of Ireland (CBI)
 - Established in 2010 through Central Bank Reform Act, 2010
 - Responsible for both central banking and financial regulation
 - Replaced the previous entities of the Central Bank and the Financial Services Authority of Ireland and the Financial Regulator ('FR' or 'IFSRA')



- Insurance Supervision Mission Statement:
 - “Protecting consumers through effective supervision that supports the sustainability of the insurance sector”

Role of the Regulator – Prudential Supervision

- Prudential supervision i.e. promoting a sound financial system
 - Solvency and safety of financial institutions provides fundamental protection for consumers
 - Consumer confidence that their deposits and investments are safe and that their claims can be met
 - In turn, this contributes to a stable financial system and to the reputation and good standing of the Irish financial sector
 - Work is focused on:

Minimising the risk of failure by ensuring compliance with prudential and other requirements

Setting an approach to regulation based on risk profile and impact of default

Ensuring risk assessment, measurement and control techniques in all sectors of the industry

Data collection associated with developing better early warning indicators of prudential stress

A programme of on-site inspections

Open and challenging dialogue, underpinned by a credible threat of enforcement

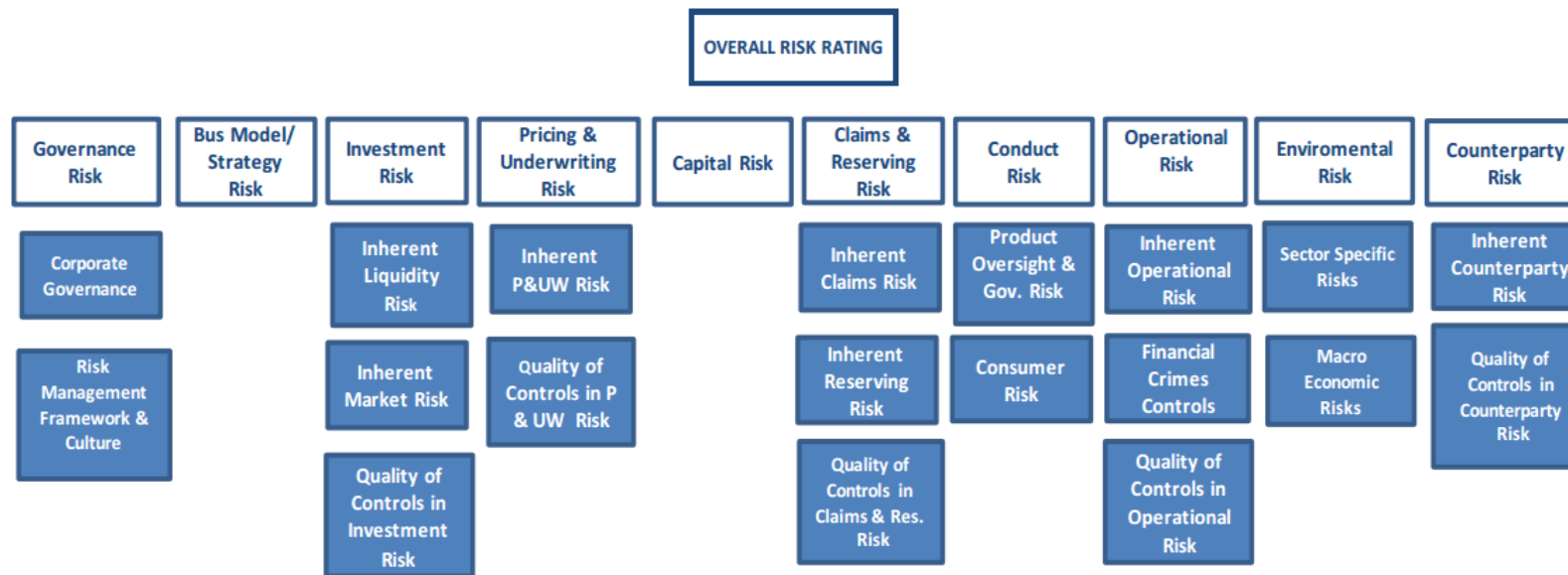
CBI Approach - PRISM

- Probability Risk and Impact System
- Risk/impact based approach to supervision
- 4 impact categories



Risk categories under PRISM

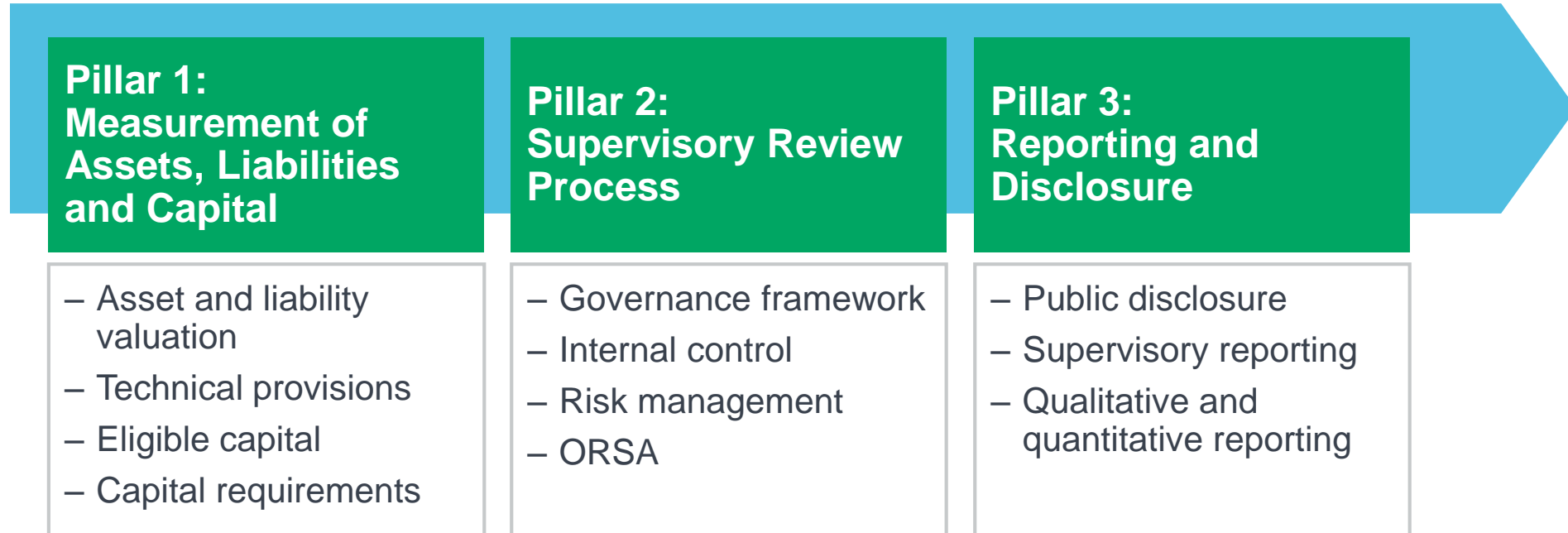
- Probability risk categories have been updated for insurers to largely mirror Solvency II requirements
- Scale for insurance sector risks changed from “Low to High” scale to 1 – 4 (1 = Low to 4 = High)
- CBI to consider each risk category separately



ORSA

Its development as a regulatory tool

Solvency II - Three Pillar Approach



ORSA in development ...

2011 discussion papers ...

ORSA is a tool to improve the risk management of EU (re)insurers by

- promoting a better **understanding** of the company's overall solvency needs
- **disclosing** sufficient and clear information on a company's risk profile
- enhancing the **board responsibility** not to take on more risks than the capital base is allowing.



“The Own risk and solvency assessment (ORSA) is a powerful risk management tool that sets out the principles of **forward-looking self assessment of risk management** and solvency for insurers.”

Gabriel Bernardino
Enterprise Risk Autumn 2017

ORSA – EIOPA's vision

Gabriel Bernardino (EIOPA)

- “ORSA is a top-down process owned by the board”
- “ORSA is connecting business strategy and capital planning”
- “It is core board responsibility not to take on more risks than the capital base is allowing”
- “Two main goals: The board should know that the company can ‘afford’ its strategic plan 3-5 years ahead including bumps on the way and the board should know how to execute its strategic plan ”



Actuarial & Risk Management Functions (Solvency II)

Actuarial Function

- **Technical provisions**
 - Coordinate calculation
 - Methodologies & assumptions
 - Data sufficiency & quality
 - Experience analysis
 - Report to Board on reliability & adequacy
- **Opinion on underwriting policy**
- **Opinion on reinsurance arrangements**

Potentially wide ranging involvement of Actuarial Function where undertaking has separate Actuarial & Risk Management Functions



- **Contribute to effective implementation of risk management system**
- **In particular:**
 - SCR & MCR risk modelling
 - Internal model
 - ORSA

Risk Management Function

- **Facilitate implementation of risk management system**
 - Strategies, processes & reporting procedures
 - identify, monitor, manage and report on risks
- **Develop risk policies**
 - underwriting & reserving, ALM, investment & derivatives, liquidity & concentration risk, operational risk, reinsurance & risk mitigation
- **Demonstrate compliance with investment rules**
- **Internal model**
 - Design & implement
 - Test & validate
 - Document including changes
 - Analyse performance
 - Report to Board

Head of Actuarial Function role within Solvency II

Irish approach

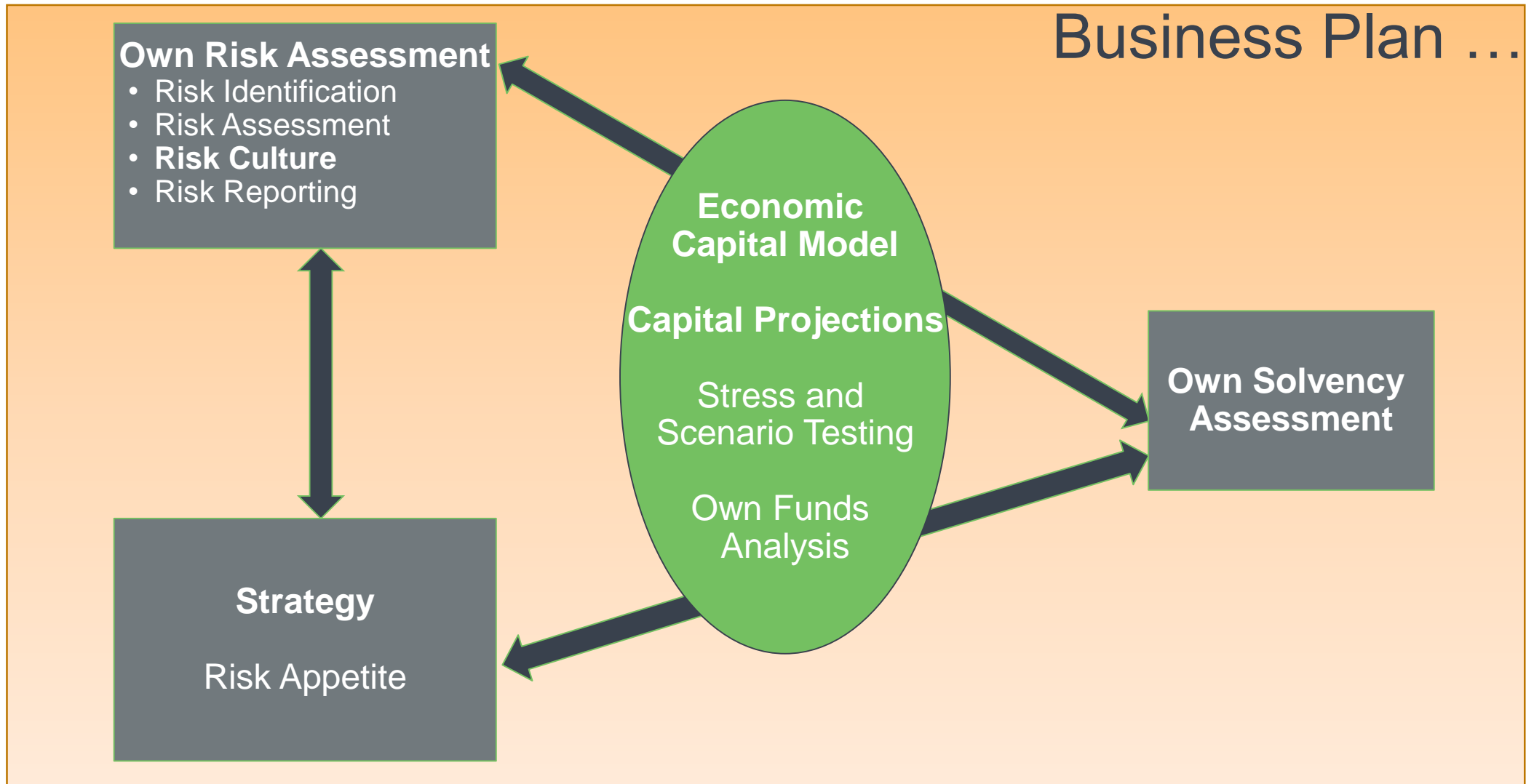
- Calculate Technical Provisions
 - Certify Technical Provisions (AOTP) to the CBI
 - Peer Review of AOTPs required periodically
- Opinion on underwriting
 - CBI Guidance
- Opinion on reinsurance arrangements
 - CBI Guidance
- Contribute to the Risk Management System
 - Actuarial Opinion on ORSA
- Undertakings need a Reserving Policy (& Committee for non-life)

$$\frac{\partial}{\partial \theta} \mathbf{M}T(\xi) = \frac{\partial}{\partial \theta} \int_{R_+} T(x) f(x, \theta) dx = \int_{R_+} T(x) \frac{\partial}{\partial \theta} f(x, \theta) dx$$
$$\frac{\partial}{\partial a} \ln f_{a, \sigma^2}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a, \sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma^2}} \exp\left\{-\frac{(\xi_1 - a)^2}{2\sigma^2}\right\}$$
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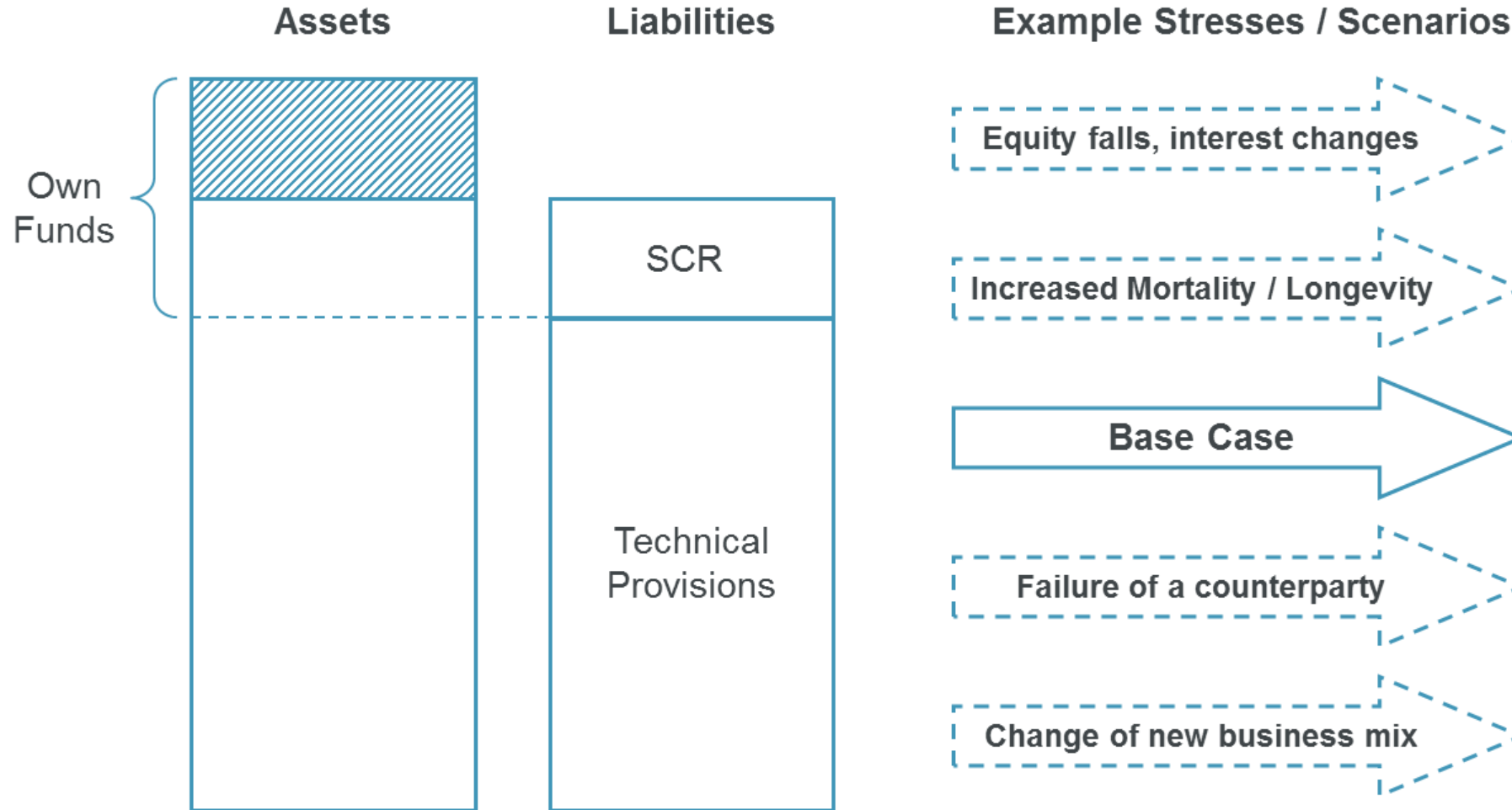
ORSA

What is it?

ORSA – back to basics



ORSA and business planning



Overall solvency needs = level of buffer required to withstand stresses

Questions the ORSA should help answer

- Understanding of risk profile of the company?
- Does company have sufficient capital to support business plan?
- Will company stay within risk appetite going forward?
- What risks are not covered by regulatory capital?
- What risks should be monitored more frequently?
- What scenarios could cause solvency issues?
- What mitigation options are available in these scenarios?
- Key sensitivities to capital & profits?
- Material changes to risk profile over recent period?
- What would cause company to re-run ORSA?

What is Needed?

1. Board involvement
2. Risk Management System
3. Own Solvency Assessment
4. Business Plan
5. Stress and Scenario Testing
6. Documentation

1. Board Involvement

- Need to be able to evidence active involvement
 - Board is responsible for setting capital held by the Company
 - Can be difficult to achieve in practice
 - Board Training on ORSA
- Needs to approve policy and final reports
- Should be involved in scenarios to be explored
 - Perhaps through risk committee
- Needs to challenge the results
 - Minutes should record this challenge and discussion
- Needs to evidence ORSA in strategic decisions(e.g. capital management, setting risk appetite)
 - Management actions arising from ORSA

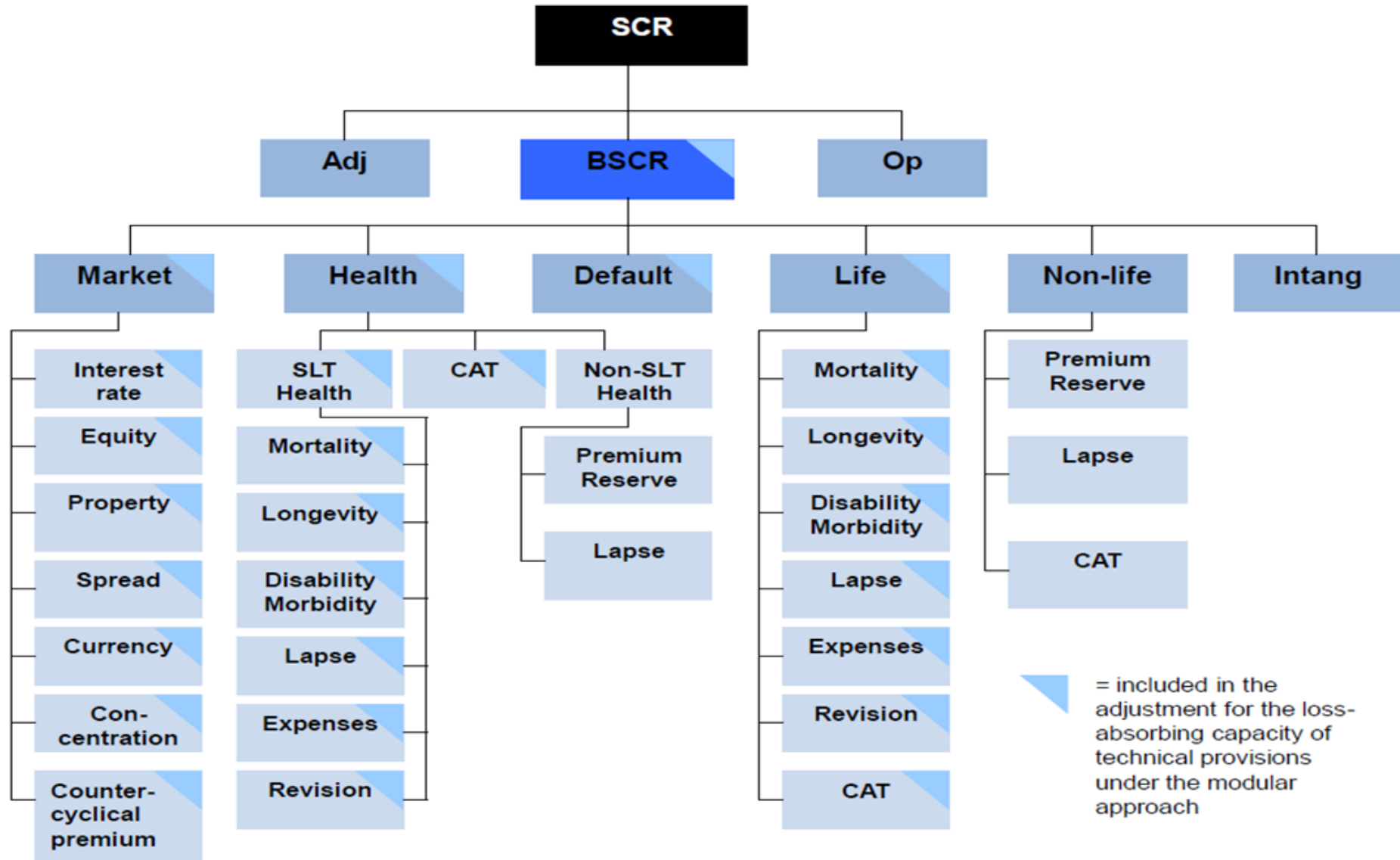
2. Risk Management System

- Need the Risk Management System to produce “Own Risk Assessment”
- Process to identify, measure, respond, monitor and report risks
- **Risk appetite** is a key element of ORSA
- Own Solvency Assessment follows from the risks identified and risk appetite

3. Own Solvency Assessment

- Need to define capital measure to use
 - Use Solvency II measure or something else?
 - Contract boundaries?
- Many companies start with current Solvency II calculations for “capital needs”
- Need to consider whether there are any other material risks that should be included
 - Reputational risk
 - Strategic risk
 - Sovereign debt
 - Changes to capital measures (e.g. EIOPA changes to SCR)

Reminder - Solvency II capital - SCR



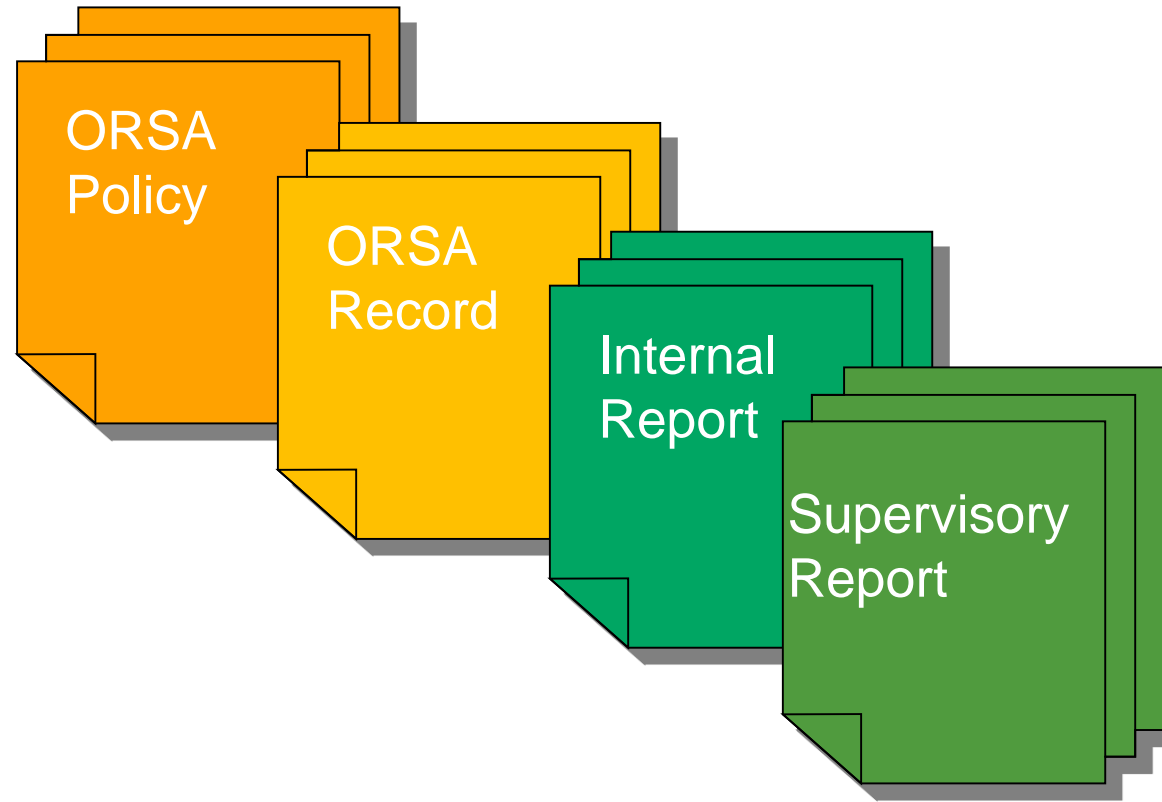
4. Business Plan

- Forward Looking Assessment needs a base projection
 - Approved by the Board
 - Typically 3-5 years
- Need to reflect
 - Sales volumes
 - Product mix
 - Expense budgets
 - Dividend and capital policy
 - Investment policy

5. Stress and Scenario Testing

- Need to apply stresses to base projection
- Need to decide upon scenarios
 - Board involvement required
 - Focus on material risks
 - Reflect dependencies (e.g. lapses linked to markets)
 - Reflect mitigating actions
- Reverse stress tests also useful
 - Determine how much stress the Company can withstand and remain solvent

6. Documentation



6. Documentation

- An ORSA policy
 - Description of processes and procedures
 - Link b/w risk profile, risk limits and solvency needs
 - Stress and sensitivity tests, data quality, frequency & timing
- A record of each ORSA process
 - Level 3 text confirms this does not require new documentation to be explicitly produced
 - Sufficient detail to enable knowledgeable third party to understand and replicate ORSA
 - Record input data, assumptions, output and how this was arrived at.
- An internal report on the ORSA
 - Sets out main outcomes of ORSA process
 - The ORSA report should be designed to be used by the Board and relevant executive committees as a tool for managing risk and capital and in strategic decision making
 - Does not need to contain details of all the process, rather should reference supporting documents
- An ORSA supervisory report
 - Can be the same document as the internal report
 - CBI in Ireland require a pro-forma submission for smaller companies (PRISM Low and Medium Low)



ORSA – a suggested structure for the report



ORSA - Sample Reporting Template

1. Executive Summary
2. Context for ORSA process (relatively static)
 - Strategy and business context
 - Risk management framework
 - System of governance
3. Assessment of overall solvency needs
 - Link with outputs of risk management system
 - How risks are managed/mitigated
 - Capital required for those risks
 - Stress and Scenario Tests
 - Analysis of Own Funds



ORSA - Sample Reporting Template

4. Projections – forward looking assessment of overall solvency needs
 - Forward looking perspective - link with strategy
 - Stress and scenario testing including reverse stresses

5. Assessment of deviation from SCR assumptions

6. Continuous compliance
 - Regulatory capital requirements
 - Technical provision requirements
 - Quality and loss absorbing capacity of own funds



ORSA - Sample Reporting Template

7. Independent Validation

- Independent assessment process
- Results of independent assessment

8. Outcomes of ORSA

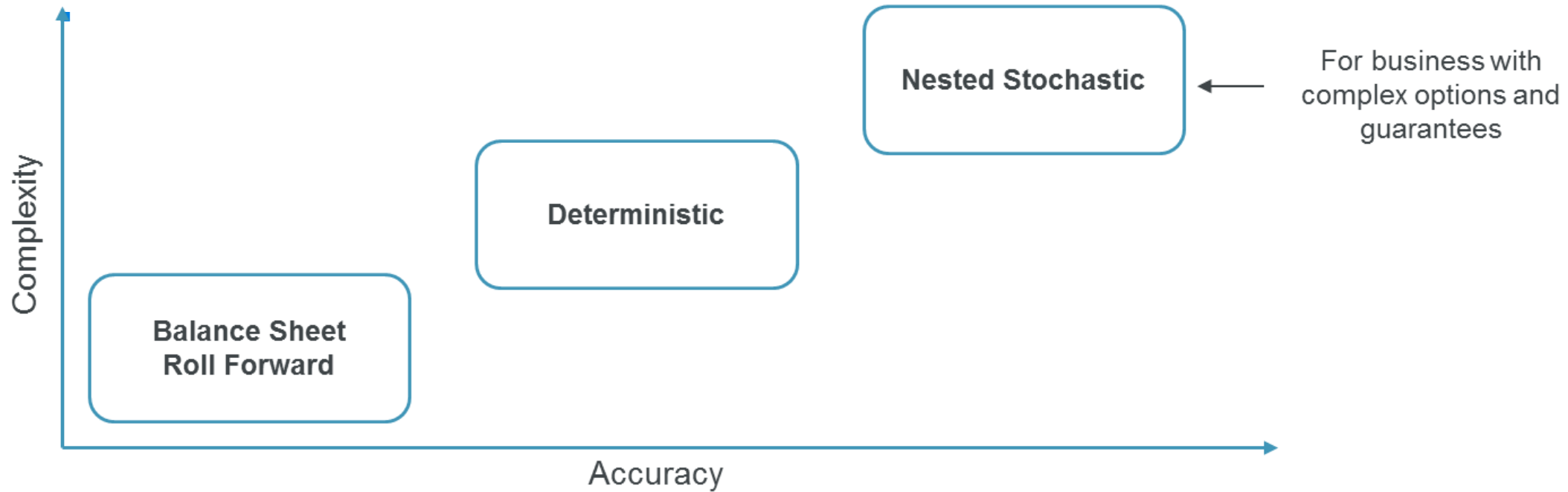
- Review strategy
- Management actions
- Long term capital management



ORSA

Actuarial aspects

Projection methodologies



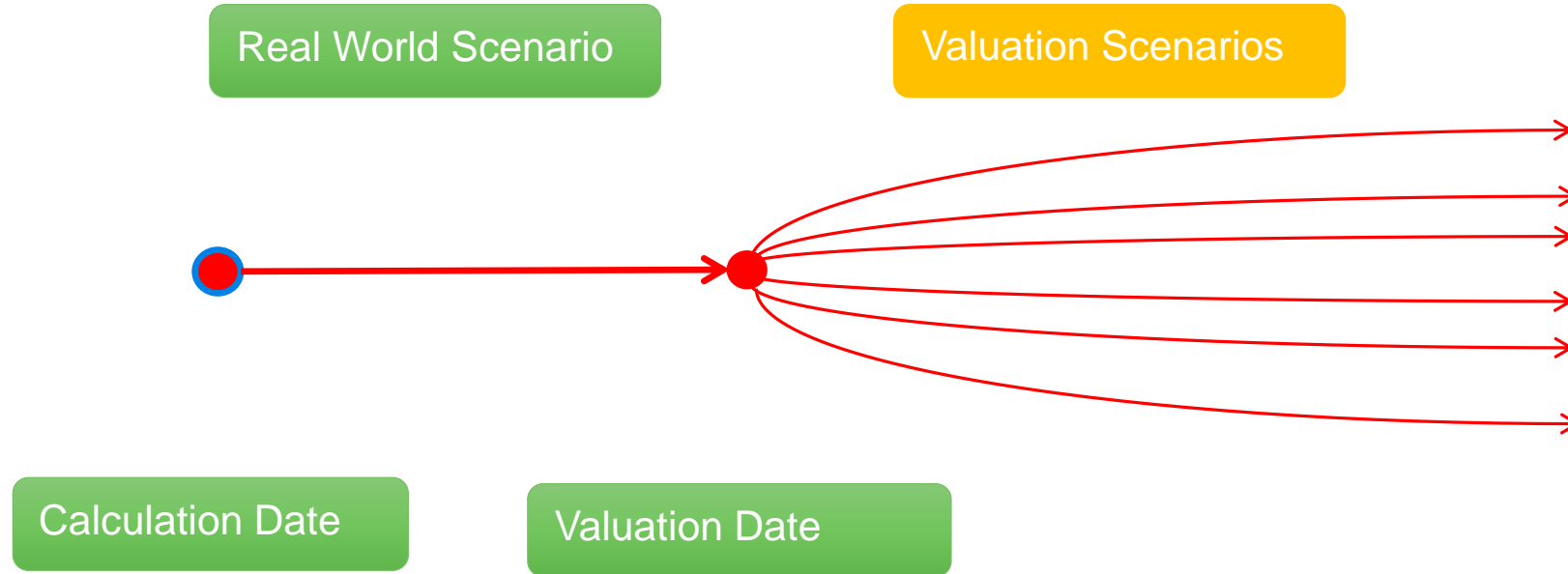
- Issues to consider:
 - IT resources and run times
 - Spurious accuracy
- IMPORTANT: Output must be understood and used by the business

Projecting the Balance Sheet

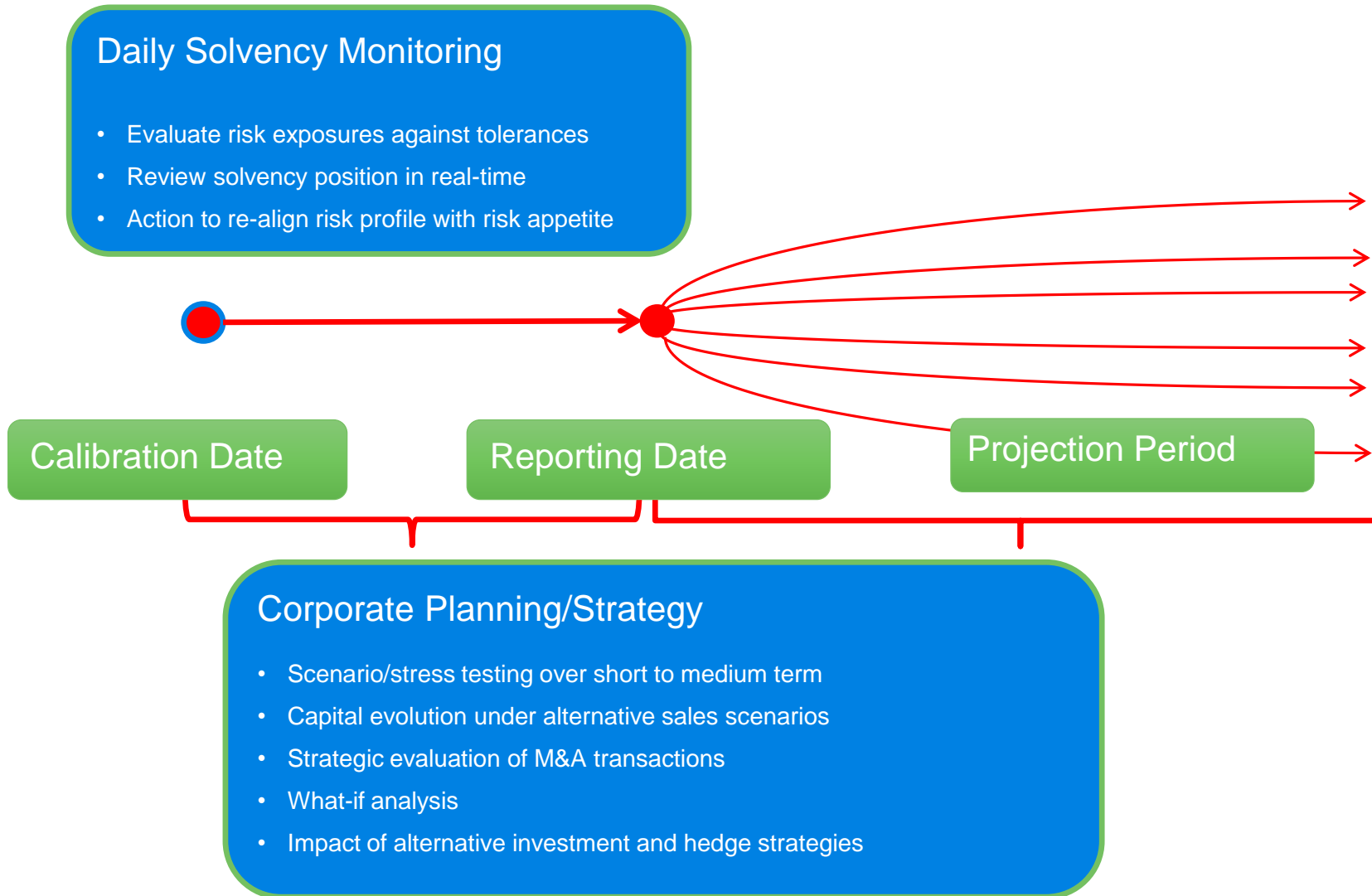
- Deterministic approach may be appropriate for many lines of business
- Liabilities
 - Run-off of Existing BEL and Risk Margin in line with best estimate assumptions
 - Build model points for future new business
- Assets – issues to consider
 - Granular data available on asset holdings?
 - What is the company's ALM strategy?
 - Reinvestment policy for existing assets?
 - What assets are assumed to back new business?
 - What is the company's capital and dividend policy?
 - Rebalancing of portfolio in particular scenarios?

Projection capability for complex liabilities

Nested loop - real world outer and risk neutral inner



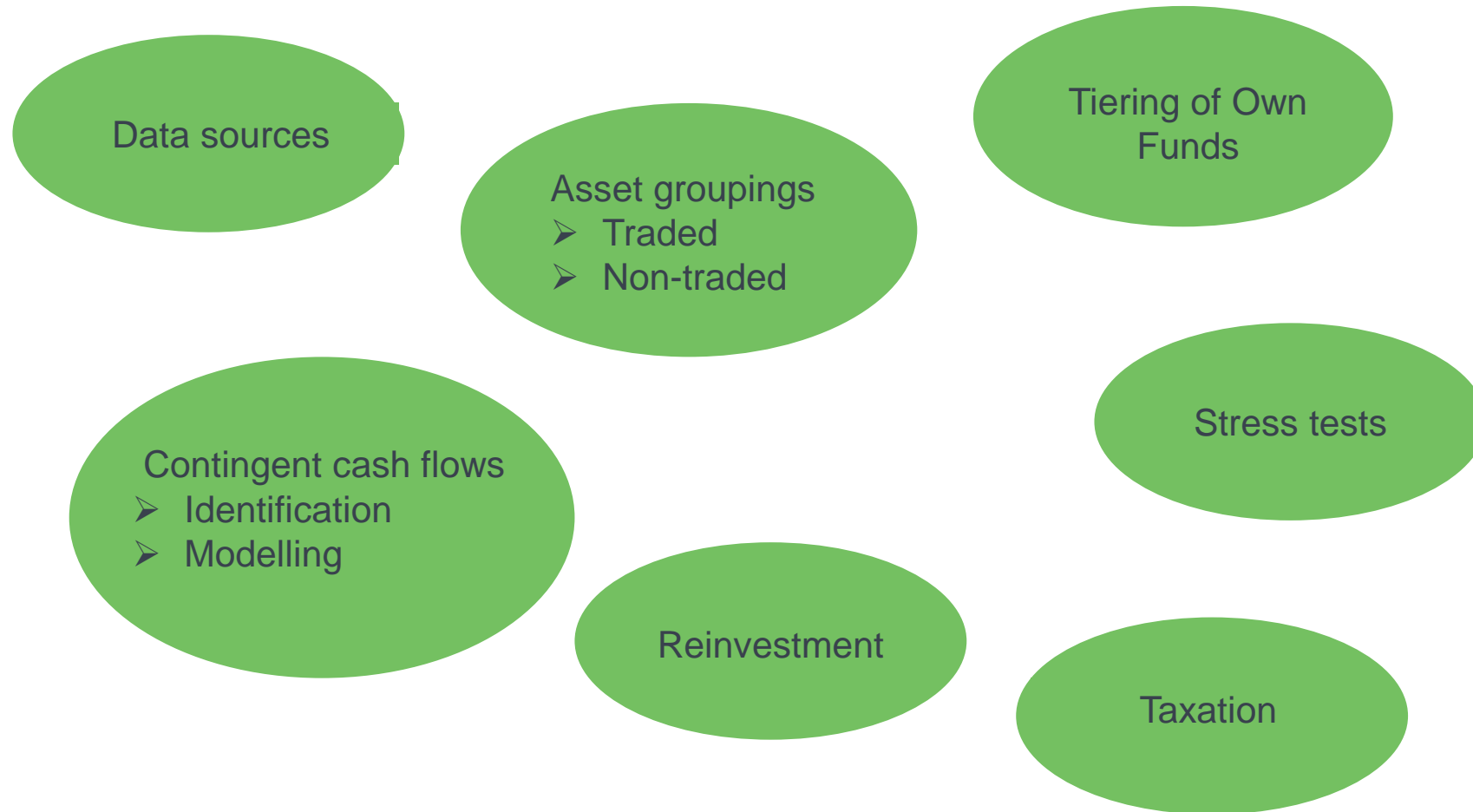
Proxy Model Uses



Projecting assets

- Assets backing liabilities
 - Need to project t_0 assets to t_n
 - Investment return in specific scenario
- Value assets at t_n
 - Risk free curve applying at that point
 - Spreads applying at that point
 - Project ratings and spreads?
- Rebalance at t_n
 - Need to specify simplified rules that dictate rebalancing
 - Match liability profile by currency/duration
 - Management actions in certain scenarios
- Shareholder assets

Asset projections – additional considerations



Tax and Dividends

- Determine tax calculation basis
- Dividend policy linked to IFRS profits and Solvency position
- Change in net equity on Solvency II basis
 - Need to convert to IFRS profits
- Need to project Deferred Tax Liability
- Identify acceptable simplifications

Projecting SCR

- Full recalculation for each future year very onerous
 - Significant number of market consistent valuations to calculate opening SCR
 - Projecting forward, total number of calculations mounts up very quickly
- Key risk drivers, e.g.
 - Sums at risk for insurance risks
 - Growth in equity / property / bonds for market risks
 - Funds under management for future AMCs
- Other options available
 - Trade off between accuracy and practicality

Actuarial Standards

- AAE ESAP 3 model standard (ORSA)



https://actuary.eu/documents/ESAP3ORSA_Adopted-2017-08-02-FINAL.pdf

- CBI has issued Guidelines on the “Domestic Actuarial Regime”

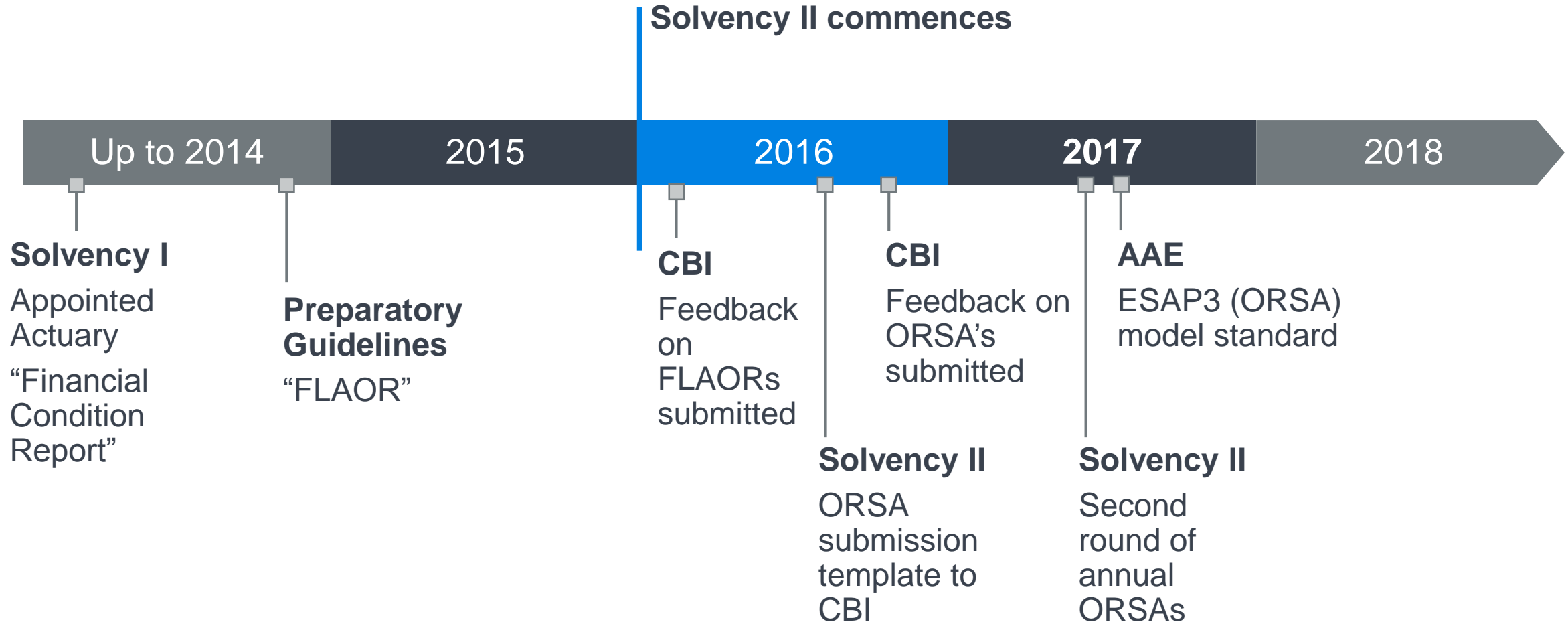
<https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/requirements-and-guidance>

ORSA

Timeline for development in Ireland

Timeline on ORSA development in Ireland

Regulatory priority since 2014



ORSA – lessons from 2014

- Quantitative issues
 - Producing opening balance sheet & SCR is one thing, but ...
 - ... projecting future balance sheets, SCRs, Risk Margins is another
 - Often multiple models with significant manual processes
- The need to start early
 - For effective Board involvement & challenge
- Whose “Own” is it anyway ?
 - Parent / Group view versus local view
 - Role of the local Board and local Supervisor

CBI's attitude to ORSA progress – 2014

Key Points

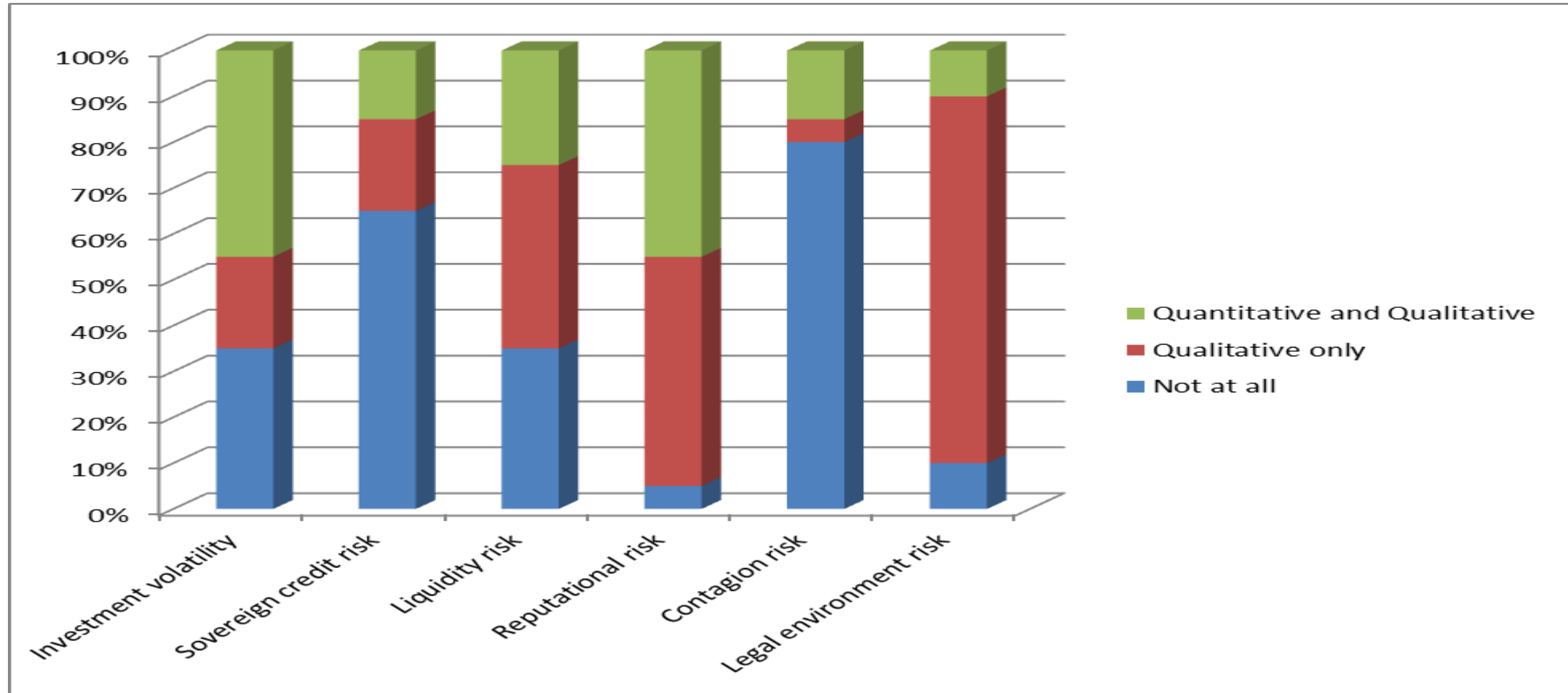
- Board ownership – “so-called use test”
- Process as important as the document
- Address capital needs – Company own view (not just repeat the Standard Formula)

Issues Noted

- Ignore risks that are difficult to quantify
- Inadequately tailored to local entities
- Stress tests too benign
- Fundamental assumptions – business plans and time horizon
- Deviation from assumptions – not appropriately addressed

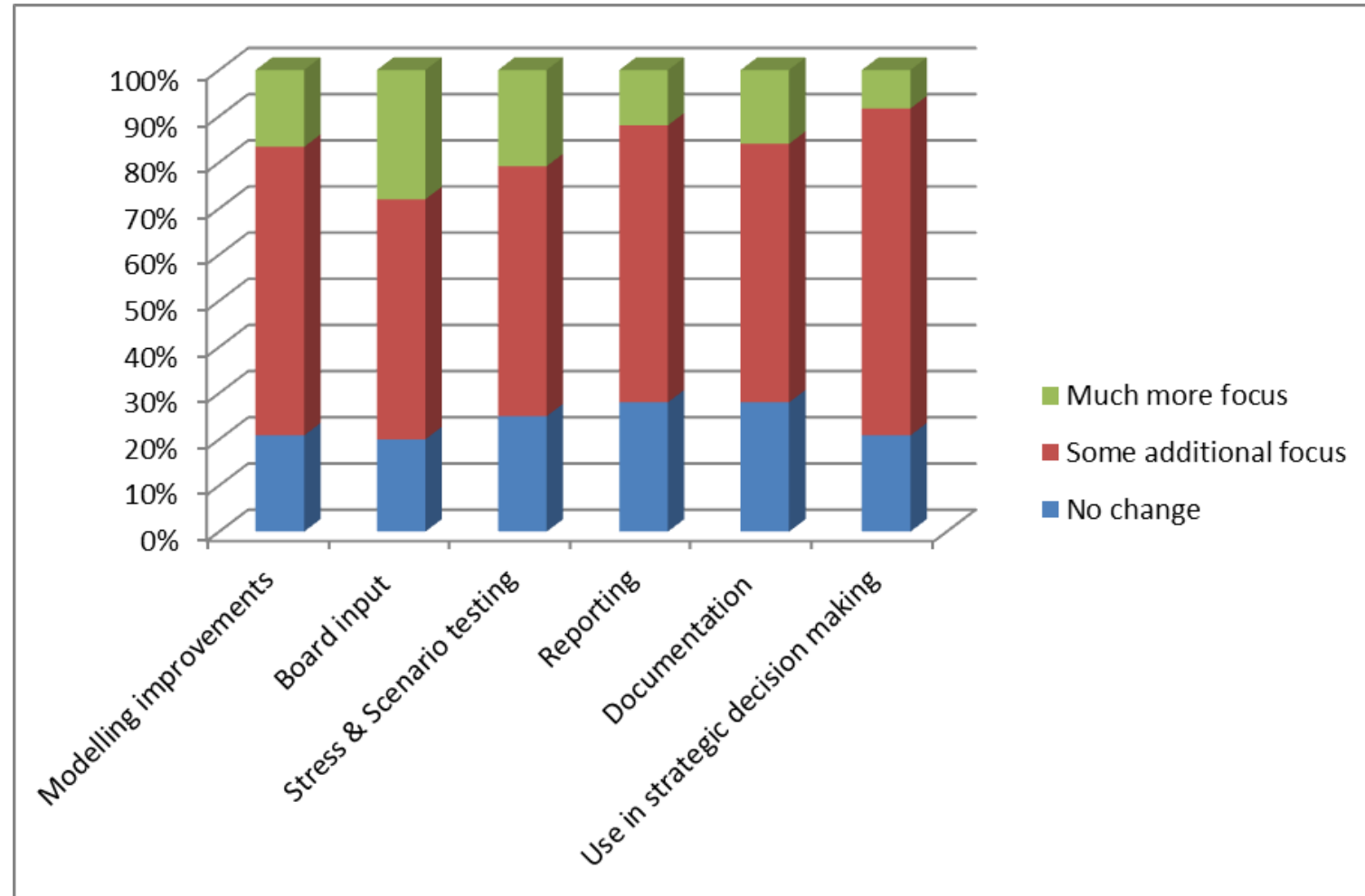
Extra risks not covered by Standard Formula

Milliman client survey 2014 – scope of ORSA “other risks”



ORSA - 2015 Improvements

Milliman client survey 2014

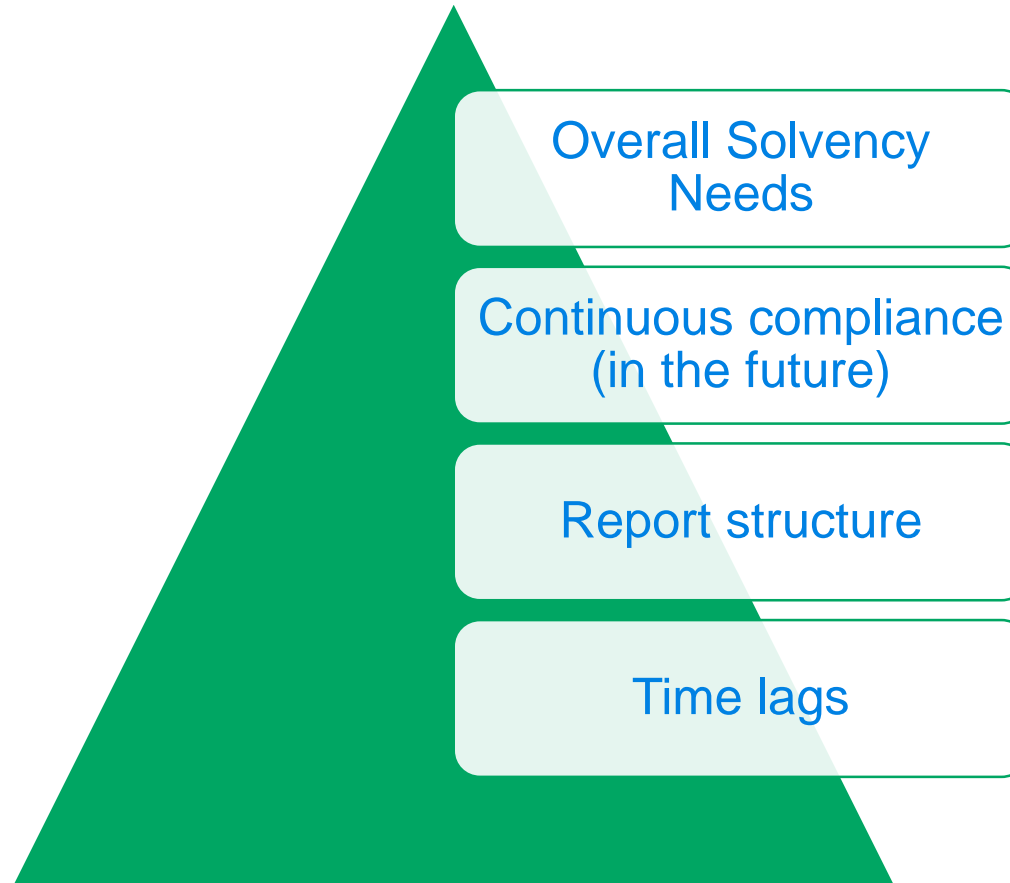


FLAOR 2015 – CBI feedback

May 2016

Also mentioned:

- Appropriateness of Standard Formula (also on 2016 agenda for CBI)
- Board involvement
- SCR and Own Funds projections – are they reliable?
- Not very stressful stress tests



ORSA Feedback – Sylvia Cronin, 13 December 2016

Director of Insurance Supervision, CBI

Geopolitical risk:

- Brexit and results of the US Presidential election
- Likely have a profound impact on how we transact business in Ireland
- Such environmental factors need to be considered

Comprehensive suite of relevant and current **stress tests** (e.g. Pension, Brexit)

The **level of involvement and discussion by the Board** within the ORSA process is an area that our supervision teams will be assessing on a continuous basis.

ORSA Board – Key Questions to Ask (1)

? Can you demonstrate understanding of the ORSA and implications of results?

? Did you take an active role in steering and challenging the ORSA?

Have the ORSA results/insights gained taken into account of:

? Long term capital management?

? Business Planning?

? Product Development and Design?

? Did you approve the ORSA policy?

? Did you approve the ORSA report and supervisory report?

? Have the ORSA results been communicated to all relevant staff?

? Are any material risks missing?

ORSA Board – Key Questions to Ask (2)

- ? How robust are the projections?
- ? What approximations/simplifications have been used?
- ? How achievable are the management actions? Are they approved?
- ? How achievable is the business plan?
- ? Is the Standard Formula appropriate?
- ? Have you ensured continuous compliance?
- ? Are the stress scenarios onerous enough?
- ? Does the ORSA meet all of the Level 1, 2 and 3 requirements?
- ? Did you take account of any CBI feedback (either generic or specific)?

“It is evident that more firms are finding their ORSA process to be useful, and to be allied to their long-term business planning.”

Sylvia Cronin, Director of Insurance Supervision
European Insurance Forum 16 March 2016

Thank you



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