Milliman Breakfast Briefing

14th November 2019

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Irish SFCRs – 2017 and 2018

Points of Interest for IoM Insurers

Rob Frize

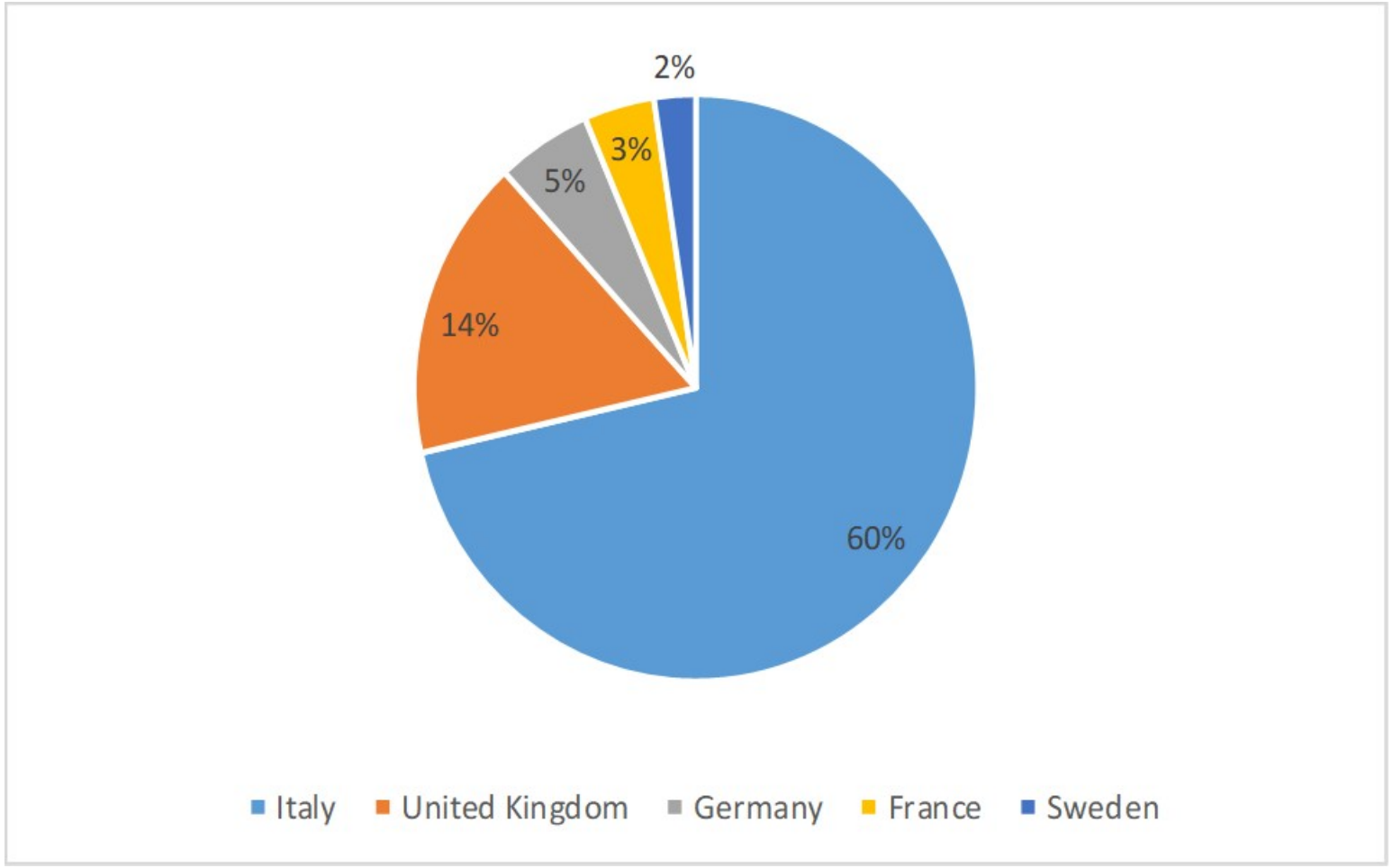
14 NOVEMBER 2019

Ireland – Well-established & large cross border market

Top 10 Total Gross Written Premiums (€ million)	2017	2016	Type
Intesa Sanpaolo Life	7,941	8,986	Life (Cross Border)
Irish Life Assurance	7,268	5,199	Life (Domestic)
SCOR Global Life Re	4,179	4,747	Reinsurance
Zurich Life Assurance	3,233	2,684	Life (Domestic)
Darta Saving Life Assurance	3,075	2,590	Life (Cross Border)
New Ireland Assurance	1,792	1,671	Life (Domestic)
AXA MPS Financial	1,642	1,310	Life (Cross Border)
Hannover Re (Ireland)	1,558	1,712	Reinsurance
AZ Life	1,526	3,533	Life (Cross Border)
MetLife Europe	1,486	828	Life (Cross Border)

2017 Gross Written Premiums by Country (excl Ireland)

Cross Border Life Insurance Business



Italy Top 5:

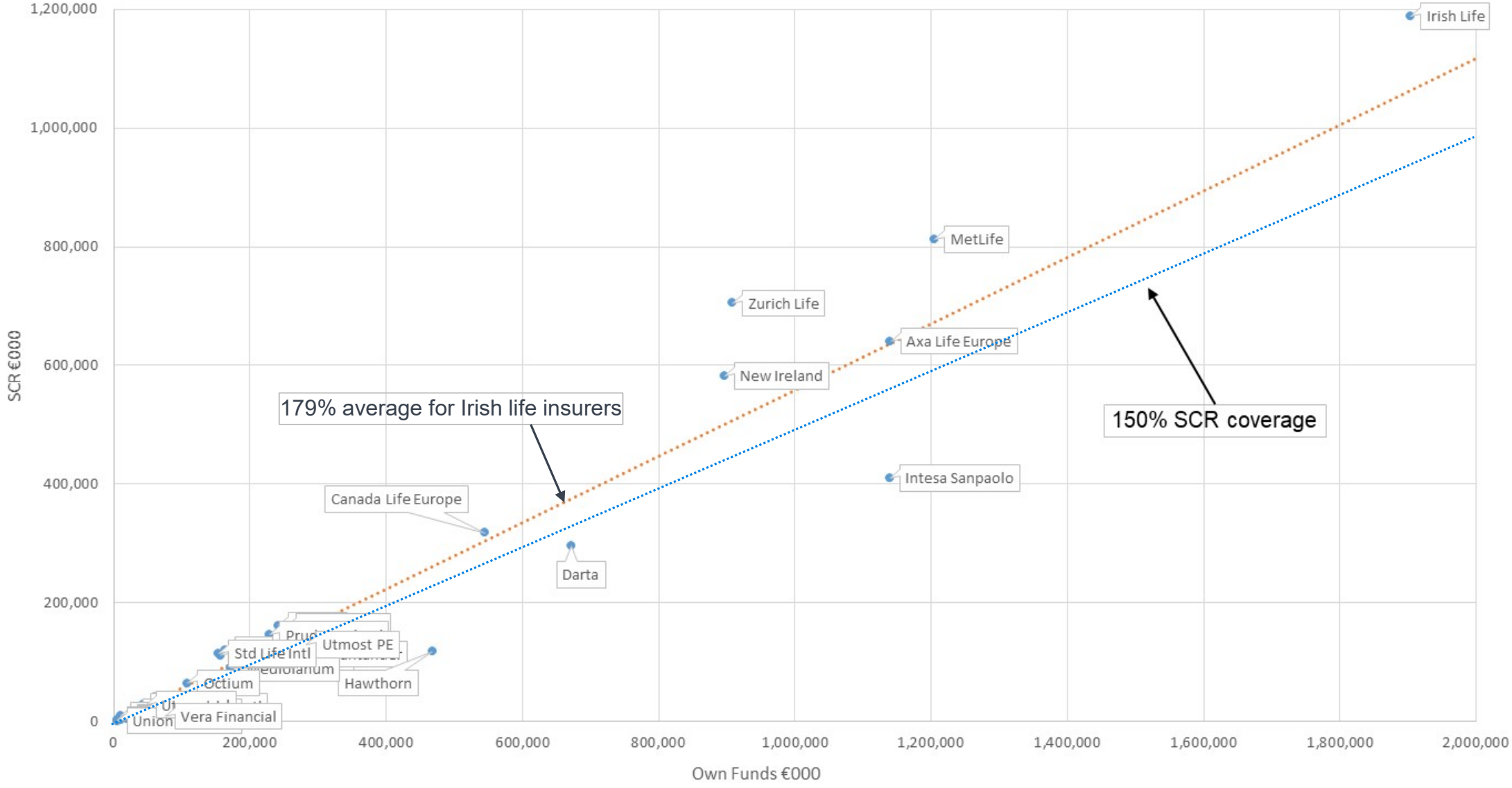
- Intesa San Paolo Life
- Darta
- Axa MPS
- AZ Life
- Utmost Pan Europe

UK Top 5:

- SLI, Pru, CLI
- MetLife Europe
- St James' Place International

2018 GWP estimate - €20bn

2017 Distribution of SCR and Own Funds



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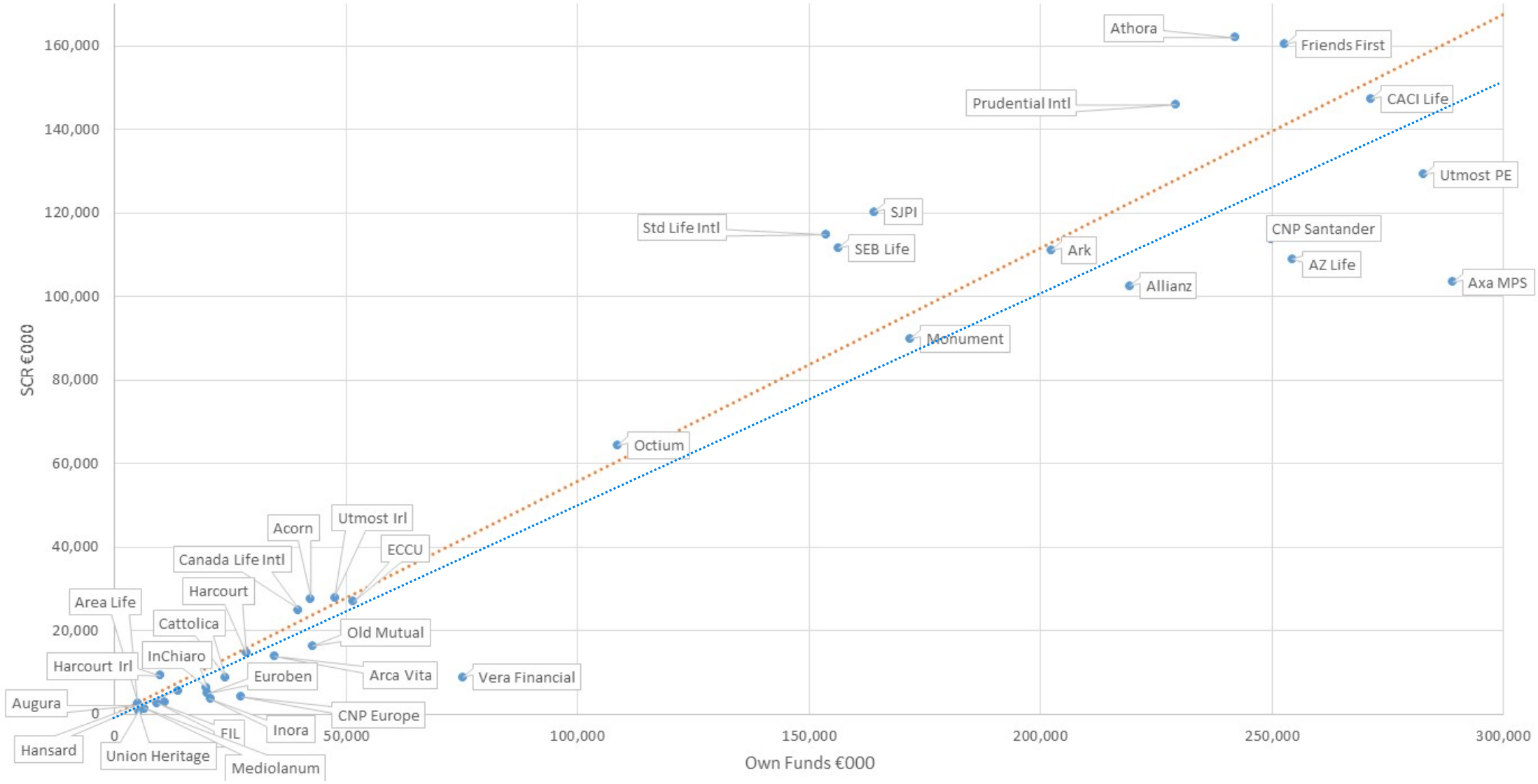
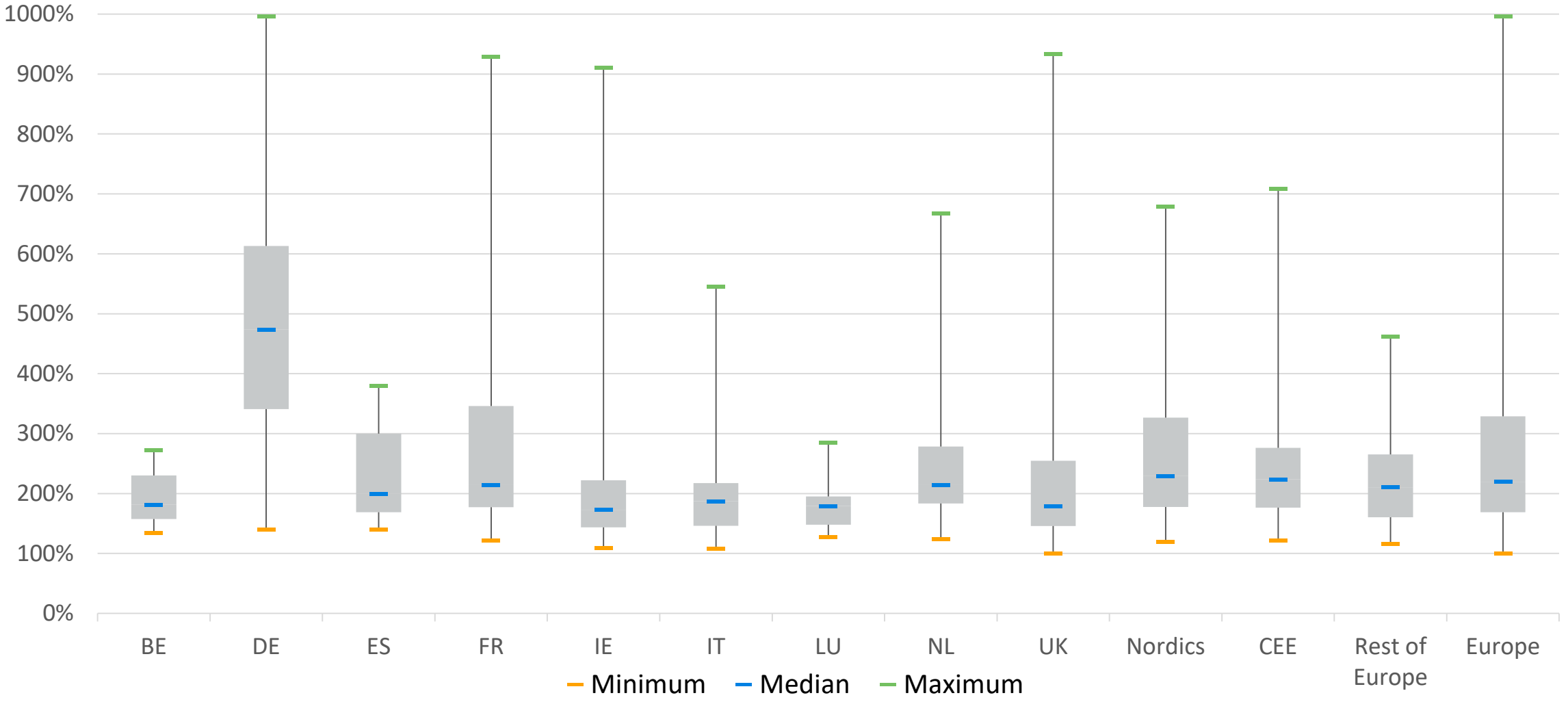
2017 Distribution – Bottom Left Quadrant

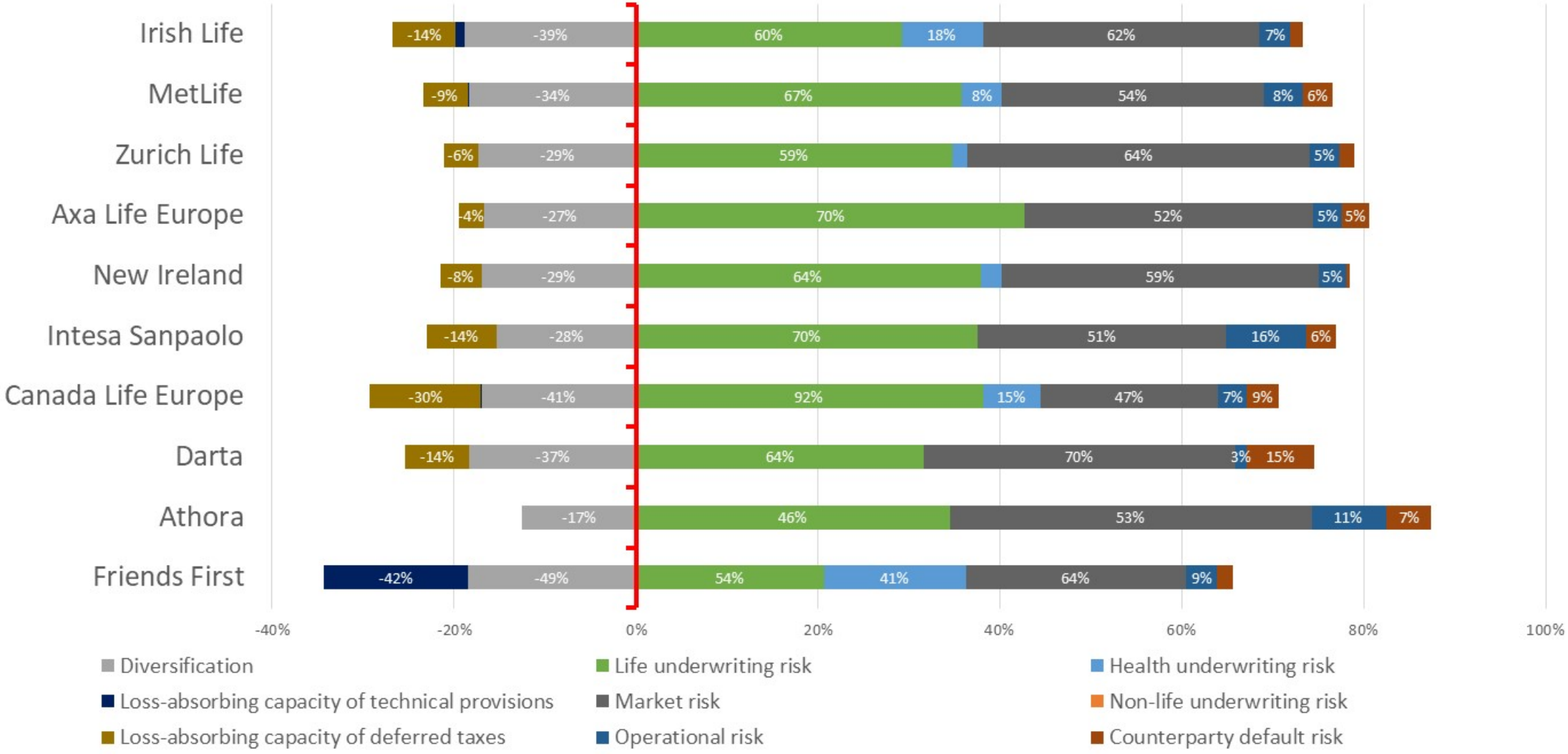


Solvency Coverage – 2018 SFCRs

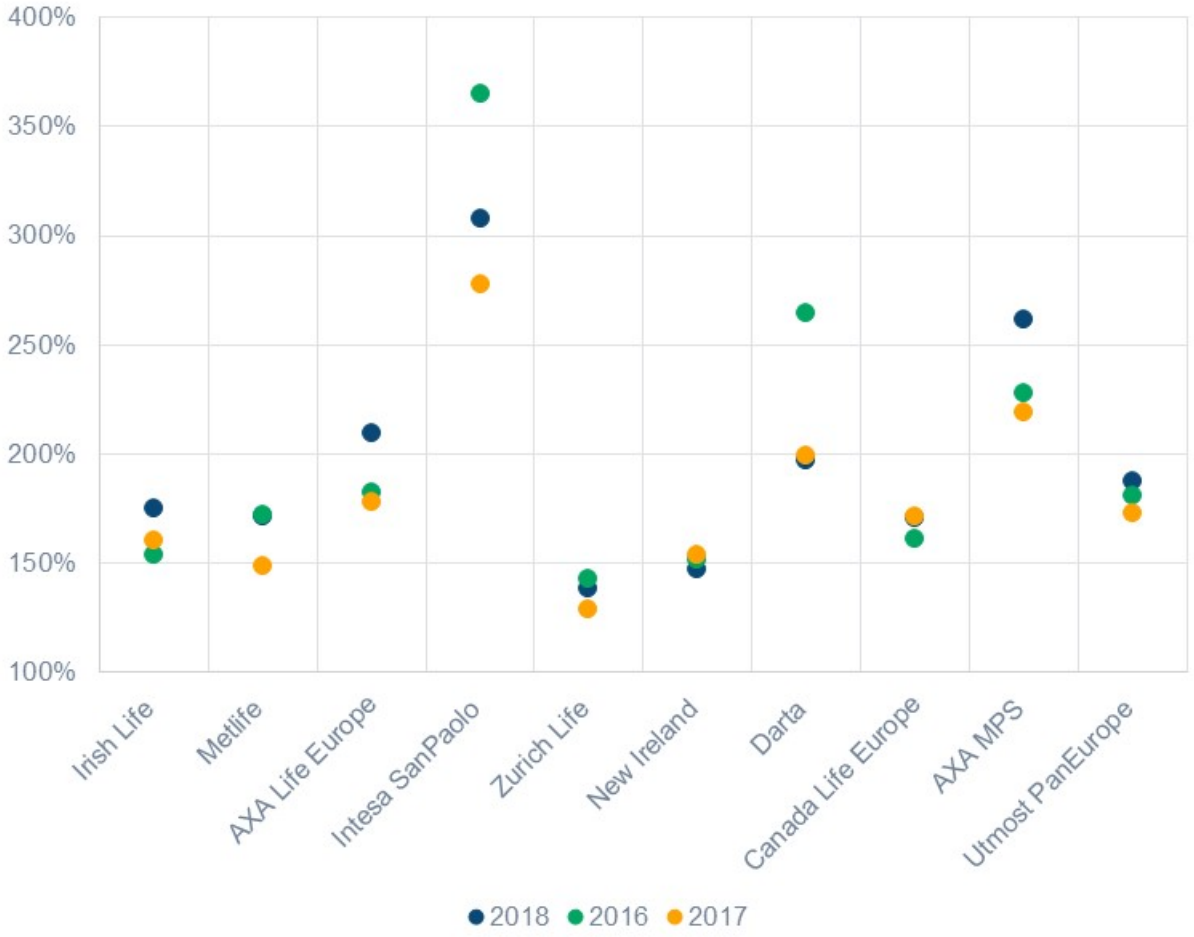


*Companies with SCR coverage ratios of >1000% have been removed from the chart for readability

Life – Top 10 SCR Coverage



SCR Coverage – 2018 Top 10 Update



- Changes of note:
  - Mass Lapse Reinsurance Arrangement (Met Life)
  - Volatility Adjustment (New Ireland)
  - Reduced exposure to market risk on future fund management charges (Zurich)

Other Capital Management Techniques

Paul Fulcher and Luca Tres describe the pros and cons of 10 techniques and solutions available to European life insurers to help manage capital under Solvency II

Paul Fulcher

Luca Tres

"Planning, gentlemen, is 'What are you going to do next year that's different from what you did this year?' he told them. 'All I want is five items.'"

The initial quote is taken from the book *Barbarians at the gate: The fall of RJR Nabisco*, the iconic book best representing the change that happened to the corporate world during the turbulent years of the late 1980s.

The life insurance industry may not be facing any imminent 'barbarians' but we can draw a parallel between what happened to the corporate world then and the insurance industry around the introduction of Solvency II: a change in mindset and disruptive new entrants in the space.

These new entrants include private equity houses, hedge funds and insurtech

Post-crisis, the involvement of monoline insurers has diminished but specialist investors, such as ILS funds, are still well placed to remove this risk from insurance and reinsurance companies' balance sheets: the fact that extreme risks are unlikely events makes risk transfer transactions a cost effective way for re/insurers to release capital and make their balance sheet more resilient.

In this category we also include transactions such as the Pandemic Emergency Financing Facility issued by the World Bank. Although technically outside the pure insurance landscape, this is a good canvas for potential transactions done by insurers and reinsurers: it testifies to the market's ability to absorb extreme morbidity and mortality risks.

There is also the possibility to create geographically-focused extreme mortality hedges, typically in large urban areas. This is an area of increasing interest among reinsurers, and is one that overlaps with other types of risks, such as terrorism.

Capital markets have already offered solutions to insurers facing regulatory scrutiny on this front: we expect the Eiopa intervention to further enlarge the audience.

7. Loss absorbing capacity of deferred taxes

Solvency II allows the loss absorbing capacity of deferred taxes (LAC DT) to offset losses to own funds under the SCR calculation.

Stated more simply, the SCR calculation aims to reflect a stressed scenario where the insurer would suffer economic losses impairing its P&L and, hence, capital position. Those same losses would create a deferred tax asset that the insurer could use to reduce its future tax bill, resulting in a higher future post-tax income and hence a stronger future capital position.

However, in the event that losses under the SCR create a deferred tax asset, insurers need to prove to their regulator this can be offset against taxes on future profits. More specifically, insurers need to substantiate sufficient future profits in the business scenario likely to result after the events associated with a SCR shock: a task that often is not straightforward.

Historically there have been significant differences between the approach taken to LAC DT recognition in different EU countries. The Dutch regulator[9] issued one of the more detailed specifications, requiring insurers to demonstrate both:

- the ability to survive and, if needed, recapitalise after an SCR event; and
- the sustainability of future profits under a range of investment scenarios.

This has given rise to the need for capital solutions, such as contingent capital after an SCR event, to allow full recognition of the LAC DT asset. Stated alternatively, insurers can enter into transactions that can prove their ability to survive the shocks and have enough future profitability, resulting in the regulatory green light to fully utilise LAC DT as an effective SCR reduction element.

Following an Eiopa review in 2018, the European Commission proposed to amend the Level II Delegated Acts to produce a more consistent EU-wide interpretation of recognition of LAC DT[10]. We view this as a necessary harmonisation from which the market will benefit. Capital markets have already offered solutions to insurers facing regulatory scrutiny on this front: we expect the Eiopa intervention to further enlarge the audience.

Examples of recovery planning actions[11]

RESTRUCTURE	IMPROVE LIQUIDITY	DE-RISK	RAISE CAPITAL
• Portfolio transfer • Closure • Group restructure	• VIF monetisation • ILS (Insurance Linked Securities) • Investment portfolio rebalancing	• Reinsurance • Capital markets • Investment strategy	• Equity and debt • Contingent capital • Group finance • Off-balance sheet

8. Capital Fungibility

It often happens that re/insurance groups (especially if international) have capital locked within one subsidiary (or one country), capital that does not necessarily count as capital at group level, and that often cannot easily be moved across geographies.

To reduce these potential challenges, large groups are increasingly using internal reinsurance entities (so-called 'mixers') to benefit from diversification and to remove risk from complex jurisdictions, hence reducing the need for capital injection in a growth context. Allianz and Aviva are notable examples of how such internal reinsurance entities have reached a very sizable scale.[11]

The use of ancillary own funds under Solvency II is an alternative technique that could deliver similar results. Ancillary own funds are unfunded capital instruments eligible to cover Solvency II capital requirements. They might take the form of a "letter of credit", or similar structures, and are an alternative to funding available capital with equity or hybrid debt.

Depending on the jurisdiction, this can be an effective way to help insurance groups keep capital at holding company level as opposed to risking having it

- Other capital management techniques:
  - VIF securitisation
  - Contract boundaries
  - Risk margin
  - Lapse hedging
  - Reinsurance "mixers"

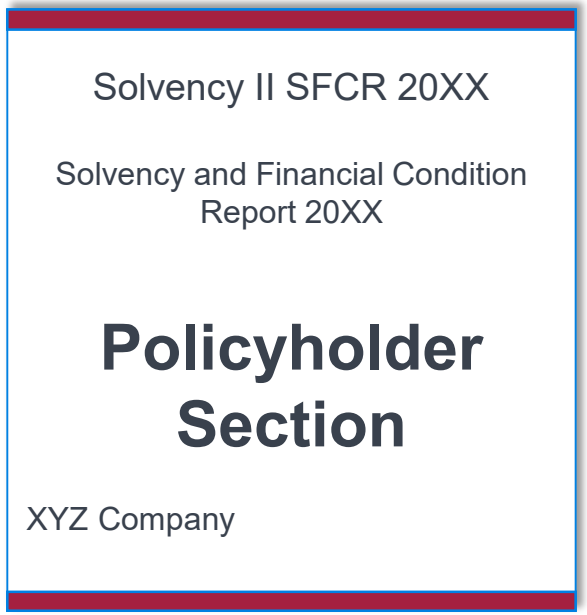
IoM Framework – Public Disclosure

- Discussion Paper DP18-03-T18 issued 2018/19
- Consultation Paper planned 2019/2020
- Implementation:
  - Life – Mid-2020
  - Non-Life – During 2020

Changes to SFCRs – EIOPA 2020 Review

A new-look SFCR: policyholder section

EIOPA Proposal

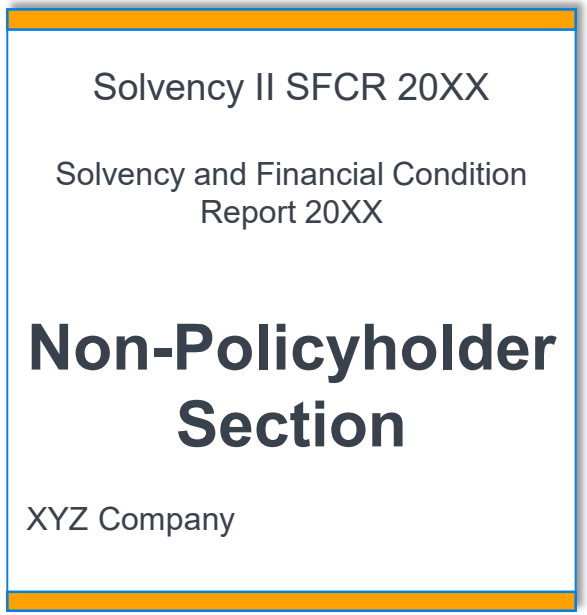


- Easy to read
- Easy to access
- Use of standardised text from EIOPA
- Short, limited in scope: a “2-pager”
- Address only the areas of Solvency II that are useful and relevant to policyholders e.g.
  - Key performance information
  - Risk profile and financial strength
  - Outsourcing of certain functions
  - Significant events over the period

Changes to SFCRs

A new-look SFCR: non-policyholder section

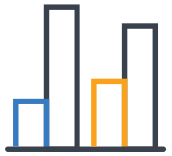
EIOPA Proposal



- Similar structure to current SFCRs
- No “padding” – only information that is explicitly required
- More charts, graphs, tables
- Detailed information on governance and capital management policies moved to the RSR
- Additional quantitative information

Changes to SFCRs

Helping professional readers: standardised sensitivities



EIOPA proposal

Economic Assumptions

- Equity Markets (+/- 25%)
- Interest Markets (+/- 50bps)
- Credit spreads on government bonds (+/- 50bps)
- Credit spreads on corporate bonds (+/-50bps)
- Real-estate values (+/- 25%)

Non-economic Assumptions

- Expenses (+10%)
- Lapse rates (+10%)

- Impact on amount of SCR and Own Funds
- Can publish additional list of sensitivities that better reflect risk profile
- Similar or identical to Market Consistent Embedded Value Principles© ("MCEV")
- **EIOPA welcomes views on how this should be included**

Changes to SFCRs

Helping professional readers: analysis of change of Own Funds

EIOPA proposal

- Changes due to **valuation of the assets**
- Changes due to **new capital issued or redeemed**
- Changes due to **valuation of technical provisions of existing business**
- Changes due to **new business**
- Changes due to **taxation**
- Changes due to **dividends** (foreseeable and paid)
- Changes due to **other items**

- Series of movements in Own Funds
- % of Own Funds and absolute amount
- Similarities to:
  - Current QRTs (previously private)
  - PRA: David Rule A-Z speech
  - MCEV Principles
- **EIOPA welcomes views on how this should be included**

Links

Milliman Review of 2018 SFCRs – Irish Sample

http://assets.milliman.com/ektron/Milliman_BriefingNote_SampleLifeInsurersSFCRs_final2018.pdf

Milliman Research Report – 2018 Non-Life SFCRs

http://assets.milliman.com/ektron/Analysis_of_non-life_insurers_Solvency_and_Financial_Condition_Reports.pdf?lng=1041%27A=0

Capital Management Article

https://www.milliman.com/insight/2019/A-capital-management-toolkit-for-life-re/insurers/

CBI's SFCR Repository

https://www.centralbank.ie/regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/solvency-and-financial-condition-report-repository

Solvency II Wire

http://siiwdata.solvencyiiwire.com

Milliman Briefing Note - EIOPA SII 2020 Review – Consultation on SFCR

http://assets.milliman.com/ektron/EIOPA_Consultation_Paper_on_proposals_for_SolvencyII_2020_review-Package_on_Supervisory_Reporting_and_Public_Disclosure-Solvency_and_Financial_Condition_Report.pdf

ORSA processes and outcomes

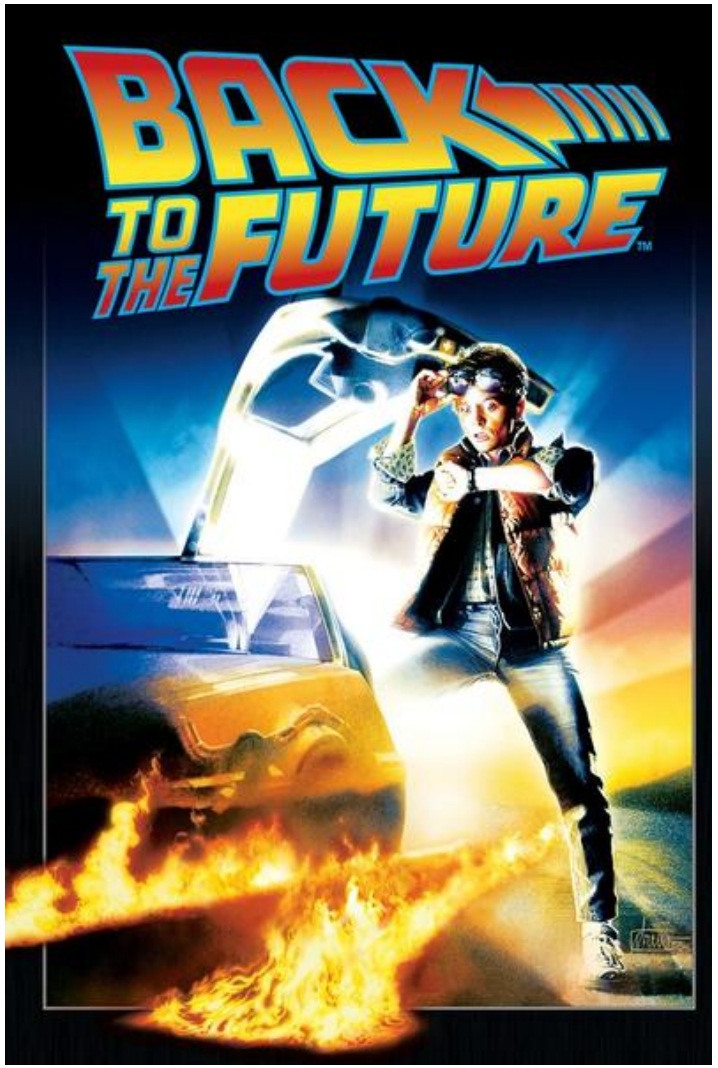
Lessons from the future

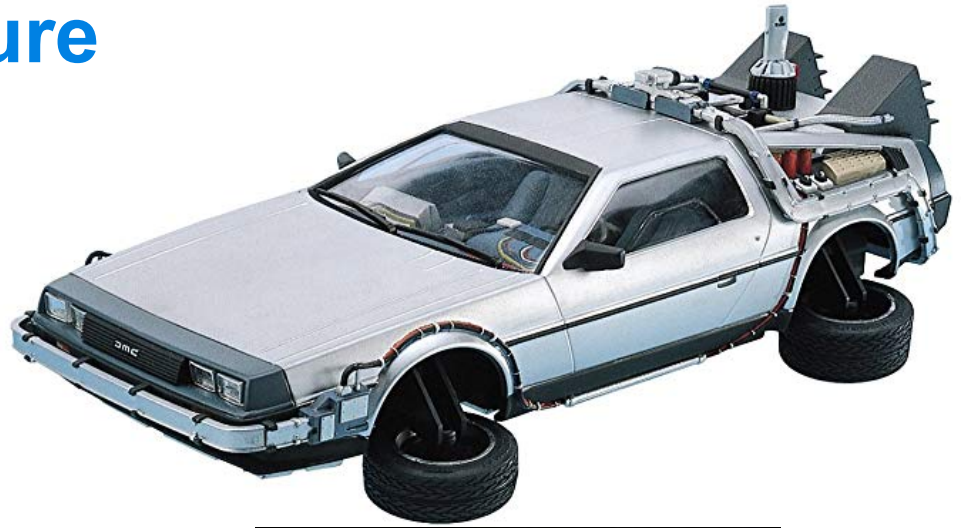
Mike Claffey & Patrick Meghen

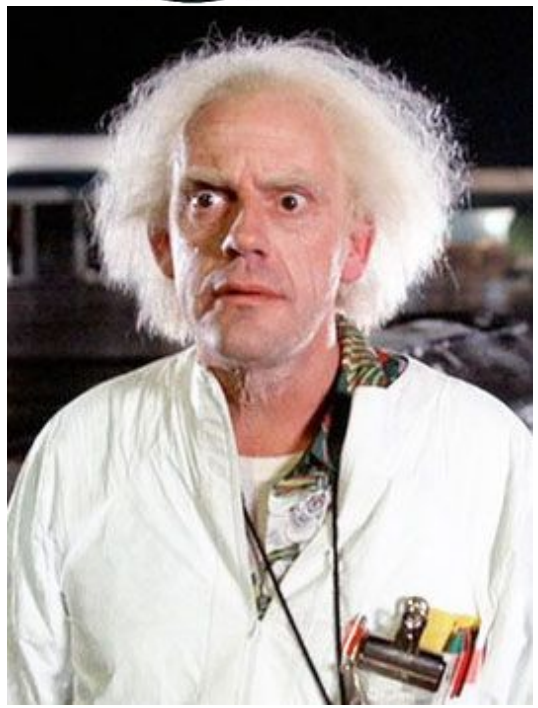
14 NOVEMBER 2019

Contents

Lessons from the future







Introduction & Key Components

Isle of Man ORSA requirements

CORPORATE GOVERNANCE CODE OF PRACTICE FOR COMMERCIAL INSURERS

- Schedule 2 (ORSA)

2 General

(1) An insurer must carry out an ORSA at appropriate intervals (including as referred to in sub-paragraph (3)), and at least annually, to assess—

(a) the adequacy of its risk management;

(b) its compliance, including on a continuous basis over an appropriate forecast time horizon, with its—

(i) regulatory capital requirement; and

(ii) capital adequacy requirement and liquidity adequacy requirement: and

(c) the significance with which its risk profile deviates from the assumptions underlying its regulatory capital requirement.

ORSA Sections

Isle of Man vs Solvency II

- Adequacy of risk management

- Out of scope
- (RMS background, own risk assessment?)

- Capital requirements
- Liquidity

- Own Solvency Assessment

- Risk profile deviates from assumptions underlying its regulatory capital requirements

- Risk profile deviates from the SCR calculation
- Appropriateness of the Standard Formula

Risk Management System requirements

CORPORATE GOVERNANCE CODE OF PRACTICE FOR COMMERCIAL INSURERS

60 System

The risk management system of an insurer must—

(a) be ongoing and comprehensive including strategies, policies, and procedures that promptly and effectively—

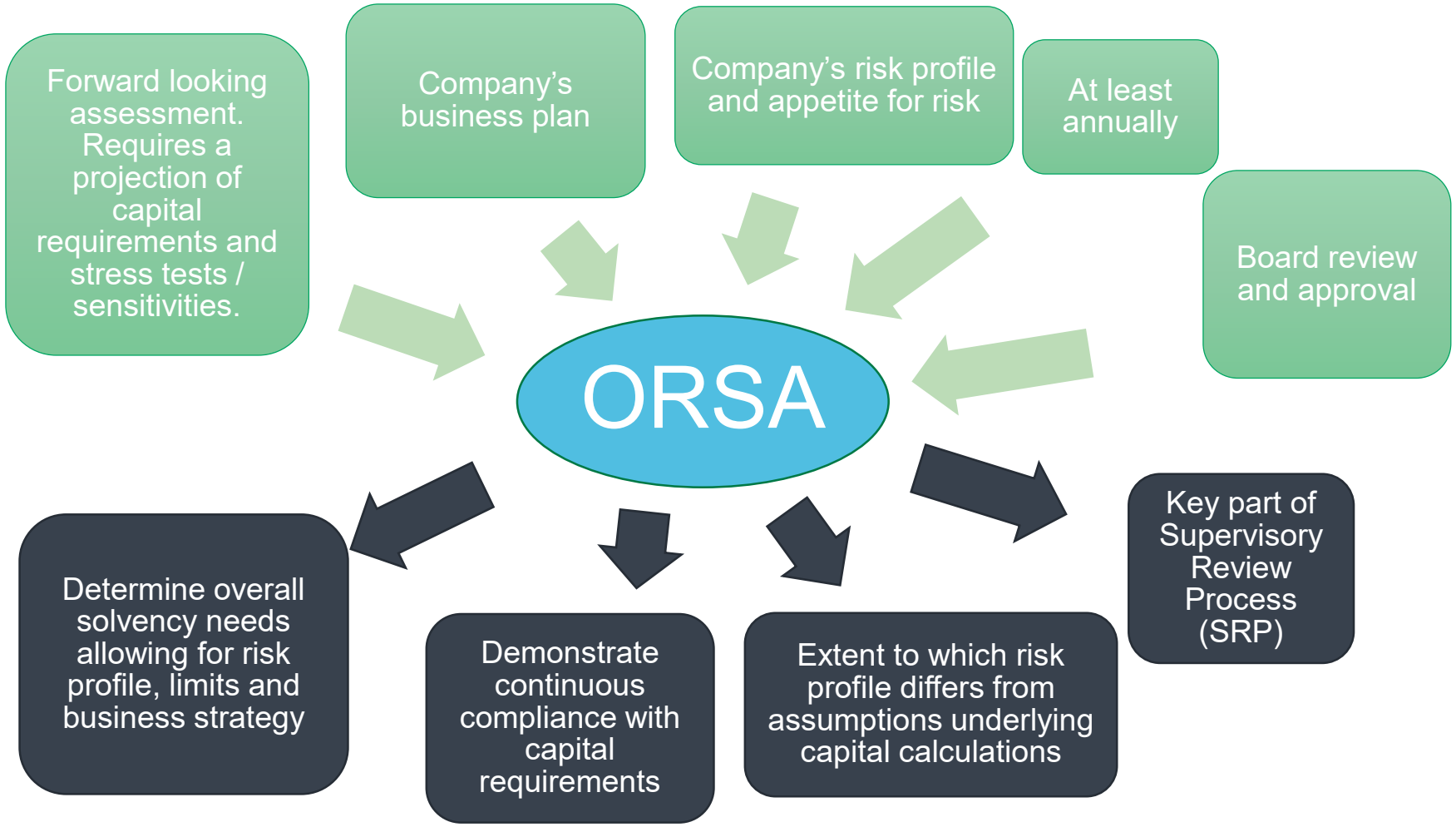
(i) identify, assess and measure;

(ii) monitor and control; and

(iii) where appropriate, mitigate;

all reasonably foreseeable, relevant and material risks to which the insurer is or may be exposed;

The Solvency II ORSA process



The Projections

Modelling the futures (basecase and scenarios)

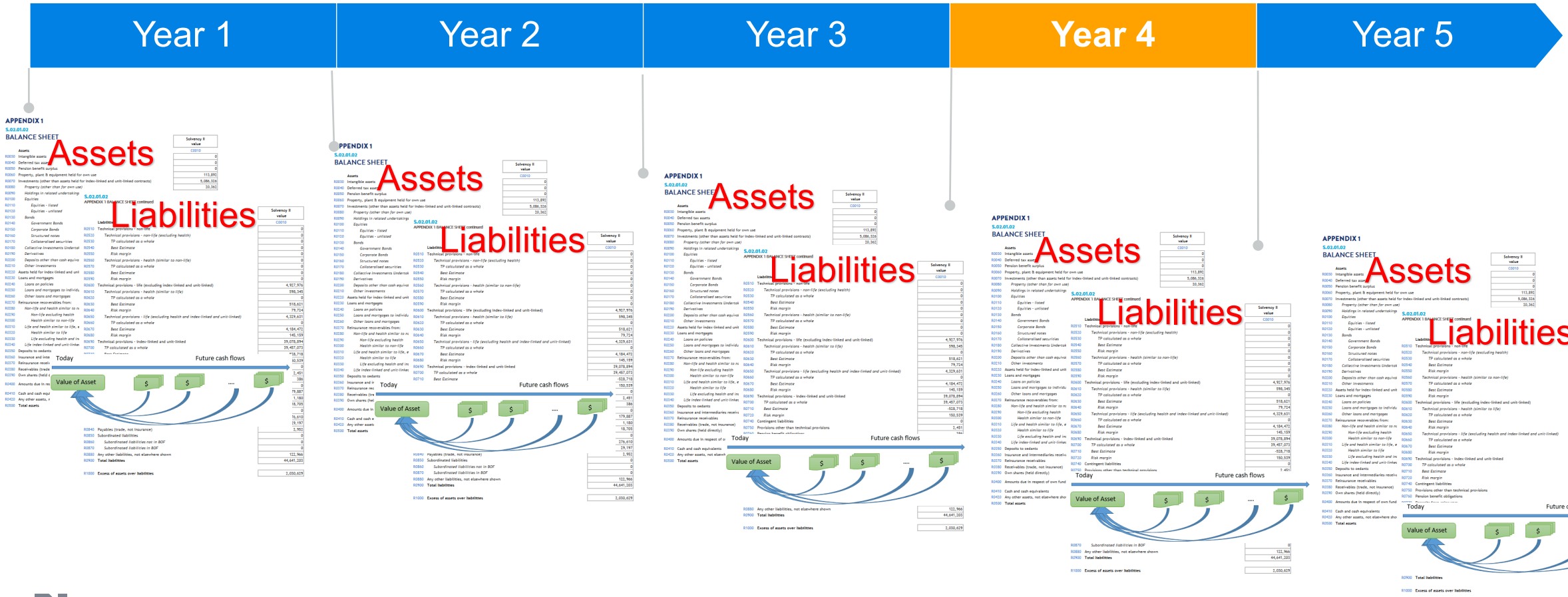
Projections piece of an ORSA

- Includes projection of economic balance sheet over the business planning horizon under a range of stresses and scenarios. From this the company determines its capital needs.

- ORSA is the entirety of the processes and procedures used to:
  - Identify, assess, monitor, manage and report the short and long-term risks a company is facing
  - Determine own funds necessary to ensure solvency

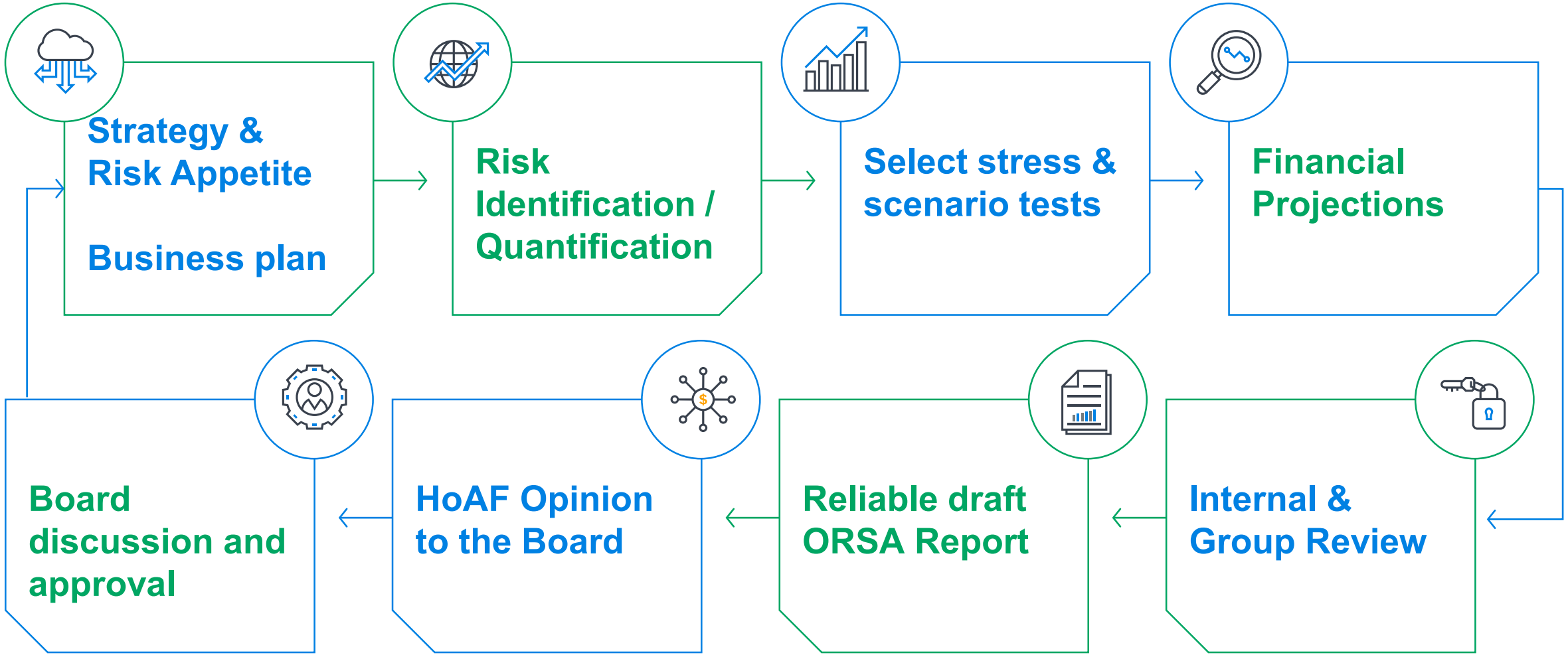
Projection of Balance Sheet

Capture results for multiple time periods



ORSA Process

The Irish approach to the ORSA projections



The Roles

Who “produces” the ORSA - Risk or Actuarial?

Risk Function

- Phase 1
  - Manage the ORSA process
  - Schedule it on Board and/or Risk Committee agenda
  - Ensure all have appropriate training
  - Draft policies with input from the Board
  - Assist with scenario selection

- Phase 2
  - Review the results
  - Draft the ORSA document
  - Communicate the results and assist in drawing conclusions

Role of Actuarial

- Give guidance to the Board
- Prepare and run the model
- Set assumptions (with the board)
- Prepare the results
- Communicate the results and assist in drawing conclusions
- Head of Actuarial Function Opinion on the ORSA (Ireland)

Role of the Board

- Board is responsible for the ORSA and must take an active part
- "Steering how assessment is to be performed" implies approval of
  - Plan for conducting ORSA
  - Key inputs to the ORSA
  - Process for performing ORSA
- "Challenging the results"
  - Discussion and challenge of results
  - Approval of results
- Must approve the ORSA policy
- Must approve the ORSA process and results
- Might appreciate a training session / workshop

Models

S.02.01.02

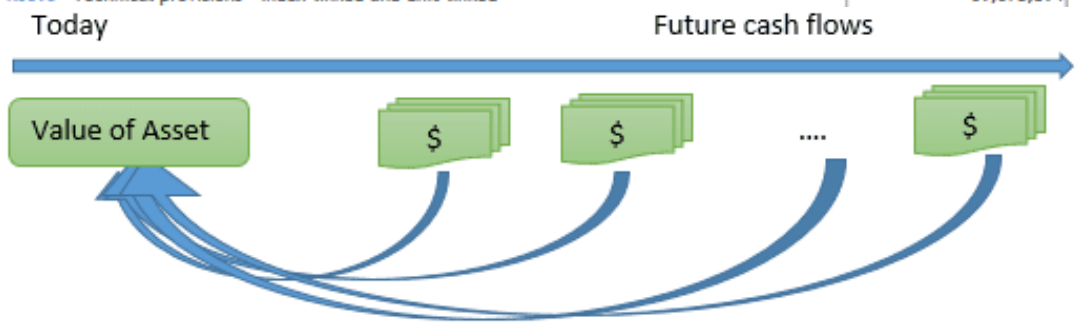
BALANCE SHEET

		Solvency II value
	Assets	C0010
R0030	Intangible assets	0
R0040	Deferred tax assets	0
R0050	Pension benefit surplus	0
R0060	Property, plant & equipment held for own use	113,892
R0070	Investments (other than assets held for index-linked and unit-linked contracts)	5,086,326
R0080	*Property (other than for own use)*	20,362
R0090	*Holdings in related undertakings, including participations*	63
R0100	*Equities*	43,146
R0110	*Equities - listed*	43,146
R0120	*Equities - unlisted*	0
R0130	*Bonds*	4,880,748
R0140	*Government Bonds*	2,885,085
R0150	*Corporate Bonds*	1,946,824
R0160	*Structured notes*	0
R0170	*Collateralised securities*	48,839
R0180	*Collective Investments Undertakings*	41,749
R0190	*Derivatives*	12,770
R0200	*Deposits other than cash equivalents*	87,486
R0210	*Other investments*	0
R0220	Assets held for index-linked and unit-linked contracts	39,601,854
R0230	Loans and mortgages	51,434
R0240	*Loans on policies*	1,644
R0250	*Loans and mortgages to individuals*	66
R0260	*Other loans and mortgages*	49,724
R0270	Reinsurance recoverables from:	1,530,496
R0280	*Non-life and health similar to non-life*	0
R0290	*Non-life excluding health*	0
R0300	*Health similar to non-life*	0
R0310	*Life and health similar to life, excluding index-linked and unit-linked*	1,508,214
R0320	*Health similar to life*	55,518
R0330	*Life excluding health and index-linked and unit-linked*	1,452,696
R0340	*Life index-linked and unit-linked*	22,282
R0350	Deposits to cedants	0
R0360	Insurance and intermediaries receivables	25,238
R0370	Reinsurance receivables	84,525
R0380	Receivables (trade, not insurance)	0
R0390	Own shares (held directly)	0
R0400	Amounts due in respect of own fund items or initial fund called up but not yet paid in	0
R0410	Cash and cash equivalents	66,957
R0420	Any other assets, not elsewhere shown	111,110
R0500	**Total assets**	46,671,832

S.02.01.02

APPENDIX 1 BALANCE SHEET continued

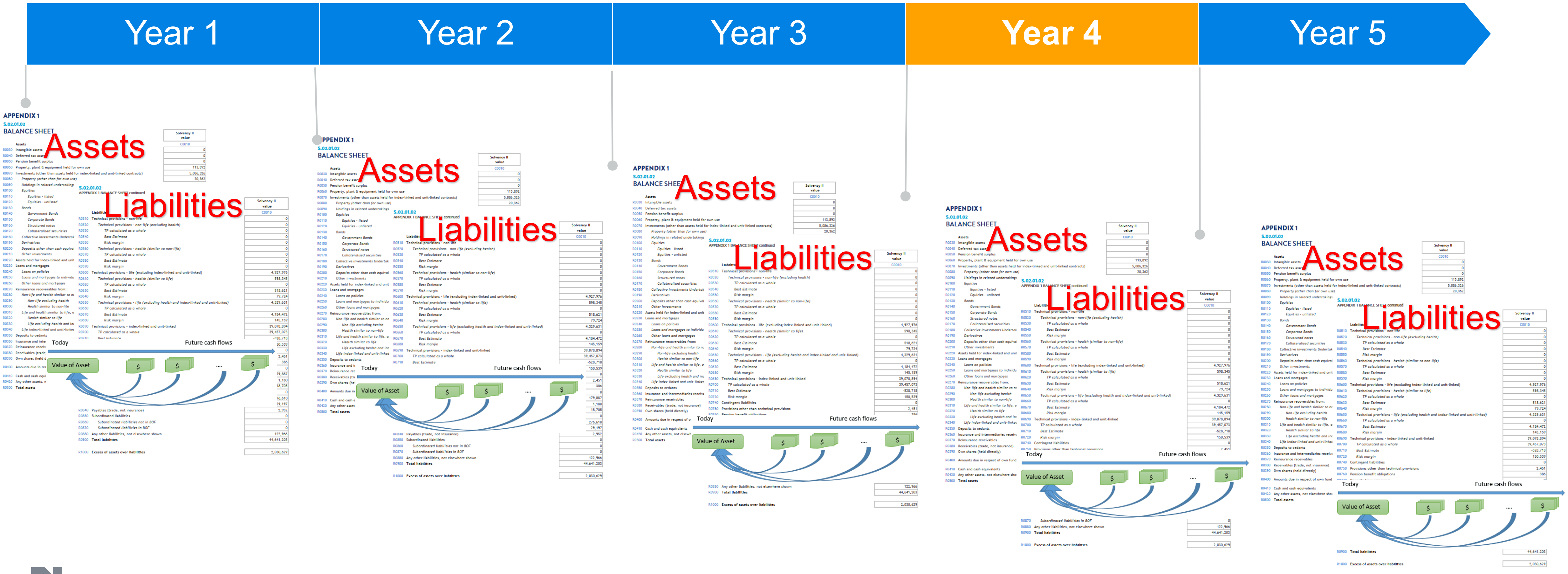
		Solvency II value
	Liabilities	C0010
R0510	Technical provisions - non-life	0
R0520	*Technical provisions - non-life (excluding health)*	0
R0530	*TP calculated as a whole*	0
R0540	*Best Estimate*	0
R0550	*Risk margin*	0
R0560	*Technical provisions - health (similar to non-life)*	0
R0570	*TP calculated as a whole*	0
R0580	*Best Estimate*	0
R0590	*Risk margin*	0
R0600	Technical provisions - life (excluding index-linked and unit-linked)	4,927,976
R0610	*Technical provisions - health (similar to life)*	598,345
R0620	*TP calculated as a whole*	0
R0630	*Best Estimate*	518,621
R0640	*Risk margin*	79,724
R0650	*Technical provisions - life (excluding health and index-linked and unit-linked)*	4,329,631
R0660	*TP calculated as a whole*	0
R0670	*Best Estimate*	4,184,472
R0680	*Risk margin*	145,159
R0690	Technical provisions - index-linked and unit-linked	39,078,894



R0820	Insurance & intermediaries payables	276,610
R0830	Reinsurance payables	29,197
R0840	Payables (trade, not insurance)	2,952
R0850	Subordinated liabilities	0
R0860	*Subordinated liabilities not in BOF*	0
R0870	*Subordinated liabilities in BOF*	0
R0880	Any other liabilities, not elsewhere shown	122,966
R0900	**Total liabilities**	44,641,203
R1000	**Excess of assets over liabilities**	2,030,629

Projection of Balance Sheet

Capture results for multiple time periods



Some other considerations

- Nested calculations of best estimate projection and reserving basis if different

- Projection of assets and rebalancing
  - Investment income and how this is split going forward
  - Funds maturing, how reinvested
  - New business asset mix

- How to project capital requirements?
  - SCR calculation at each time step

- Tax treatment
  - Deferred tax asset, deferred tax liability
  - Recoverability
  - IFRS profits

All Models don’t have to be beautiful

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Models

- Your models will be too complicated
  - Asset rebalancing
  - Full capital requirement projections
- Rip it up and put it in the bin
- Simple to use business forecasting tool.
  - Quicker to set up
  - More flexible, will allow better scenarios
  - Means you can understand it intuitively
- You don’t need complete precision – you need to get the appropriate insights and give messages to the Board.

Scenarios

Development of Scenarios

Year 1

- Lots of scenarios to choose from
- Cover some of the basic ones first

Year 2

- Getting into some of the more specific items now
- Do you repeat the scenarios from last year?

Year 3

- Getting a bit stale?
- How much effort being put into scenario workshops?

How many to keep from year to year?

Scenarios – different types

Full projection	Shorter projection	Point in time stress	
Scenario Analysis	Sensitivity Testing	Stress Test	Reverse stress test
Economic assumptions	Market shocks	Persistency/ Decrements	Sales levels

Scenarios – different types

Operational risk event	Cyber risk events	Counterparty	
Reinsurance strategy	Maximum loss scenarios	Reputational damage	
Closure to new business	Change of strategy (product, M&A)	Recovery plans	Management actions

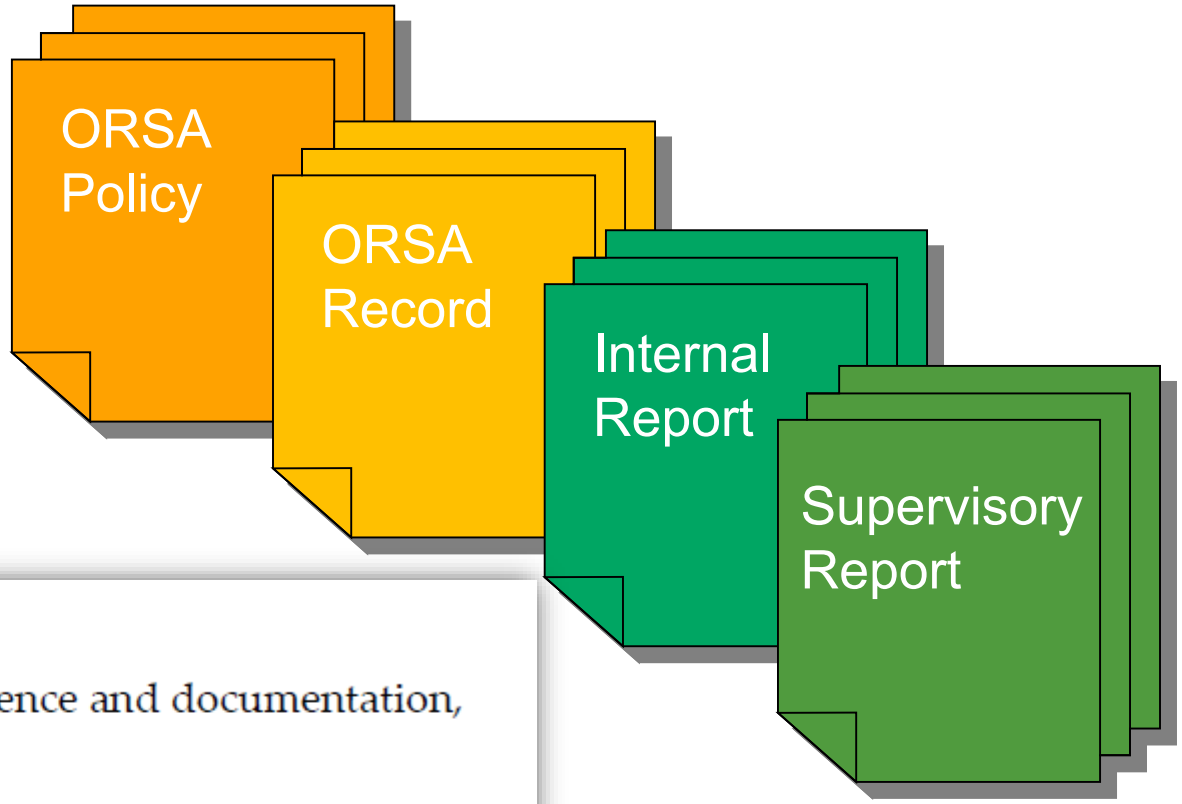
Using it

- Compliance activity
  - Not really a tool for good
  - Same style scenarios each year
  - No real insights gathered

- Replaces business planning
  - The ORSA is your business planning process
  - Check capital before make decisions
  - Collect scenarios as you go through the year (“Lets add that to the ORSA”)
  - Use it to create strategy

Documentation and Reporting

Range of documents



Records

An insurer's ORSA must be supported by suitable evidence and documentation, including its—

(a) ORSA policy (including the matters referred to in paragraph 5);

(b) record of each ORSA (including the matters referred to in paragraphs 6 and 7 and sub-paragraph 8(2)); and

(c) report for each ORSA (including the matters referred to in paragraph 8).

ORSA Documentation

1. An ORSA policy

- Description of processes and procedures
- Link b/w risk profile, risk limits and solvency needs
- Stress and sensitivity tests

2. A record of each ORSA process

- Sufficient detail to enable knowledgeable third
- party to understand and replicate ORSA
- Record input data, assumptions, output and how this was arrived at.

ORSA Documentation

3. 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

4. An ORSA supervisory report

- Can be the same document as the internal report

ORSA Reporting

- **ORSA Supervisory Report** contains:
  - Qualitative and quantitative results and conclusions
  - Methodology and assumptions
  - Comparison of solvency needs to regulatory capital and own funds
  - Information on risks not reflected in the SCR
- **Public disclosure (SFCR)**
  - A description of the process
  - How integrated into organisational structure and decision making process
  - Frequency reviewed and approved by the Board
  - How own solvency needs are determined, and how capital management activies and risk management system interact
- **Private disclosure (RSR)**
  - How performed, documented and reviewed
  - How integrated into management and decision making process

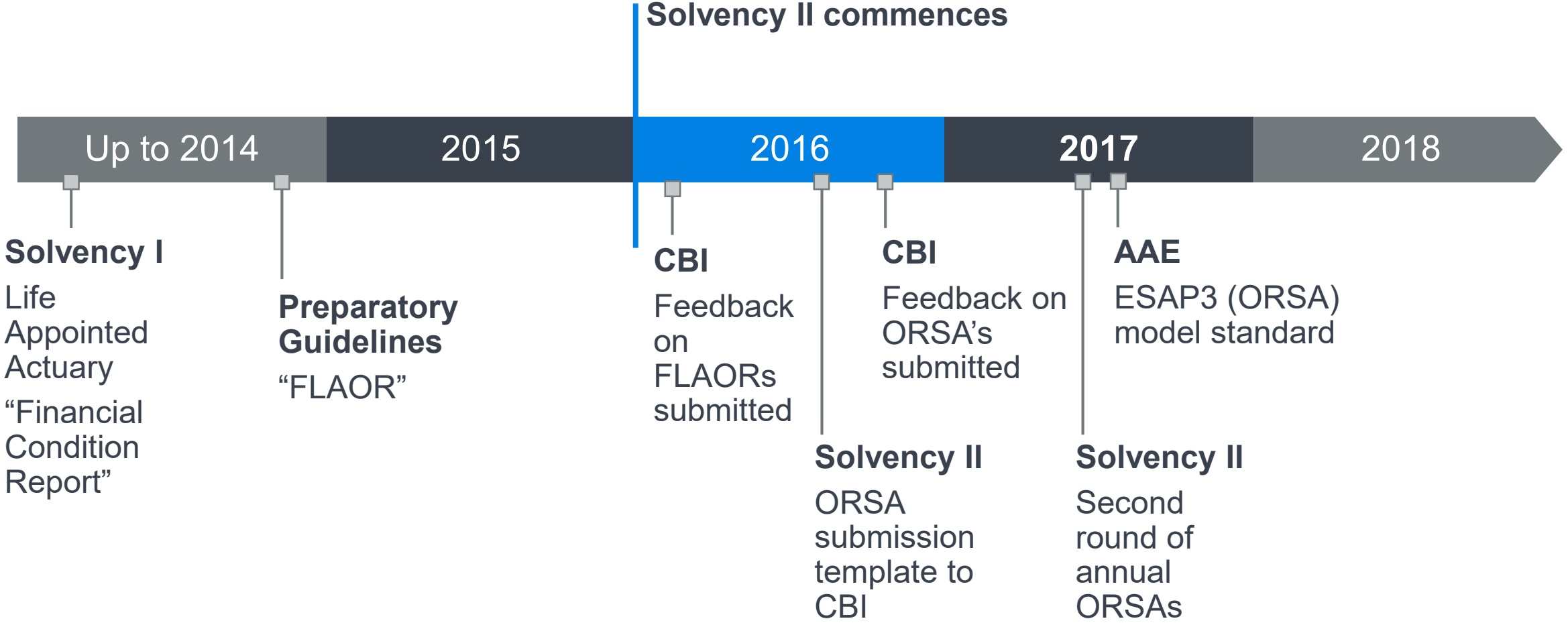
The reality

- Different to how I expected it to be!
- There is an ORSA policy
  - Draft once
  - Minor edits in the annual review
  - Typically not specifically reviewed while doing the ORSA
- There is (almost always) no separate “record of the ORSA process”
- There is one document which is the “record of the ORSA process” and the “internal report” and the “supervisory report” all in one.

What the regulator might say

Timeline on ORSA development in Ireland

Regulatory priority since 2014



ORSA – lessons from 2014 (2 years before implementation)

- 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

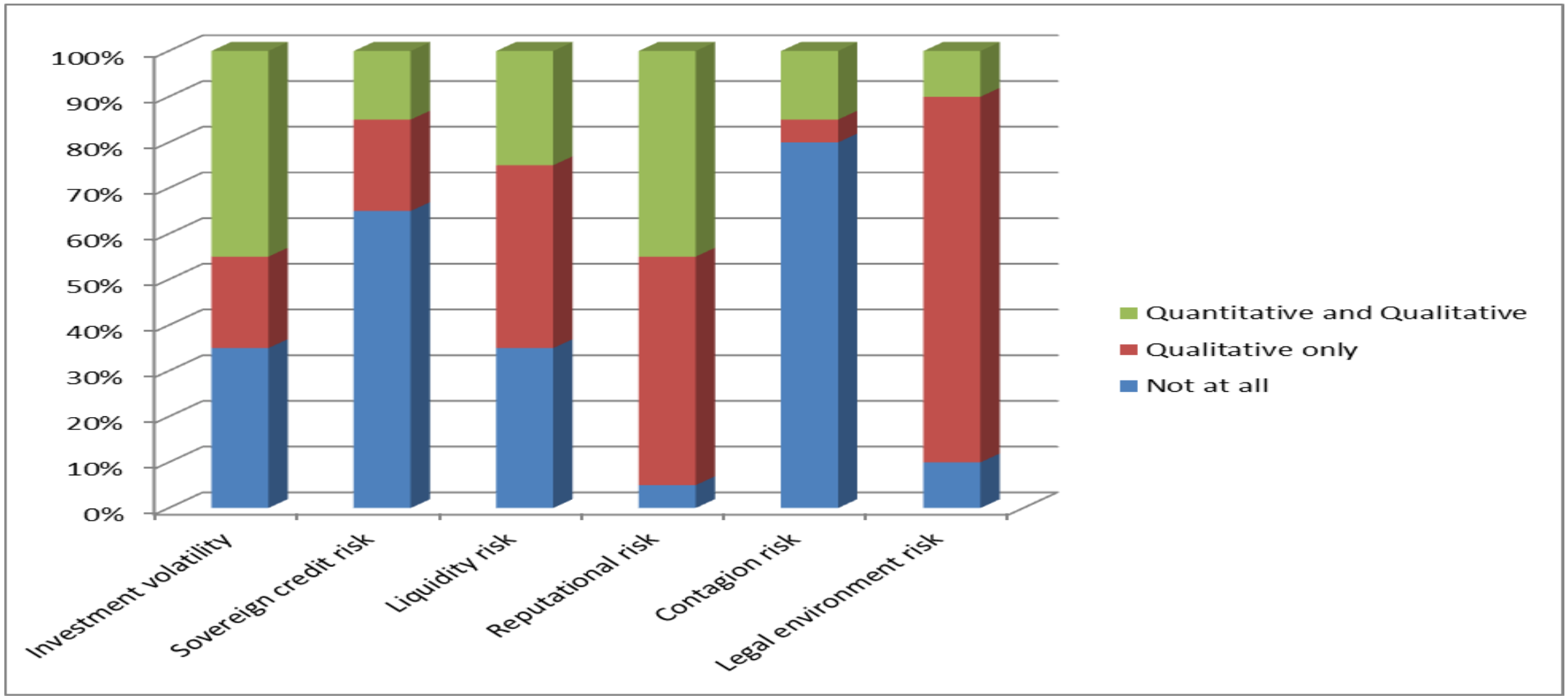
- Board ownership – "so-called use test"
- Process as important as the document
- Address capital needs – Company own view (not just repeat the Standard Formula)

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

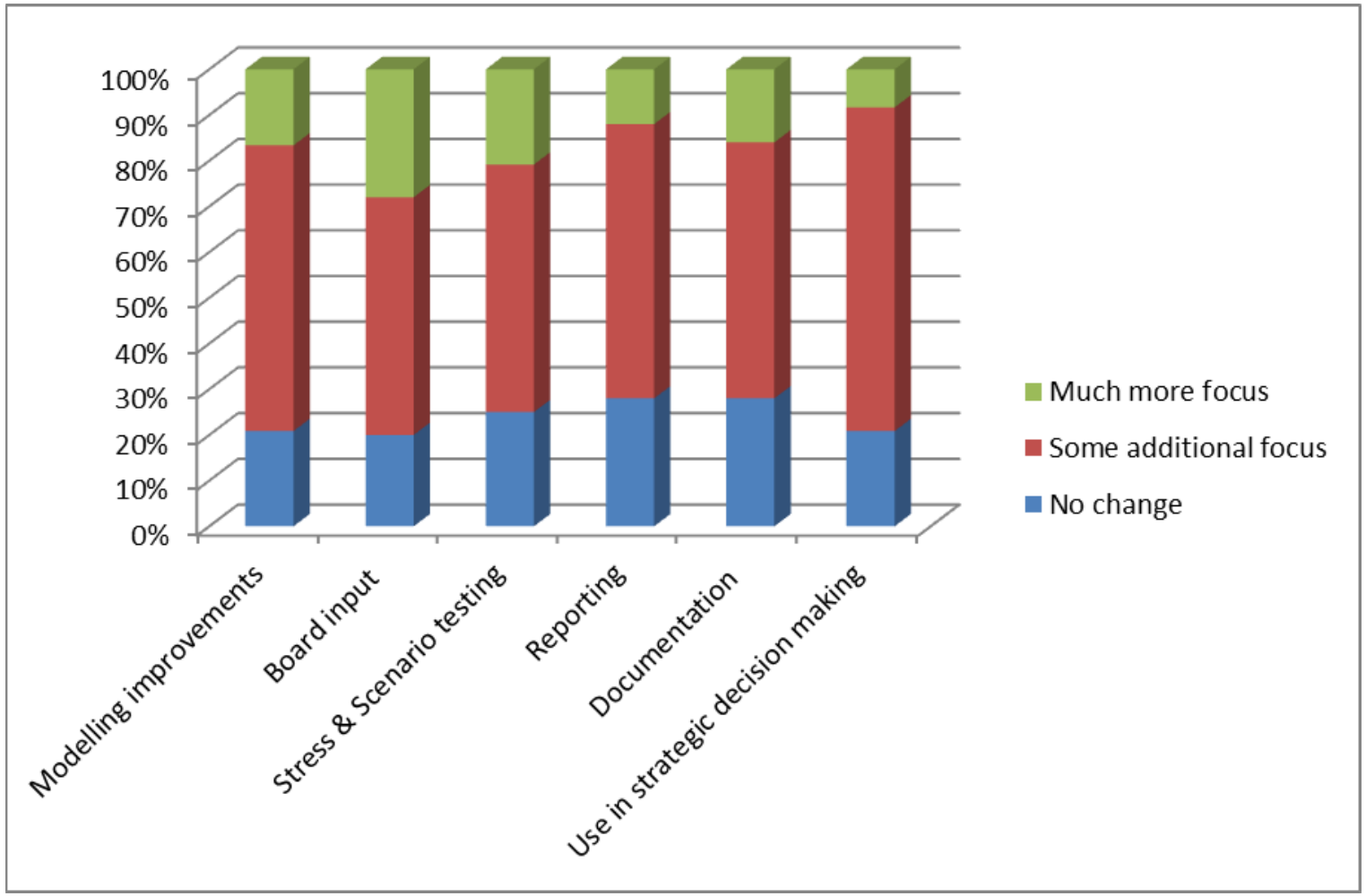
Extra risks not covered by Standard Formula

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



ORSA - 2015 Improvements

Milliman client survey 2014

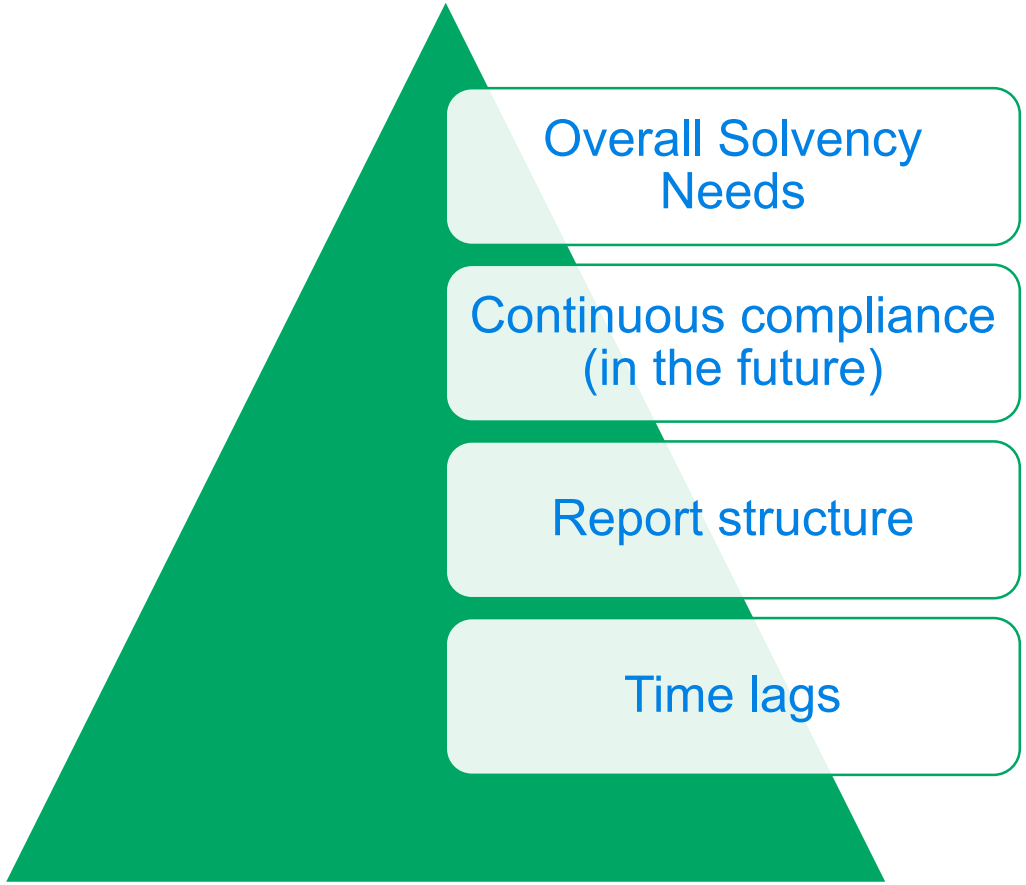


Milliman

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.

Head of Actuarial Function Opinion on the ORSA

- As part of the Domestic Actuarial Regime (which requires a Head of Actuarial Function to sign off on reserves), a specific role for the HoAF was created:

Outcomes & Adding value

Outcomes from the ORSA

- **Better understanding of risk and capital requirements**

Board understand all aspects and implications for business	Results and conclusions communicated to staff where relevant	Identify new risks Better assessment of risks

- **Use the results!**
  - The undertaking should take the results of the ORSA and the insights gained in the process into account at least for the system of governance including long term capital management, business planning and product development and design

Other Possible Outcomes

- **Internal capital may be different to SCR**
  - Different confidence level (might target rating – higher confidence level)
  - Risk profile different to assumptions underlying SCR (e.g. operational risk?)
  - Time horizon might differ

- If different, capital measure also required to calculate 99.5% one-year VAR?

- **If ORSA produces different capital requirement to SCR**
  - Explain and identify
  - Not necessarily a capital add-on

- **Other considerations**
  - Risk profile and risk interactions
  - Culture & decision-making
  - Emerging risk
  - Prospective solvency
  - ERM Framework

Group ORSA – Solvency II

- In summary, groups need to prepare either a:

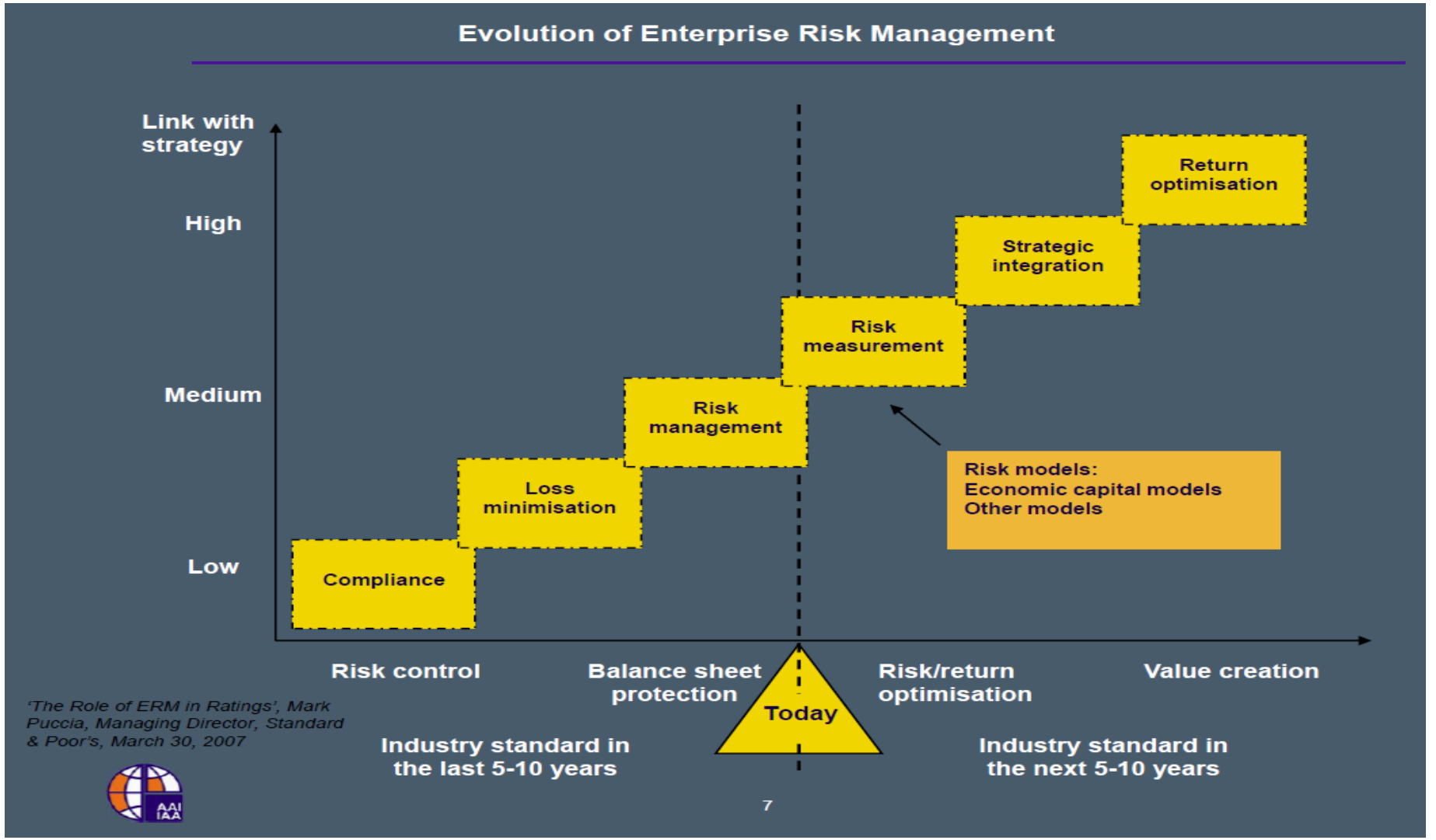
(a) Solo ORSA for each subsidiary + a group ORSA, or

(b) Single ORSA including the subsidiaries (group-wide ORSA)

- Need to receive agreement from the group supervisor
  - requires a high level of consistency in risk management processes across the group
  - evidence of full compliance with the ORSA requirements at both the subsidiary and group level.

- Guideline 19 from the EIOPA ORSA guidelines, which covers the requirements for a single ORSA document, notes that in the application to submit a single group-wide ORSA document the group should provide an explanation on how the subsidiaries are covered and how the subsidiaries' board is involved in the assessment process and approval of the outcome.

Evolution of ERM



Appendix 1 – Appropriateness of SCR

Assessing the appropriateness of the standard formula

- All Irish insurance undertakings are required to perform an assessment of the appropriateness of the standard formula as part of their ORSA

- EIOPA guidelines suggest a two step process:
  - First step is a qualitative assessment of risks
  - If the qualitative assessment indicates a significant deviation is expected then a quantitative assessment is required

- Assessment of appropriateness must cover:
  - Risks to which the undertaking is exposed which are not reflected in the standard formula
  - Risks covered by standard formula which are either understated or overstated relative to the undertakings risk profile

Process for qualitative assessment

Risks covered by standard formula	Uncovered risks
Rank each risk under standard formula based on capital charge	Identify all uncovered risks e.g. Inflation risk, reputation risk, liquidity risk
Compare each risk to the assumptions underlying the standard formula calculations	Nothing to compare to so focus is on scale of exposures and risk mitigation in place
If a significant deviation is identified then must perform quantitative analysis	If cannot demonstrate uncovered risk is immaterial then must perform quantitative analysis

Quantitative assessment

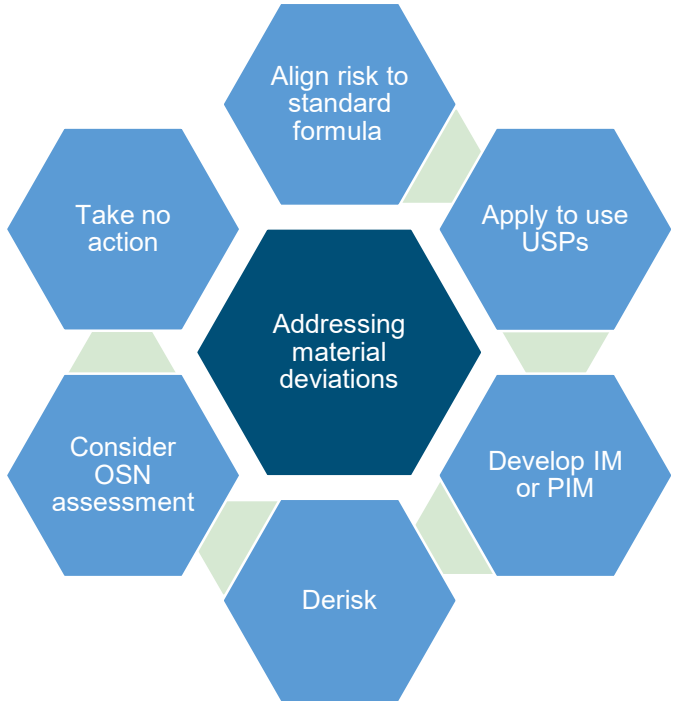
- Only required where “significant deviation” identified in qualitative assessment
- In practice, difficult to assess whether significant without carrying out quantitative assessment
- Once identified need to recalculate capital charges with shocks consistent with undertakings risk profile
- In essence need to re-calibrate the 1-in-200 shock, not straightforward but adjusting standard formula shocks good place to start
- Sensitivity testing useful to gauge materiality
  - Examine impact on SCR of changing a parameter in standard formula
  - Or changes to risk profile e.g. diversification or risk mitigation

Quantitative assessment – operational risk

- Difficult to adjust standard formula shocks for operational risk
- Factor based calculation based on expenses, technical provisions and premiums
- Makes no allowance for operational risk management
- Many undertakings will likely identify deviations as a result
- Number of undertakings developing operational risk models to calculate capital charge independent of standard formula e.g. Bayesian network models, Markov-chain Monte-Carlo etc.

Response to material deviations

- Likely CBI will engage undertakings with significant deviations
- Key concern for companies is capital add-on
- Directive states capital add on can be imposed if risk profile deviates from that underlying standard formula



Overlap with own solvency needs assessment

- Some overlap between quantitative assessment in assessment of appropriateness and the OSN assessment

- But ultimately the OSN assessment has broader scope, may make adjustments to:
  - Confidence intervals
  - Time horizons
  - Contract boundaries
  - Yield curve adjustments
  - Management actions etc.

Appendix 2 – Board Checklist

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)?

Appendix 3 – Risk/Actuarial Checklist

Practitioner Checklist

1. Adequacy of Risk Management
2. Forecasting
    1. Regulatory capital
    2. Liquidity
3. Risk profile deviation from assumptions underlying the regulatory capital requirements

1. Role of the Board
2. Use Test (Integration)
3. ORSA Policy
4. Forecasting
    1. Projection Period
    2. Ad-hoc ORSA
    3. Risks included (and changes)
    4. Adverse scenarios
    5. Own Funds composition
    6. Valuation bases
5. Reports
    1. Types
    2. Content – Conclusions & information