Solvency II: where are we now – where are we going

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17 April 2015

Webinar

Agenda

1. Introduction
2. Where are we now?
   - status of regulation
3. Where are we going?

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1. **Introduction**
2. **Where are we now?**
   - **status of regulation**
3. **Where are we going?**

European Union 2015: 28 member states , 28 different sets of rules

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European Union 2015: 28 member states , 28 different sets of rules

EU enlarged gradually.

- Despite early approaches to harmonise insurance laws and Solvency requirements, significant differences can still be observed.
- Taxation laws, statutory accounting principles etc. led to different product portfolios
- Altogether caused different capital requirements in different countries

Weakness of Solvency I

Low risk sensitivity of the prudential regime

The capital requirements set out by Solvency I

- were not forward-looking and a number of risks, including
- market, credit and
- operational risk,

were not adequately captured.

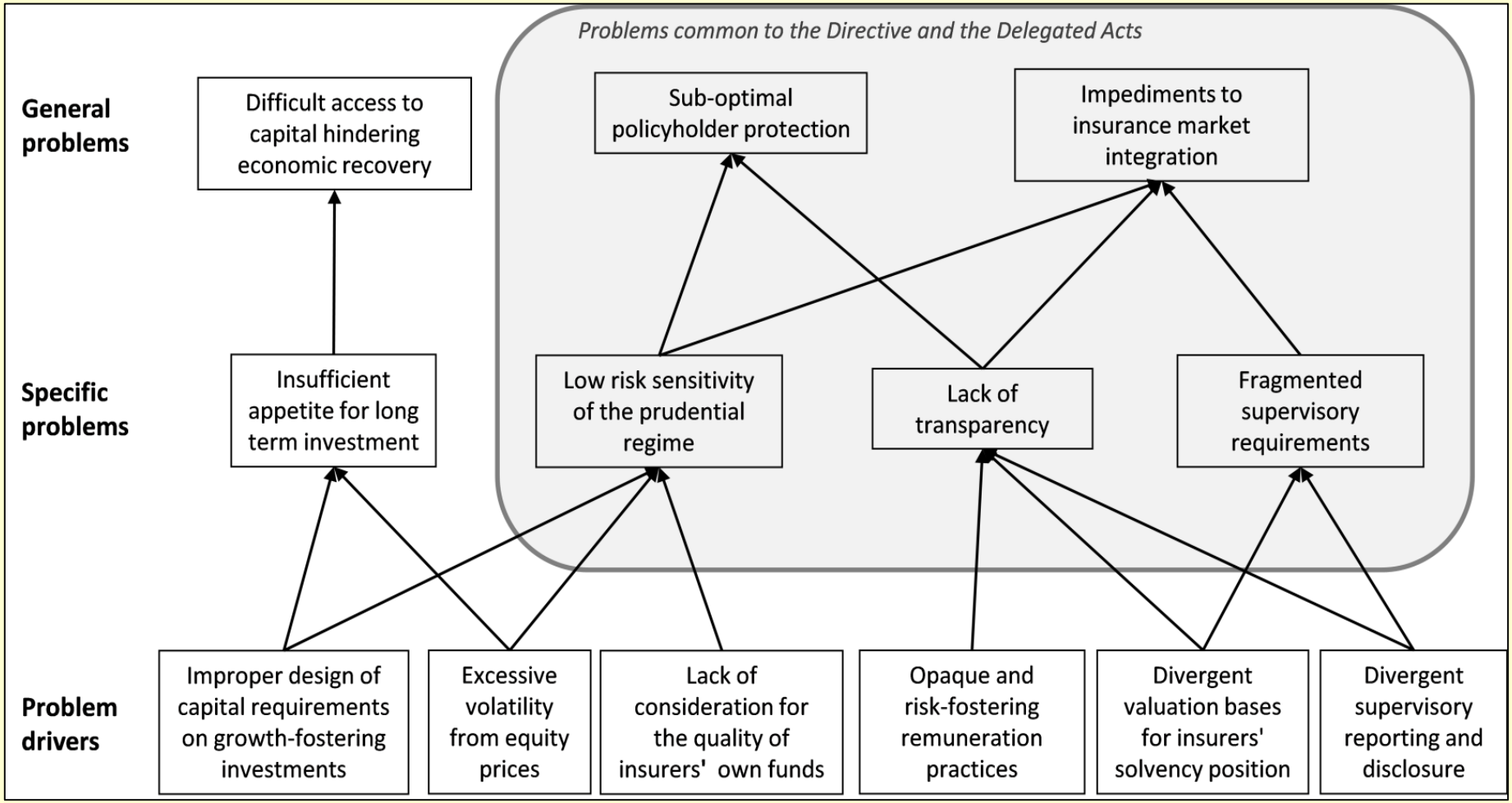
Level 1 impact assessment:
EIOPA's survey on failed insurers and 'near-misses' from 2005:
in more than 75% of the cases examined, the reported solvency ratio up to one year before failure was more than 100%, and in 20% of the cases, the reported ratio was over 200%.

As a result, Solvency I did

- not accurately reflect the true financial state of insurers and reinsurers,
- did not focus on the actual drivers of insolvency and
- did not give the right incentives to insurers to manage risks.

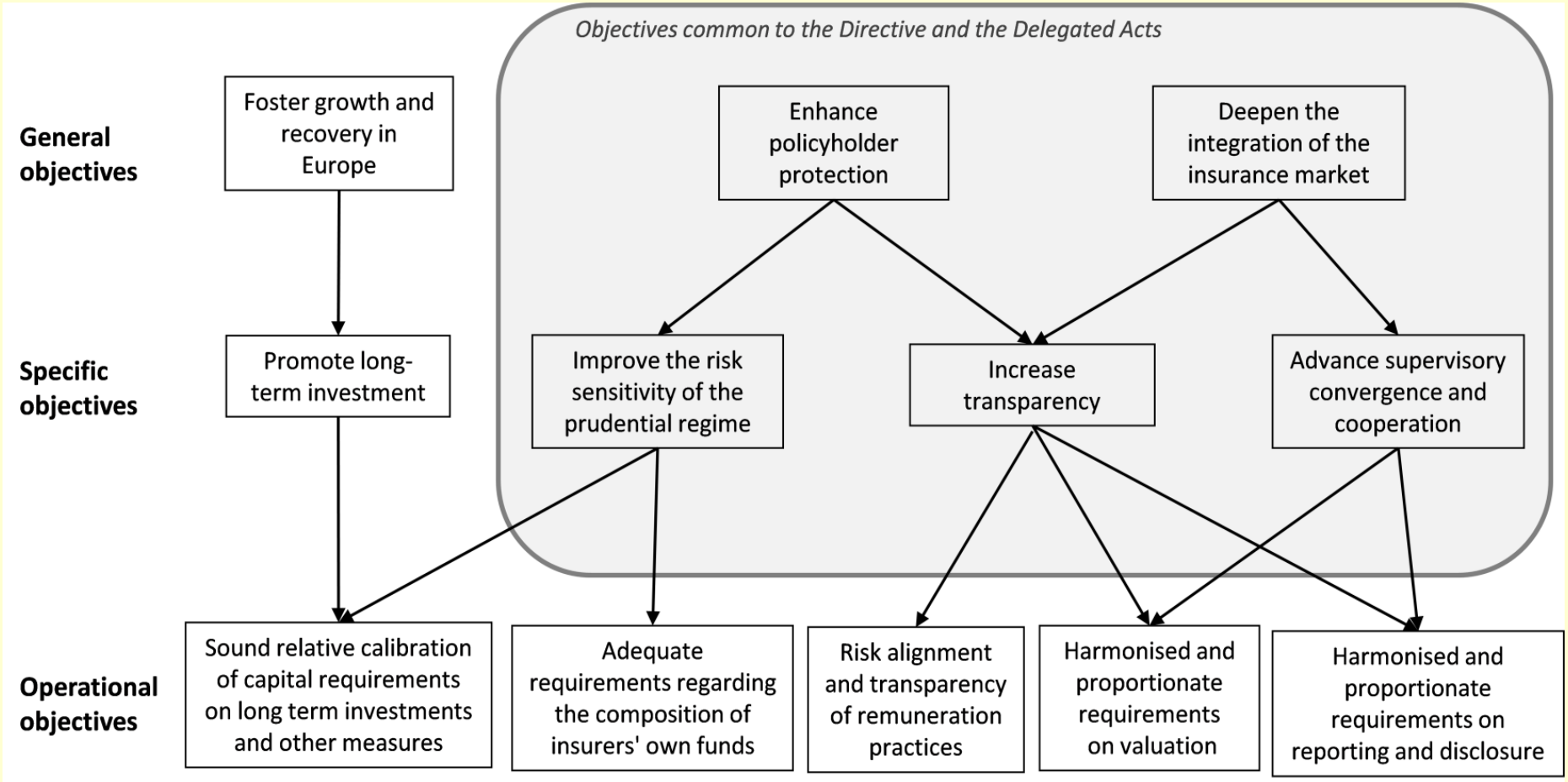
This further means that the optimum level of policyholder protection is not achieved under Solvency I.

Identified weaknesses „Problem tree“



IMPACT ASSESSMENT REPORT Accompanying the proposal for COMMISSION DELEGATED REGULATION (EU) Supplementing directive 2009/138/EU of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

„Objectives tree“



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Goals of Solvency II

DIRECTIVE 2009/138/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

Goals:

- Facilitate the taking-up and pursuit of insurance activities
- Eliminate most serious differences between the laws of the member states (proper functioning of the internal market)
- Making it easier for undertakings with head offices in the EC to cover risks therein (citation (2))
- Establishing coordinated rules related to supervision of insurance groups (citation (3))
- An economic risk-based approach should be adopted
- Harmonisation should be increased by providing specific rules for the valuation of assets and liabilities, including technical provisions.

Solvency II Regime

A framework has to be developped to achieve these goals

Chosen Structure:

Three Pillar model

Chosen Process:

Started with a Lamfalussy process

Lisbon treaty of the EU changed legal basis in 2011

Goals:

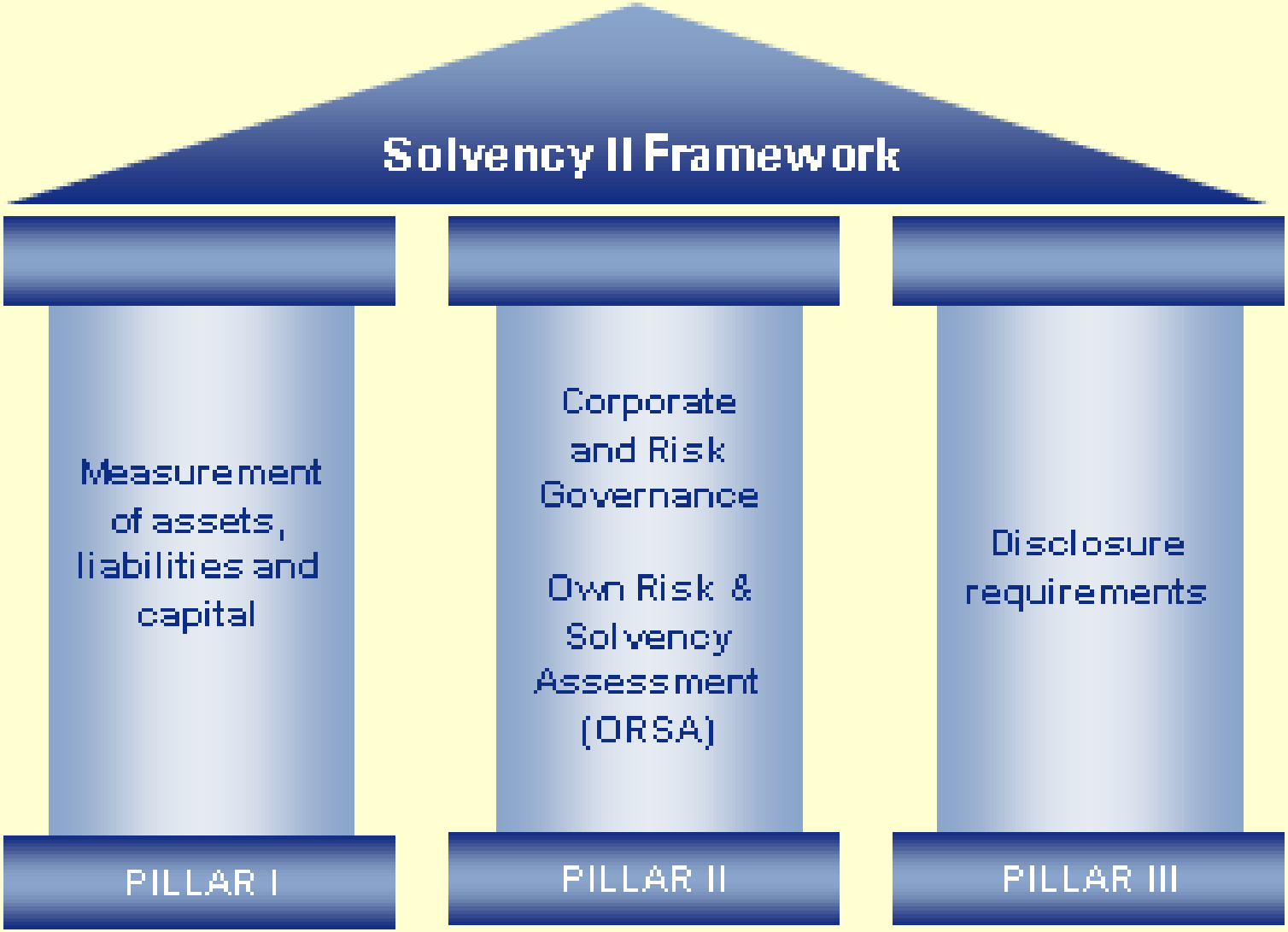
Single rule book

Solvency Balance sheeet

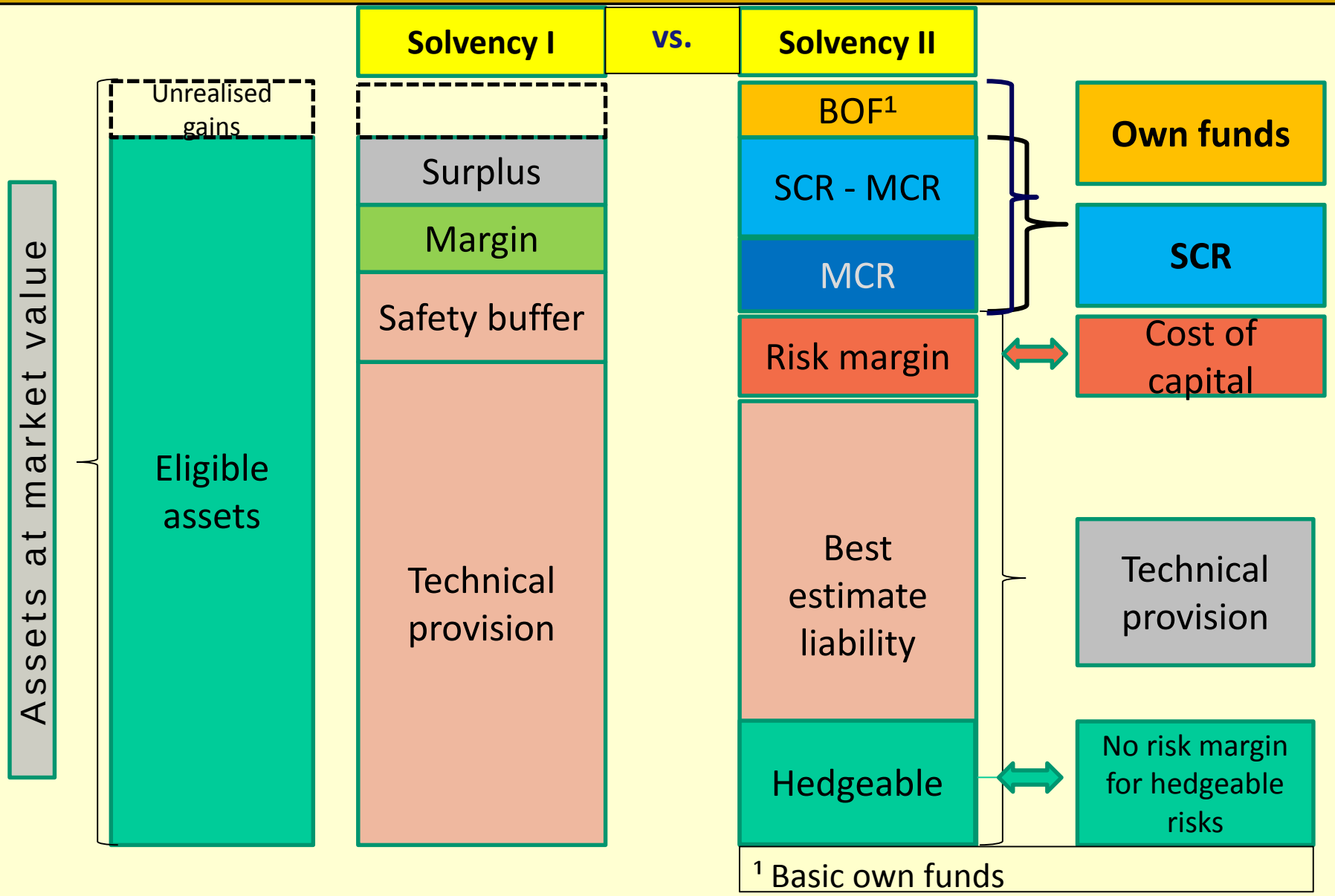
99,5 Value at risk

Market consistent valuation of assets and liabilities

Three Pillar model of Solvency II



Solvency Balancesheet



SCR - Solvency Capital Requirements

Capital Requirements

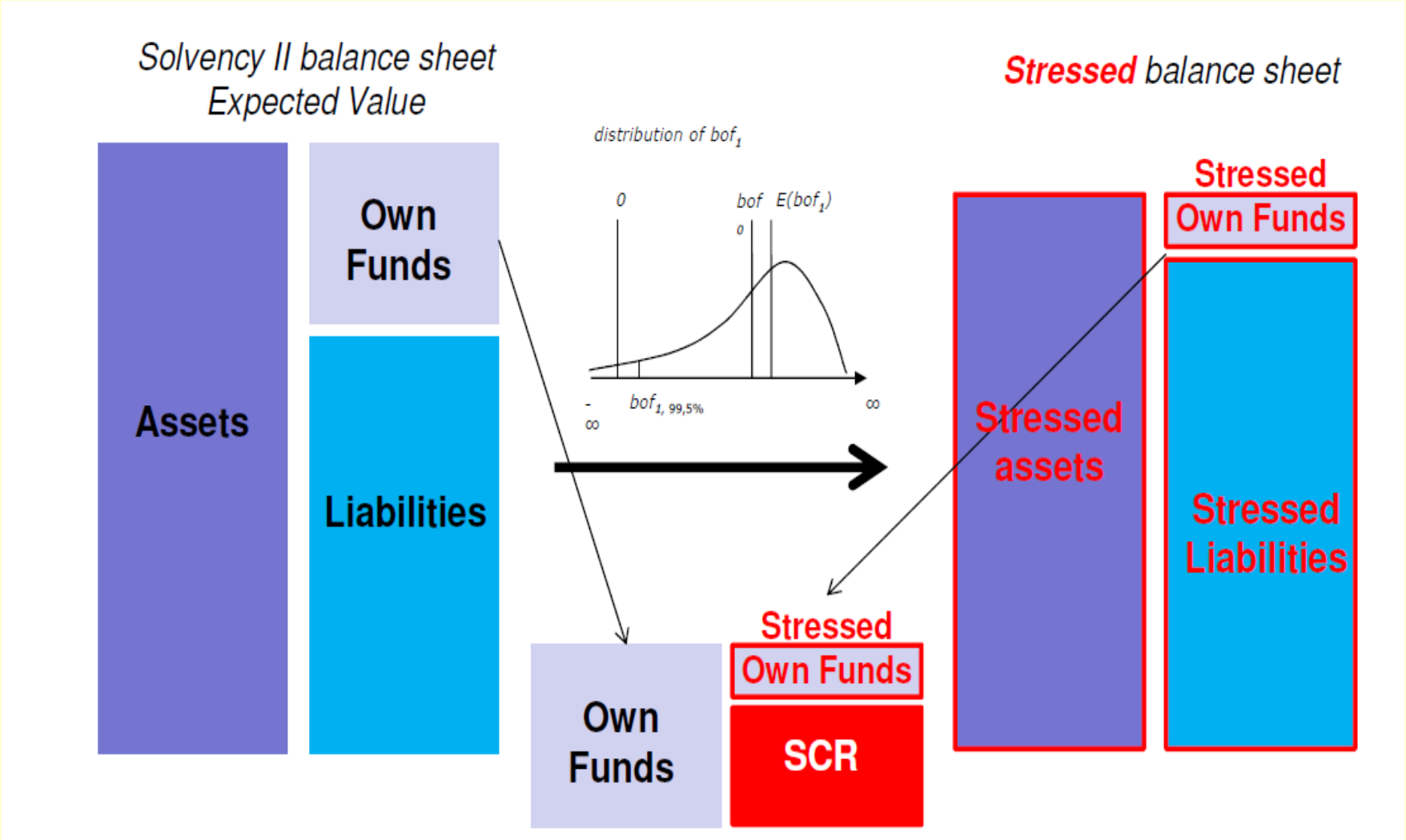
SCR

"shall correspond to the own funds an insurer needs to have in order to survive the worst of 200 possible business years (in technical terms, the Value-at-Risk of the undertaking's basic own funds subject to a confidence level of 99.5 % and a time horizon of one year).

The SCR should cover all quantifiable risk to which the undertaking is exposed, at least

- underwriting risk,
- market risk,
- credit risk and
- operational risk."

SCR - Solvency Capital Requirements



EIOPA -14-322: **The underlying assumptions in the standard formula for the Solvency Capital Requirement calculation (25. July 2014)**

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Reorganisation of Supervisory Authorities

The **European Insurance and Occupational Pensions Authority (EIOPA)** is a EU financial regulatory institution that replaced the Committee of European Insurance and Occupational Pensions Supervisors (**CEIOPS**).

CEIOPS was replaced in January 2011. The reorganisation of macro and microprudential supervisory authorities led to the creation of **three new European watchdogs**

- the European Banking Authority - EBA,
- the European Insurance and Occupational Pensions Authority - EIOPA, and
- the European Securities and Markets Authority –ESMA

have replaced the previous EU committees responsible for financial market services with only consultative competences

http://en.wikipedia.org/wiki/European_Insurance_and_Occupational_Pensions_Authority

Solvency Regulation: Hierarchy of regulation

TFEU (Treaty on the functioning fo the EU) and
EIOPA Regulation (EU) **1094/2010** define next steps

Guidelines
EIOPA-Reg. Art. 16 Nr. (25)

Level 3

RTS
Regulatory Technical Standards
EIOPA-Reg. Art 10, TFEU, Art. 290

ITS
Implementing Technical Standards
EIOPA-Reg.Art 15, TFEU, Art, 291

Level 2.5

Delegated Acts
COMMISSION DELEGATED REGULATION (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

Level 2
18 January 2015
TFEU Art. 290

Directive 2014/51/EU ('Omnibus II')
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 amending Directives 2003/71/EC and 2009/138/EC and Regulations (EC) No 1060/2009, (EU) No 1094/2010 and (EU) No 1095/2010 …

Directive 2009/138/EC ('Solvency II')
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

Level 1
22 May 2014

Omnibus II Directive

The Solvency II Framework Directive (2009) on the financial position of insurance undertakings had to be adapted in response to:

- New architecture for its implementing measures introduced in the Lisbon Treaty (2009)
- New financial supervision measures introduced in Regulation 1094/2010 (EIOPA Regulation) establishing the European Insurance and Occupational Pensions Authority (EIOPA)
- **Distortion in capital markets (EU-Crisis, Lehmann,…) showed the need for a change in technical details (e.g. risk free interest rate)**

Omnibus II Directive

Besides the changes caused by the Lisbon Treaty several supervisory measures related to the valuation of long term business are now part of the Omnibus II Directive

a) Extrapolation of interest rate term structure (**Art. 77a**)
b) Matching Adjustment (**Art. 77b, c**)
c) Volatility Adjustment (**Art. 77d**)
d) Transitional rules for backbook (16 years)
   i. dynamic (**Art. 308c**)
   ii. static (**Art. 308d**)
e) Recovery Period extended to 7 years (**Art. 138**)

19

Level 2: Delegated Acts

17 January 2015: Publication in the Official Journal of the EU

(based on 76 empowerments in the Directive, partially affected by the „sunrise clause“)

“Sunrise clause”:

Until 31 December 2018 The Commission is empowered, to adopt the RTS in accordance with the procedure for the adoption of delegated acts, instead of the procedure set out in the EIOPA founding Regulation (see Recital (16) of the Omnibus II Directive and Article 308b).

Implication for legislative procedure:

The main delegated act is based on a total of 76 empowerments in the Solvency II Directive, including some which are in principle for EIOPA to develop draft RTS but fall within the scope of the 'sunrise clause'.

Treaty on the Functioning of the European Union (TFEU)

Article 290

1. A legislative act may delegate to the Commission the power to adopt non-legislative acts of general application to supplement or amend certain non-essential elements of the legislative act.

   The objectives, content, scope and duration of the delegation of power shall be explicitly defined in the legislative acts. The essential elements of an area shall be reserved for the legislative act and accordingly shall not be the subject of a delegation of power.

2. Legislative acts shall explicitly lay down the conditions to which the delegation is subject; these conditions may be as follows:

(a) the European Parliament or the Council may decide to revoke the delegation;

(b) the delegated act may enter into force **only if no objection has been expressed by the European Parliament or the Council** within a period set by the legislative act.

   For the purposes of (a) and (b), the European Parliament shall act by a majority of its component members, and the Council by a qualified majority.

3. The adjective "**delegated**" shall be inserted in the title of delegated acts.

Legal framework
Based on TFEU and EIOPA Regulation

Regulatory Technical Standards (RTS)

Standards for the consistent harmonisation of rules in EU legislative acts. (→ „Sunrise Clause“ until 2018)

Implementing Technical Standards (ITS)

Standards for the uniform application of legally binding EU acts.

Areas to be covered, as proposed in the Omnibus II Directive, are:

- uniform reporting templates
- harmonised technical input to the standard formula
- harmonised procedures and templates for cooperation
- the exchange of information between supervisory authorities

Guidelines

EIOPA can issue guidelines to supervisors and undertakings which are not legally binding, but comply or explain option

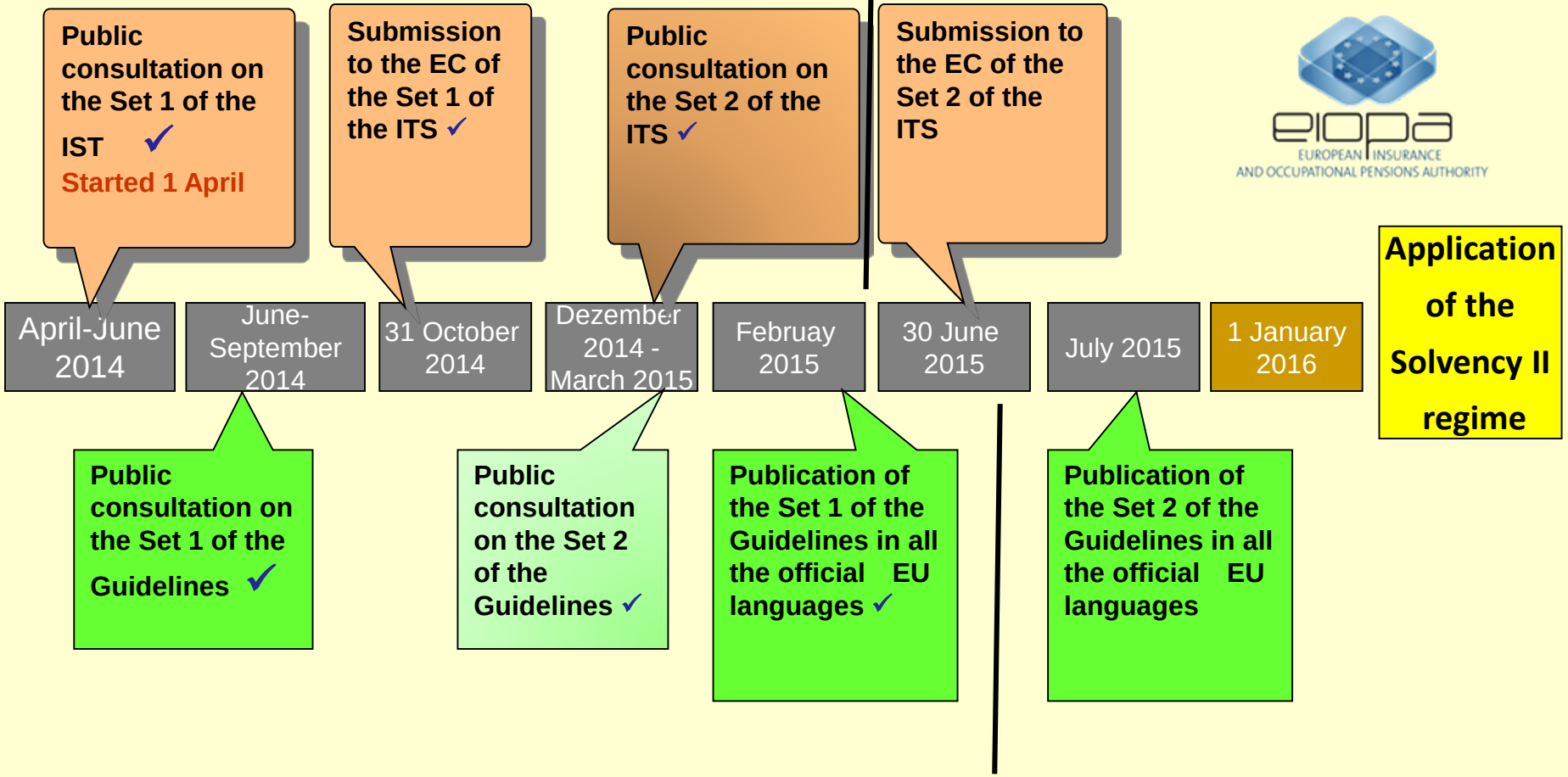
EIOPA (published 31. 1. 2014) : Timeline for outstanding regulations

Timeline:

April – June 2014	Public consultation on the Set 1 of the ITS
June – September 2014	Public consultation on the Set 1 of the Guidelines
31 October 2014	**Submission to the EC of the Set 1 of the ITS**
December 2014 – March 2015	Public consultation on the Set 2 of the ITS
December 2014 – March 2015	Public consultation on the Set 2 of the Guidelines
February 2015	**Publication of the Set 1 of the Guidelines in all the official EU languages**
30 June 2015	Submission to the EC of the Set 2 of the ITS
July 2015	Publication of the Set 2 of the Guidelines in all the official EU languages
1 January 2016	Application of the Solvency II regime

EIOPA: Timeline for Solvency II

Next steps



Status 2015:

Level 2.5: Implementing Technical Standards

1st Set published	1 April 2014
Comments due by	26 June 2014
Submission to the EC of the Set 1 of the ITS	31 October 2014
2nd Set published	2 December 2014
Comment period ended	2 March 2015
Submission to the EC of the Set 2 of the ITS	due June 2015

Level 2.5 Regulation
Regulatory Technical Standard (RTS)

Status 2015:

Level 2.5: Regulatory Technical Standard

CP 14/062: Consultation Paper on the Advice to the European Commission in response to the Call for Advice on recovery plan, finance scheme and supervisory powers in deteriorating financial conditions

Published	2 December 2014
Comments due by	18 February 2015

Final version published by EIOPA: 28 March 2015

Level 3 Regulation Guidelines

Status 2015:

Level 3: Guidelines

1st Set published	2 June 2014
Comments due by	29 August 2014
Results of Consultation published	3 December 2014
Publication in all official EU – Languages:	2 February 2015 ✓
2nd Set published	2 December 2014
Comment period ended	2 March 2015
Publication in all official EU – Languages:	due July 2015

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3. **Where are we going?**

Member States have to bring into force the laws to comply with Directive by 31 March 2015

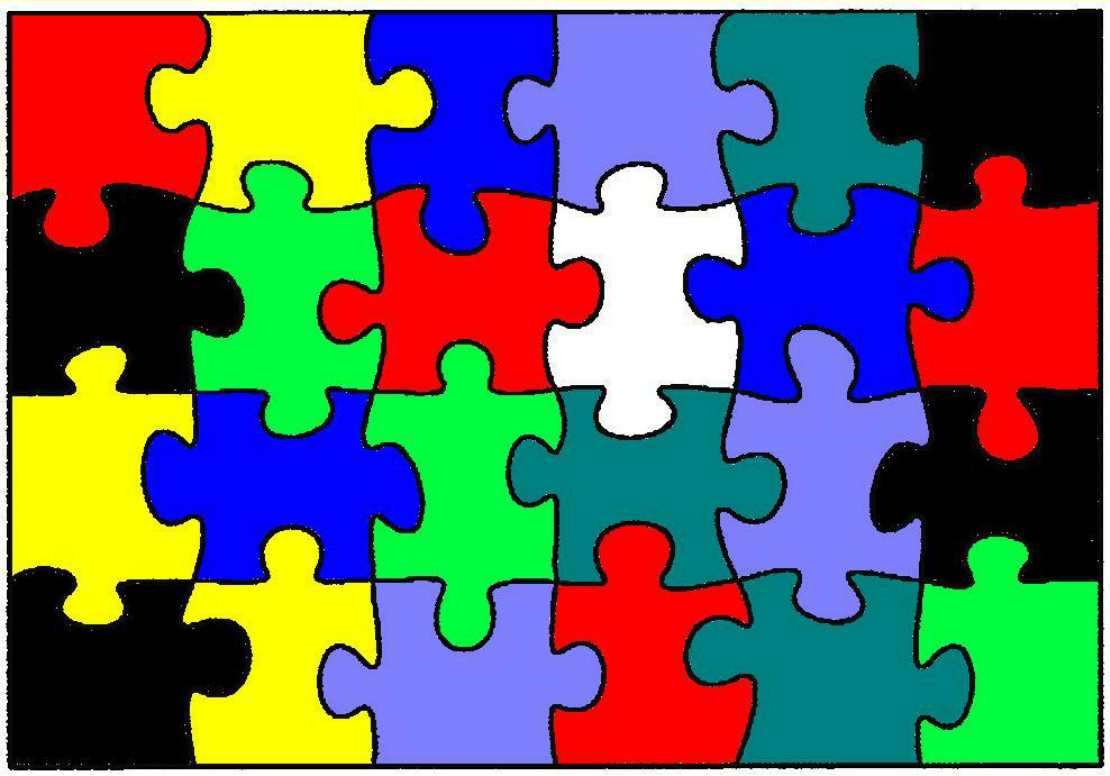
- Solvency regulation is almost complete.
- Member States now have the task to change their laws to comply with the Directive.
- Directive repeals a number of older regulations. The necessity of follow-up regulations has to be checked.
- National supervisors have to provide application forms for LTG supervisory measures.
- Undertakings are still in a preparatory phase („phasing-in“)

High time to leave the observer position now!

Where are we going?

Almost all parts of the Solvency regulation are available by now in a final version!

Where are we going?



Build a picture out of these parts that adequately reflects the risk position of your undertaking!

Relevant processes with involvement of actuaries are defined for each of the three pillars of the Solvency framework.

Pillar 1: Calculation of Technical Provisions, Risk margin, SCR

Pillar 2: Risk management, ORSA

Pillar 3: Reporting

Where are we going?

Undertakings should have now (or by end of this year)

- adequate models to calculate the best estimate cashflows
- chosen an Economic Scenario Generator (if required)
- defined a process to fill the reporting templates to comply with Pillar 3 requirements
- established a system of Governance compliant with Pillar 2 requirements
- defined an ORSA – policy
- documented a risk management policy.

The preparatory phase ends by the end of this years. It offered undertakings and regulator a phasing-in to the Solvency regime.

Where are we going?

What remains to be done?

Due to time pressure in the past there might have been only limited possibilities to scrutinise the calculation of technical provision and SCR steps.

Besides validation of data there are assumptions hidden in the Solvency regulation and in the publication of EIOPA that need to be checked.

What remains to be done?

Two examples of issues that should come under scrutiny:

1) Check of underlying assumptions
   (as required by Article 45 (c) of the Directive)
2) Refinement of methods

Design of the Standard Formula for SCR calculation demands consideration

1. The Basic Solvency Capital Requirement comprises individual risk modules. These are are aggregated by using a correlation matrix.

It shall consist of at least the following risk modules:

(a) non-life underwriting risk;
(b) life underwriting risk;
(c) health underwriting risk;
(d) market risk;
(e) counterparty default risk.

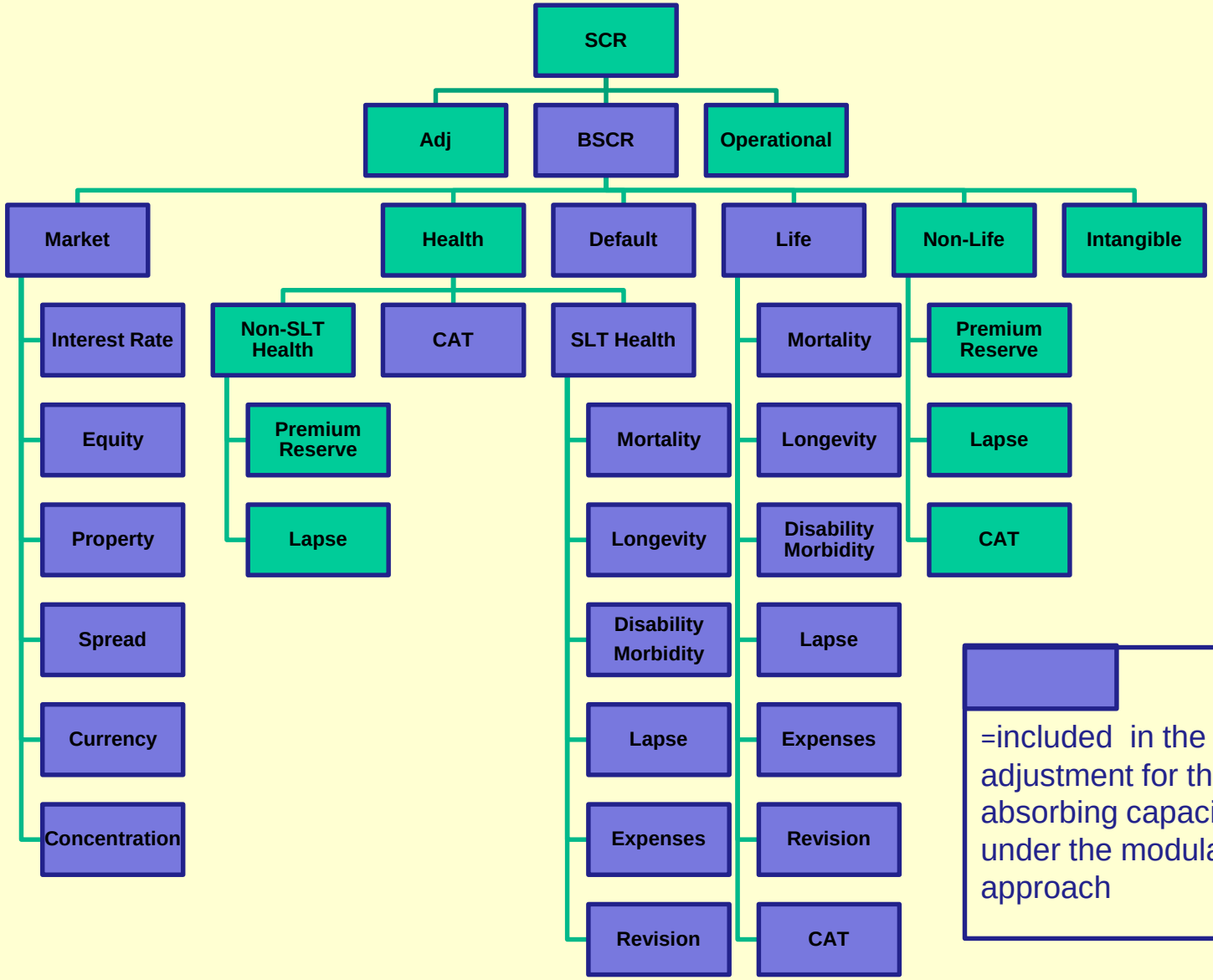
Example for allocation: Health insurance cover might be provided by products calculated like non-life or on a similar basis to that of life insurance products.

2. Insurance operations shall be allocated to the underwriting risk module that best reflects the technical nature of the underlying risks.

3.The correlation coefficients for the aggregation of the risk modules, as well as the calibration of the capital requirements for each risk module, shall result in an overall SCR which corresponds to the Value-at-Risk of the basic own funds subject to a confidence level of 99,5 % over a one-year period.

4**. Each of the risk modules shall be calibrated using a Value-at-Risk measure, with a 99,5 % confidence level, over a one-year period.**

SCR Standard formula: Due consideration of stress calibration required



Correlation coefficients
Life underwriting risk

DA Article 136 Correlation coefficients

	Mortality	Longevity	Disability	Life expense	Revision	Lapse	Life catastrophe
Mortality	1	-0.25	0.25	0.25	0	0	0.25
Longevity	-0.25	1	0	0.25	0.25	0.25	0
Disability	0.25	0	1	0.5	0	0	0.25
Life expense	0.25	0.25	0.5	1	0.5	0.5	0.25
Revision	0	0.25	0	0.5	1	0	0
Lapse	0	0.25	0	0.5	0	1	0.25
Life catastrophe	0.25	0	0.25	0.25	0	0.25	1

Standard Formula: issues for non-life insurers: Insurance Risk

- Premium risk and reserving risk (conceptually different) are combined in insurance risk
  - SCR(insurance risk) is determined by EIOPA-set volatility factors intended to represent the risk of 12 different ‚buckets' of non-life liabilities
  - Volatility factors calibrated by EIOPA to represent EU-wide industry averages ... but an individual insurer's profile will be unique and Standard Formula may not give a „good fit"
  - Likely to see inconsistencies between SCR from Standard Formula versus Internal Model
- USPs (Undertaking Specific Parameters) offers a route by which an insurer can reset for its own unique volatility factors

Standard Formula: issues for non-life insurers: Catastrophe Risk

- Standard Formula for Cat Risk has a very large and complex parameter set
  - Natural Cats
    - By zone and country
  - Man-made catastrophes
- Parameterised to reflect variation in risk, exposure and geographical diversification (EIOPA sought consistency with vendor cat models such as RMS, AIR)
- EIOPA guidance on application of reinsurance

..... but the complexity of cat exposures and associated reinsurance means that SCR by Standard Formula is an unreliable proxy for an internal model of cat risk

ORSA demands scrutiny

Guideline 8 – Forward-looking perspective of the overall solvency needs assessment

The undertaking should ensure that its assessment of the overall solvency needs is forward-looking, including a medium term or long term perspective as appropriate.

2.52. **The undertaking has to assess the significance of deviations of its specific risk profile from the relevant assumptions underlying the (sub) modules of the SCR calculation the correlations between the (sub) modules and the building blocks of the (sub) modules.**

Guidelines on valuation of technical provisions EIOPA-BoS-14/166 27 November 2014

Where are we going?

Underlying assumptions for the SCR have been derived several years ago.

They are based on studies covering only segments of the market.

Correlation coefficients might proof to be not adequate.

Way out for undertakings (if significant deviations recognized):

- Undertaking specific parameters (not allowed for life insurance companies
- Partial internal models

EIOPA -14-322: **The underlying assumptions in the standard formula for the Solvency Capital Requirement calculation**

Example: Underlying assumptions
Calibration of interest rate stress

EIOPA -14-322: **The underlying assumptions in the standard formula for the Solvency Capital Requirement calculation**

2.1 Interest rate risk

The underlying assumptions for the interest rate risk sub-module can be summarised as follows:

- Only interest rate risk that arises from changes in the level of the basic risk free interest rates is captured.
- Volatility and changes in the shape of the yield curve are not covered explicitly in the interest risk sub- module.
- The undertaking is not exposed to material inflation or deflation risk.

Example: Underlying assumptions
Significant changes for interest rate risk

The calibration of the interest rate shocks in the standard formula are based on the relative changes of the term structure of interest rates using the following 4 datasets:

- EUR government zero coupon term structures (1997 to 2009),
- GBP government zero coupon term structures (1979 to 2009),
- and both Euro and GBP LIBOR/swap rates (1997 to 2009).

“For each of the four individual datasets, stress factors were assessed through a Principal Component Analysis (PCA), according to their maturity. PCA is a tractable and easy- to- implement method for extracting market risk factors. For each maturity, the mean of the results in the four datasets was taken as a single stress factor. “

Example: Underlying assumptions
Significant changes for interest rate risk

The datasets chosen for calibrating the interest risk sub- module represent the deepest and most liquid markets for interest rate sensitive instruments in the European area.

Moreover, the use of all four datasets together introduces a control against the uncertainties that could result from using just one dataset in isolation.

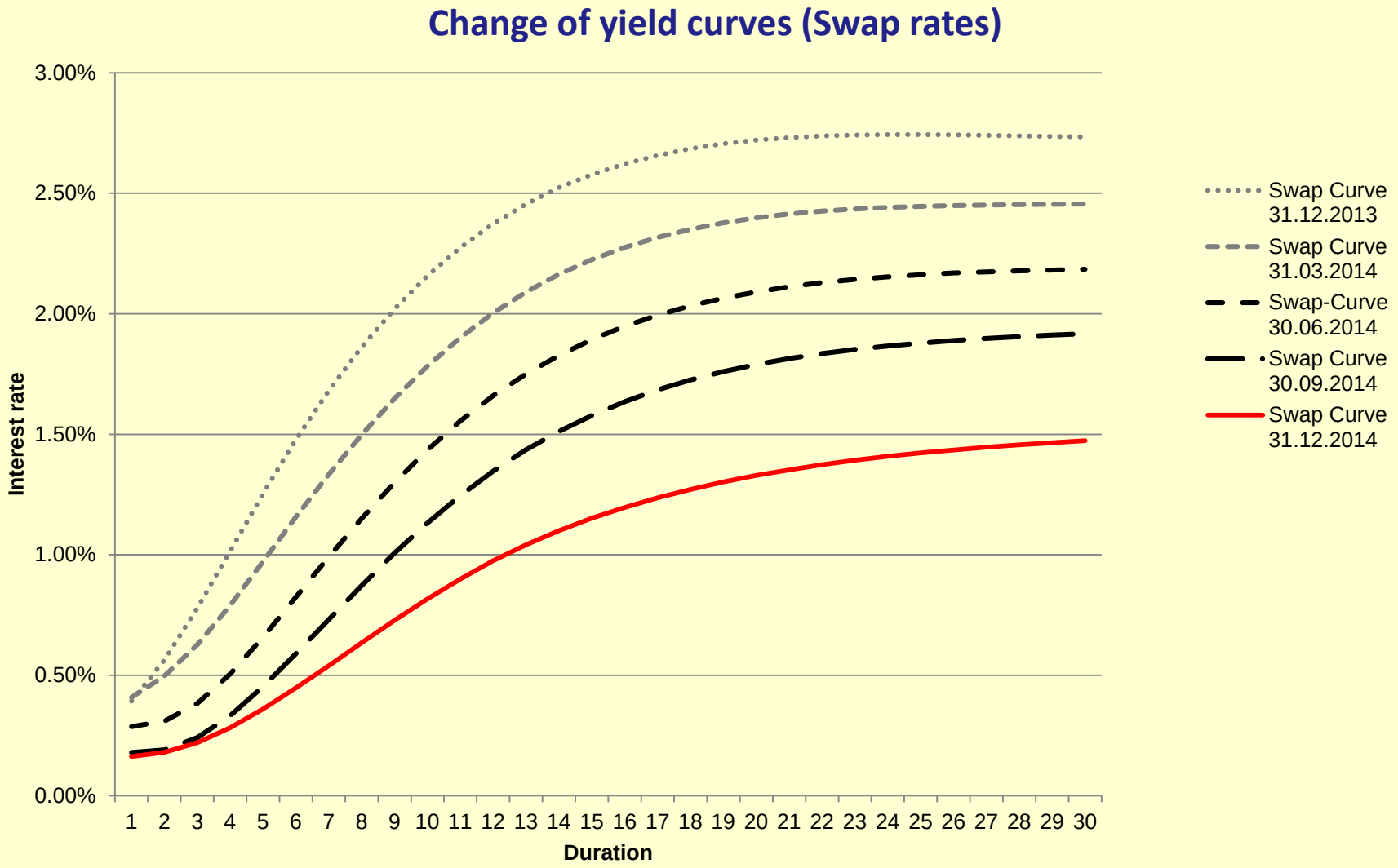
> For example, using the longer data period available for the GBP government bond data introduces additional balance and a greater depth of information to the economic cycle than the other three datasets.

There are several technical idiosyncrasies in each of the other data sets generating uncertainties that can be balanced out by combining the results from all four datasets appropriately.

The analysis is based on time series of EUR and GPB interest rates and therefore reflects the European economic experience over the last 30 years. However, financial parameters can develop differently from what has been observed in the past in Europe.

For instance, there can be deflationary scenarios like in Japan in the 1990s.

Example: Capital Markets changed significantly
Interest rate shock still adequate?



Example: Capital Markets changed significantly Interest rate shock still adequate?

Technical Specification

SCR.5.25. The altered term structures are derived by multiplying the current interest rate curve by (1+*sup*) and (1+*sdown*), where both the upward stress *sup*(*t*) and the downward stress *sdown*(*t*) for individual maturities *t* are specified as follows:

Maturity *t* (years)		**relative change *sup(t)***	**relative change *sdown(t)***
1	or shorter	70%	-75%
2		70%	-65%
3		64%	-56%
4		59%	-50%
5		55%	-46%
6		52%	-42%
7		49%	-39%
8		47%	-36%

Is the calibration of stresses still adequate?

Since end of February EIOPA publishes monthly updated information on the riskfree interest rate for all currencies.

Publication consists of Technical Information and Technical Documentation. Technical Documentation explains the chosen procedure.

Riskfree interest rates term structures for 53 countries - 2 sets of term structures per country for the interest rates with and without volatility adjustment are published.

Are the assumptions underlying the SCR calculation adequate for all these currencies?

Are they still adequate for the EURO?

Refinement of methods
Example: Calculation of the risk margin

Guideline 61 – Methods to calculate the risk margin

Method 1) To approximate the individual risks or sub-risks within some or all modules and sub-modules to be used for the calculation of future SCR.

Method 2) To approximate the whole SCR for each future year, inter alia by using the ratio of the BEL at that future year to the BEL at the valuation date.

Method 3) To approximate the discounted sum of all future SCR in a single step without approximating the SCR for each future year separately, inter alia by using the modified duration of the insurance liabilities as a proportionality factor.

Method 4) To approximate the risk margin by calculating it as a percentage of the BEL. According to this method, the risk margin should be calculated as a percentage of the BEL net of reinsurance at valuation date. When deciding on the percentage to be used for a given line of business, the undertaking should take into account that this percentage is likely to increase if the modified duration of the insurance liabilities – or some other measure of the run-off pattern of these liabilities - increases.

Guidelines on valuation of technical provisions EIOPA-BoS-14/166 27 November 2014

Method 2

Starting with SCR at valuation date: **SCR(0)**

Calculate $SCR_{LoB}(0)$ as part of SCR(0)

Calculate $BEL_{LoB}(t)$ for all future years t

$SCR_{LoB}(t) = SCR_{LoB}(0) * BEL_{LoB}(t) / BEL_{LoB}(0)$

Calculation of risk margin (Delegated Acts)

Risk margin for the whole portfolio has to be allocated to the lines of business.

The allocation shall **adequately reflect the contributions of the lines of business** to the Solvency Capital Requirement over the lifetime of the whole portfolio of insurance and reinsurance obligations.

This demands an adequate choice of best estimate parameters for each line of business, to picture the risk inherent in a line of business adequately.

Internal Model: Approval process with Regulators

- Variation across member states of extent of insurers entering IMAP (internal model application process)
  - Most prevalent in UK which had previous model regime since 2005
  - Some member states have few or no IMAPs
- Variation in skillsets at insurers and at regulators to run approval process
- To adopt SCR generated by internal model, the model is required to be approved by regulator
- Approval criteria: statistical quality, calibration (99.5%), documentation, validation, use test, „external models & data“, P&L attribution

Internal Model: Challenges of IMAP

- Building a model is relatively easy – compared to having a model fully wrapped up with good governance!
- Challenges:
  - Actuaries aren‘t good at documentation or communicating to non-actuaries
  - Models developed over many years – becomes a struggle when subjected to rigorous validation processes – e.g. difficult to explain why ‚expert judgements‘ had been made
  - Use test challenges: poor (or no) understanding of models by executive or board // boards not involved in key design decisions – or in setting main assumptions // capital model only used for regulatory purpose and no other

Internal Model: the future

- EIOPA has expert group sharing knowledge between member state regulators on internal models – to help harmonise model approvals processes and standards
- Some insurers (in UK for example) may fail IMAP initially and be on Standard Formula into 2016 / 2017
- Unclear whether internal models will gradually become more prevalent over the next decade – or will governance standards prove to difficult (and costly) – Solvency II could become mostly formulaic at the SCR level
- International groups face challenges over how they operate group and local internal models, diversification between entities, models inside and outside of EU – developments in Bermuda, USA, etc.

Reporting: Final regulation still outstanding

Reporting templates and reporting requirements have been part of Set 2 of the ITS consultation papers. Consultation period has ended

2 March 2015.

Templates have been modified and extended. Extension has been necessary e.g. to implement the LTG data.

Next steps:

EIOPA analyses the comments, finalises the template and reporting requirements and then will send this package to the Commission as soon as possible.

Considering the 3 month period for the EC to check the papers, by end of June there could be a final version.

Risk:

If significant adaptations were necessary, this might endanger the required delivery date in the first quarter of 2016.

Forecast

AAE and member associations are working on standards to support actuaries and to facilitate a homogeneous application of Solvency II