



INSURANCE

# Solvency II Training Workshop Overview of Three Pillars

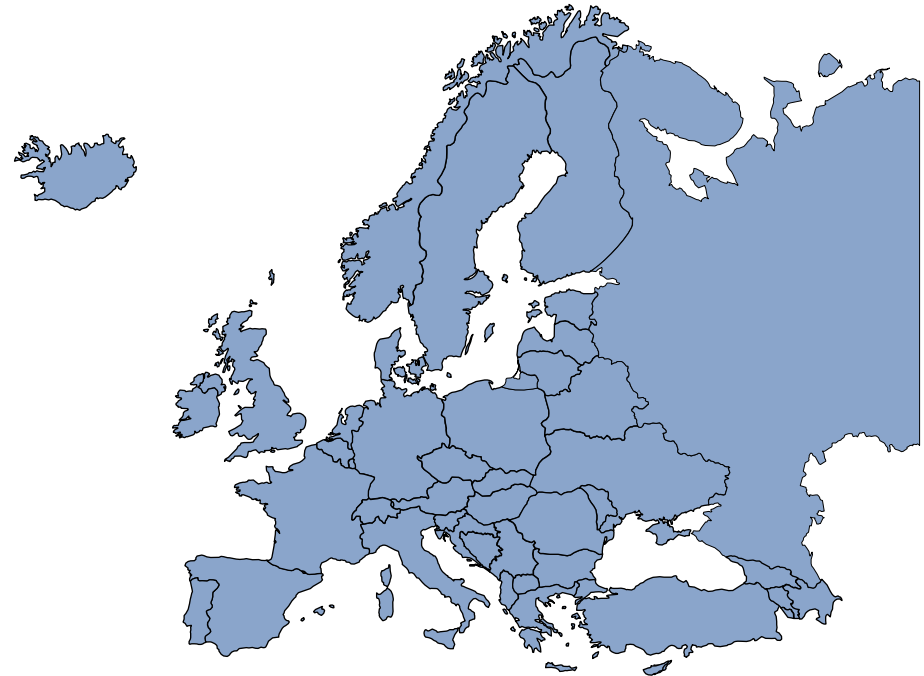
22 June 2008

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ADVISORY

## Background

- A complete review of the EU model of insurance supervision
  - Beyond quantitative measures
  - Overall risk management
  - Structure of insurance supervision
- Covers entire insurance industry
- (Widely) recognised as a potentially positive development



# Influences

Project initiated in 2000  
Phase 1: Deciding broad principles (2001-2003)  
Phase 2: Detail and finalise new Directive (2004+)

## IAS & IFRS

- Consistency
  - At least attempting
  - Develop with reference

## Banking & Insurance convergence

- BASEL II
  - Informing principles
  - Adapt for insurance

## EU Convergence

- Harmonisation
  - Desirable
  - Degree?

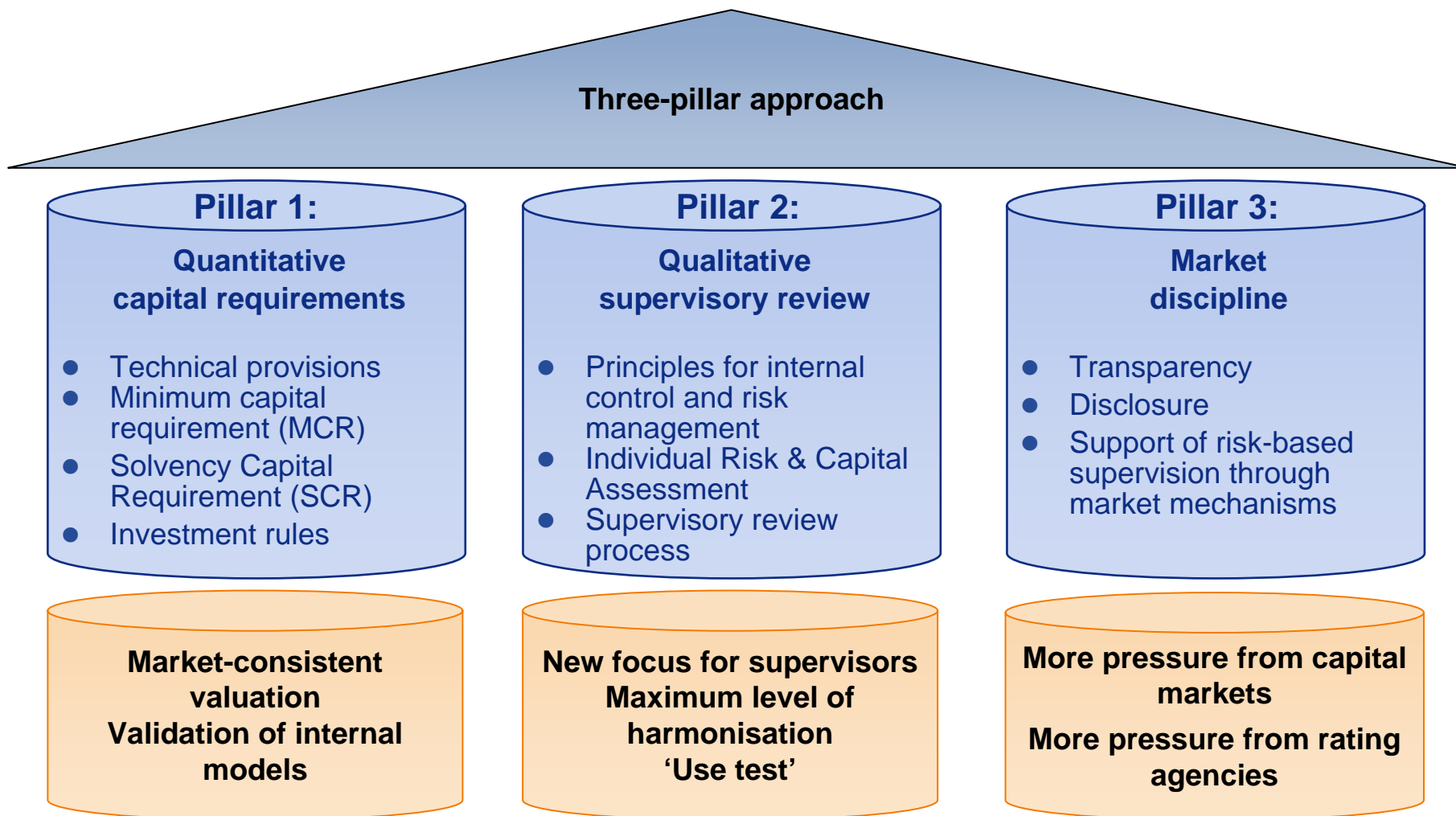
## Phase 1 Outputs

- Key Objectives:
  - Must be risk based
  - Must not focus solely on quantitative aspects
  - Incentivise good risk management
  - Provide appropriate tools to access overall solvency
  - Harmonise standards across EU
  - Better provision for groups and conglomerates

## Solvency II – What is it?

- Overhaul of European insurance regulation and supervisory structure
- Unified prudential regulation of insurers and reinsurers in the European insurance industry
- Capital requirements more closely aligned to risks
- Focus on risk management framework
- Better consumer protection
- Non-zero failure regime
- Three pillar structure, based on Basel II and CRD (Capital Requirements Directive) for banks
- Link to IFRS Phase II

# Solvency 2 – Three-pillar approach



## Pillar 1 – Quantitative Capital Requirements

- Different method of calculating technical provisions under Solvency II and IFRS 4.
- Communication and embedding of the technical provisions in the business.
- Minimal Capital Requirement (“MCR”) fails to reward appropriate risk management behaviour.
- Internal capital models produced lower Solvency Capital Requirements (“SCR) during QIS3. Significant advantage in having an approved internal model.
- Significant implications on IT systems and data collection.

## Pillar 2 – Qualitative Supervisory Review

The key to Pillar 2 is to demonstrate that the Company has:

- Effective enterprise risk management.
- Embedded risk and capital management into the business – “use test”.

The implications are:

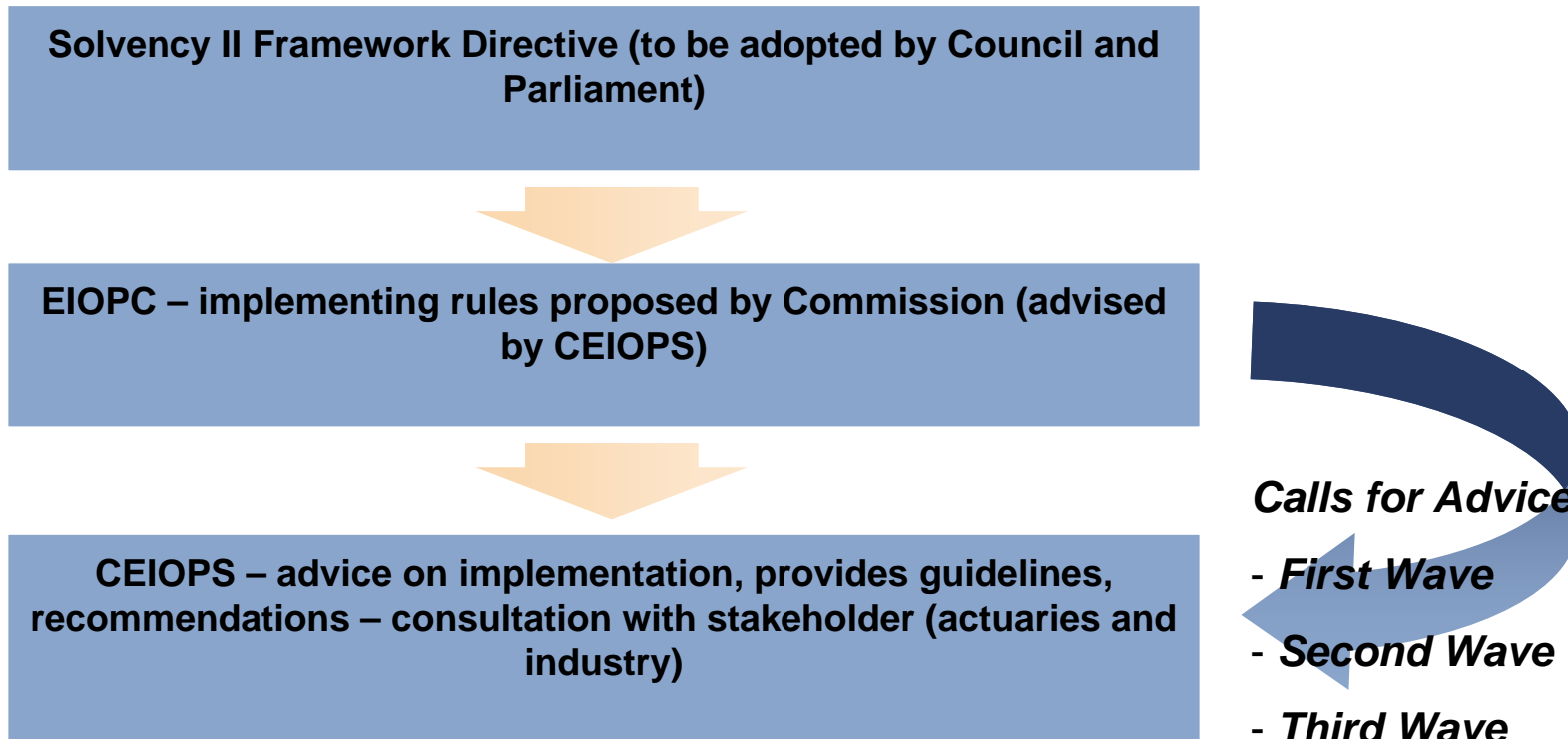
- Embedding will require significant management and IT time and resource.

The main focus on Pillar 3 will be disclosure in the form of the solvency and final condition report. This report will cover:

- Governance and risk management
- Valuation principles applied for solvency purposes
- Internal model: methodologies, assumptions and validation
- Capital requirements:
  - The company's MCR and SCR and breaches during the year
  - Breakdown between SCR standard formula and internal model calculations
- **Transitional period after Directive implementation not exceeding 3 years**

## Phase 2 Structure

- EIOPC (European Insurance and Occupational Pensions Committee)
- CEIOPS (Committee of European Insurance and Occupational Pensions Supervisors)



## Phase 2 Structure - CEIOPS Calls for Advice

1st Wave of Calls for Advice	
1	Internal Control & Risk
2	Supervisory Review Process (general)
3	Supervisory Review Process (quantitative tools)
4	Transparency of Supervisory Action
5	Investment Management Rules
6	Asset Liability Management

2nd Wave of Calls for Advice	
7	Technical Provisions in Life Assurance
8	Technical Provisions in Non-Life Insurance
9	Safety Measures
10	Solvency Capital Requirement: Standard Formula (Life & Non-Life)
11	Solvency Capital Requirement: Internal Models (Life and Non-Life) and their Validation
12	Reinsurance (and other Risk Mitigation Techniques)
13	Quantitative Impact Study and Related Issues
14	Powers of Supervisory Authorities
15	Solvency Control Levels
16	Fit and Proper Criteria
17	Peer Reviews
18	Group and Cross Sectoral Issues

3rd Wave of Calls for Advice	
19	Eligible Elements to Cover the Capital Requirements
20	Independence and Accountability of Supervisory Activities
21	Cooperation between Supervisory Authorities
22	Supervisory Reporting and Public Disclosure
23	Procyclicality
24	Small and Medium-Sized Enterprises

## Mostly Pillar 2 issues

- Internal control and risk management
  - Common sense and best practice approach
- Supervisory review practices
  - Quantitative and qualitative elements
  - On-site visits
  - Prescription of quantitative tools by companies?
  - Early warning indicators and long term resilience tests
- Investment Management
  - Board approved investment and ALM policy

***Unlikely to result  
in significant  
change***

## Mostly Pillar 1 issues

- Technical Provisions
- Solvency Capital Requirements
- Solvency control levels
- Safety measures
- Reinsurance
- Quantitative impact studies (QIS)

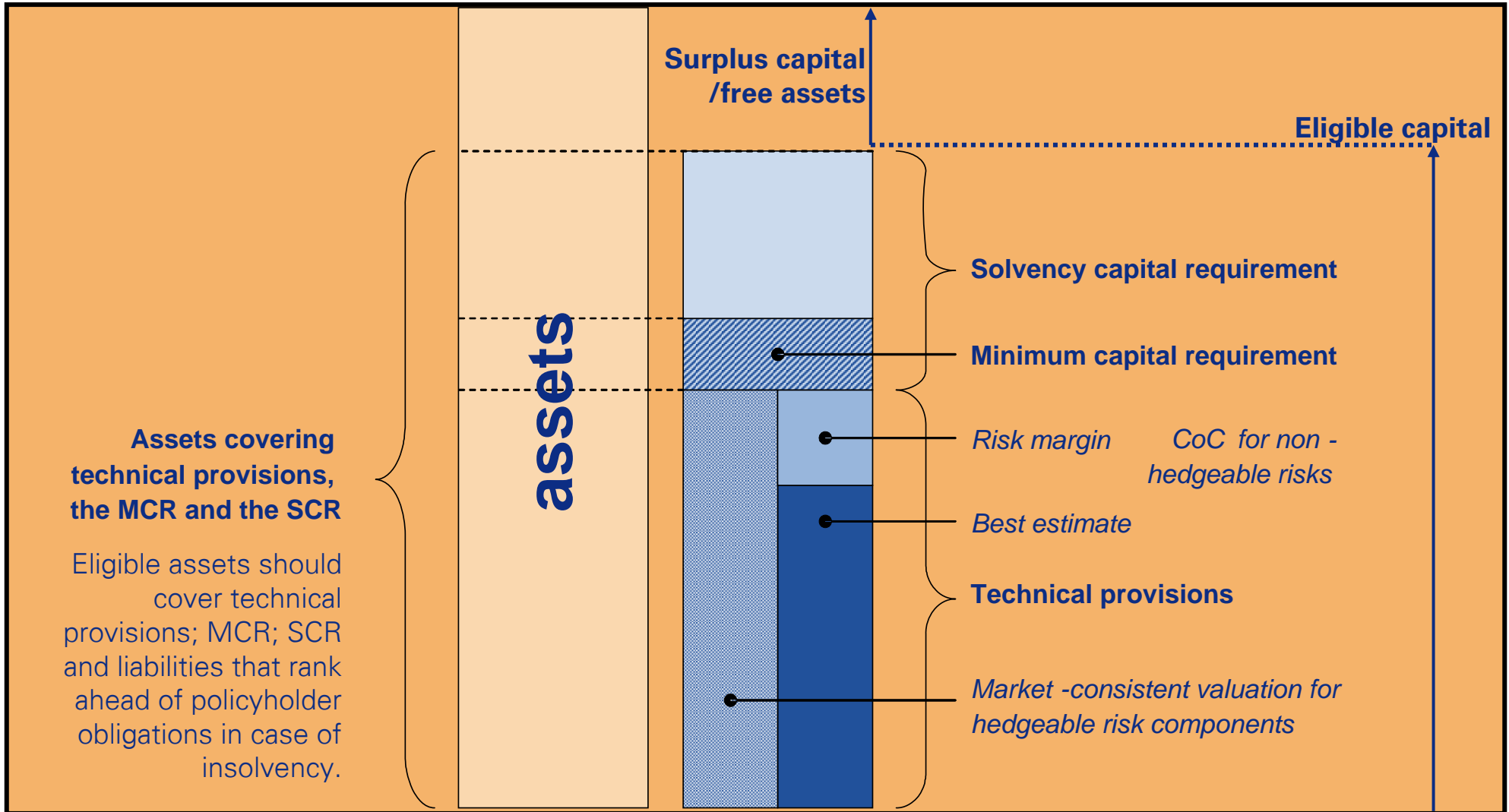
- ***A RANGE OF OPTIONS***
- ***LOOKING FOR INPUT***
- ***QIS TO INFORM***

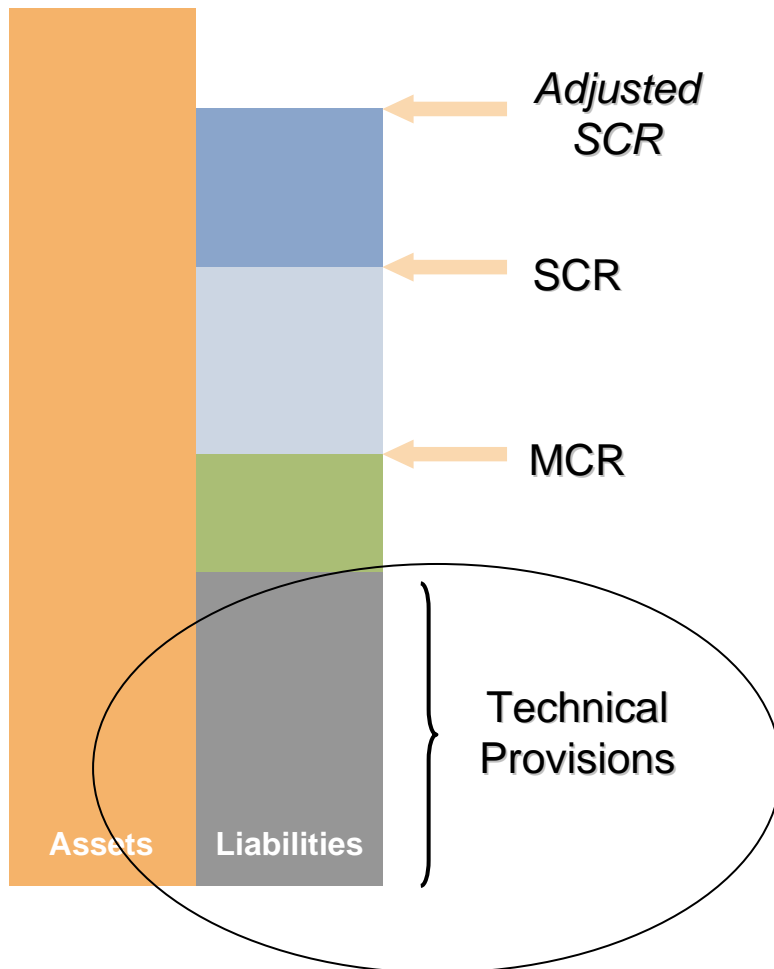
## Also Some Pillar 2 issues

- Powers of supervisory authorities
- Fit & Proper criteria
- Supervisory peer reviews
- Group & cross sectoral issues

# Solvency II training workshop

## Proposed framework

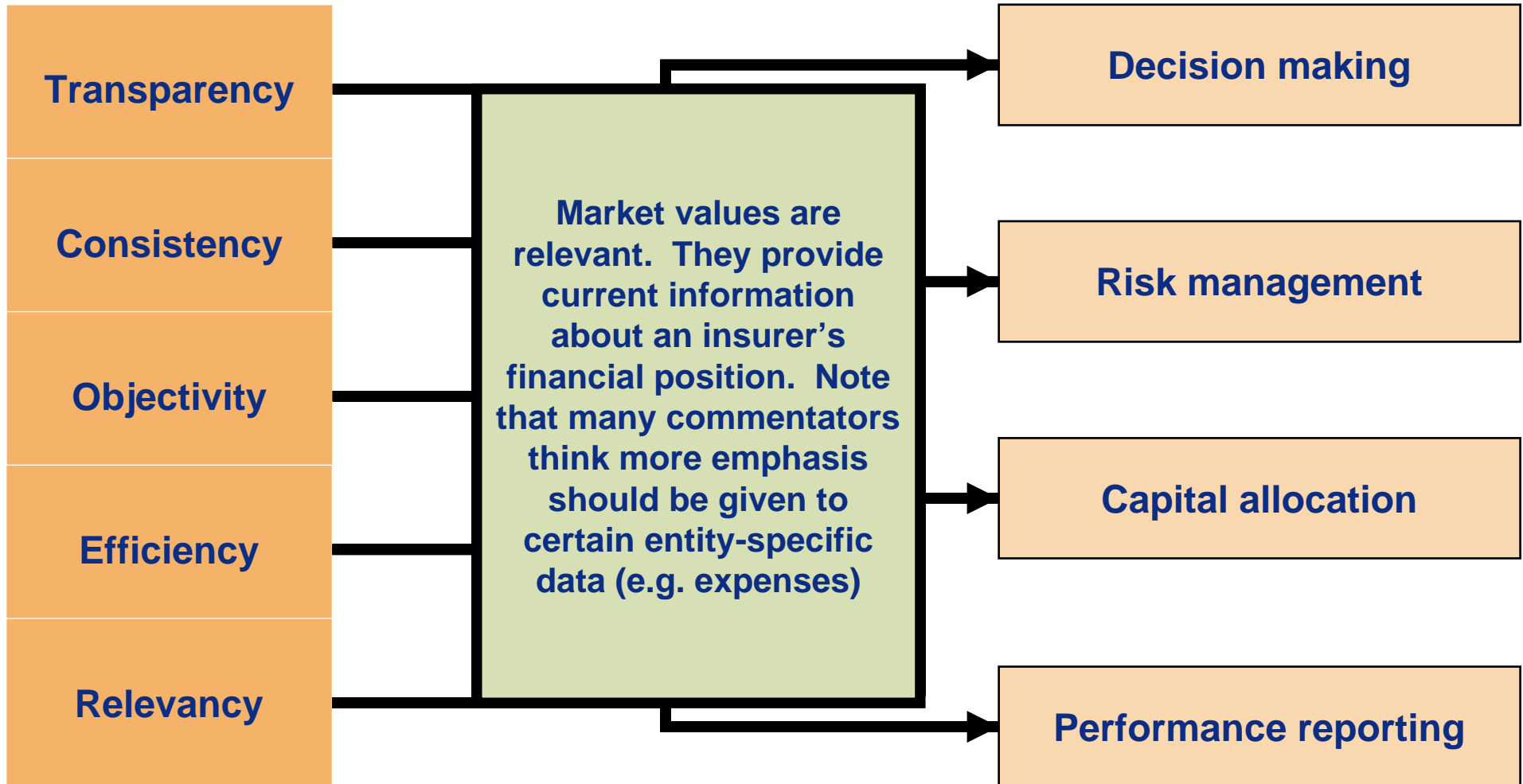


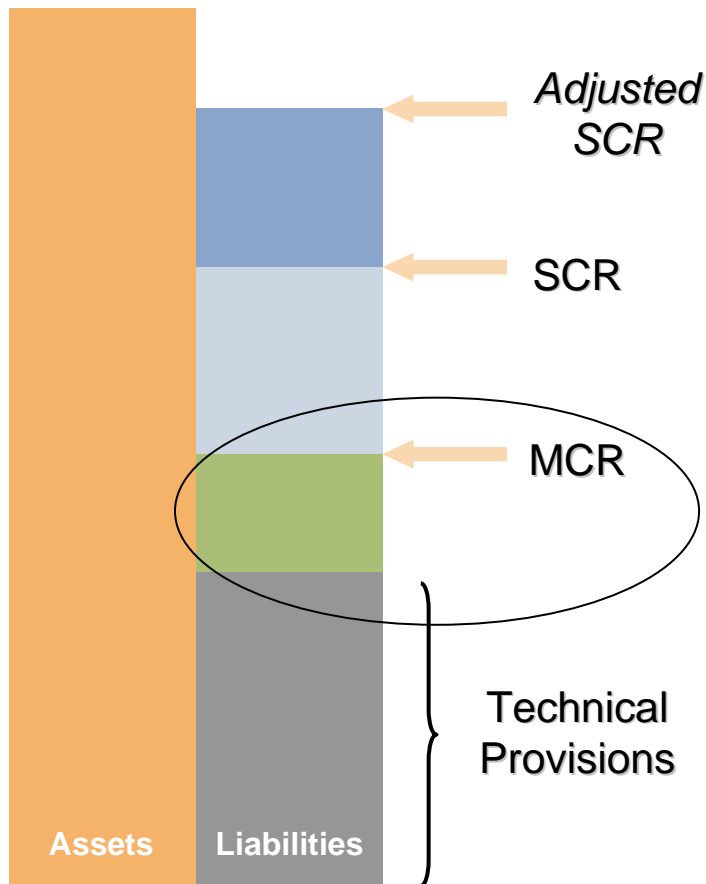


### Technical provisions

- Market consistent value of liabilities
- Best estimate
- Plus explicit risk margin – market value margin
  - Market-consistent valuation for hedgeable risk components e.g. traded securitised risks
  - Cost of Capital (CoC) approach for non-hedgeable risk components e.g. most insurance risks: mortality, etc.
  - CoC is based on the Swiss Solvency Test (SST):
    - The risk margin is the smallest amount of capital which is necessary, in addition to the best-estimate of the liabilities, so that a buyer would be willing to take over the portfolio of assets and liabilities
    - Risk Margin = present value of the cost of capital of the future risk capital associated with the portfolio of assets and liabilities
    - A buyer (or a run-off company) needs to put up capital during the run-off period of the portfolio of assets and liabilities and therefore a potential buyer needs to be compensated for the cost of having to put up that capital
- **How should CoC be calculated and implemented?**

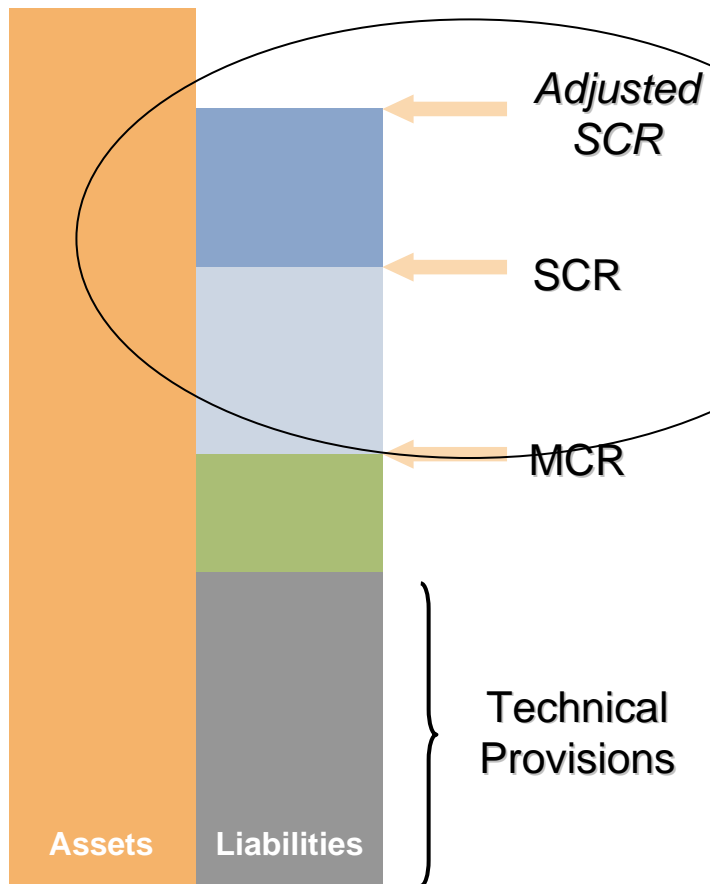
# What are the advantages of market-consistent measures?





### Minimum Capital Requirement

- An absolute floor and level representing an unacceptable risk to policyholder triggering ultimate supervisor intervention
- Simple and robust calculation but not sensitive enough as some risk components e.g. operational risk are excluded
- Preference for factor based approach: Formulaic construction
- Ratio of MCR to SCR
  - Issues from QIS 2:
    - NL – no adjustment for expected profitability
    - L – inadequate reflection of profit-sharing business
- **Proposed responses:**
  - **Modular approach – Solvency 1 plus**
  - **Compact approach – Percent of last year's SCR calculation: standard formula or model**

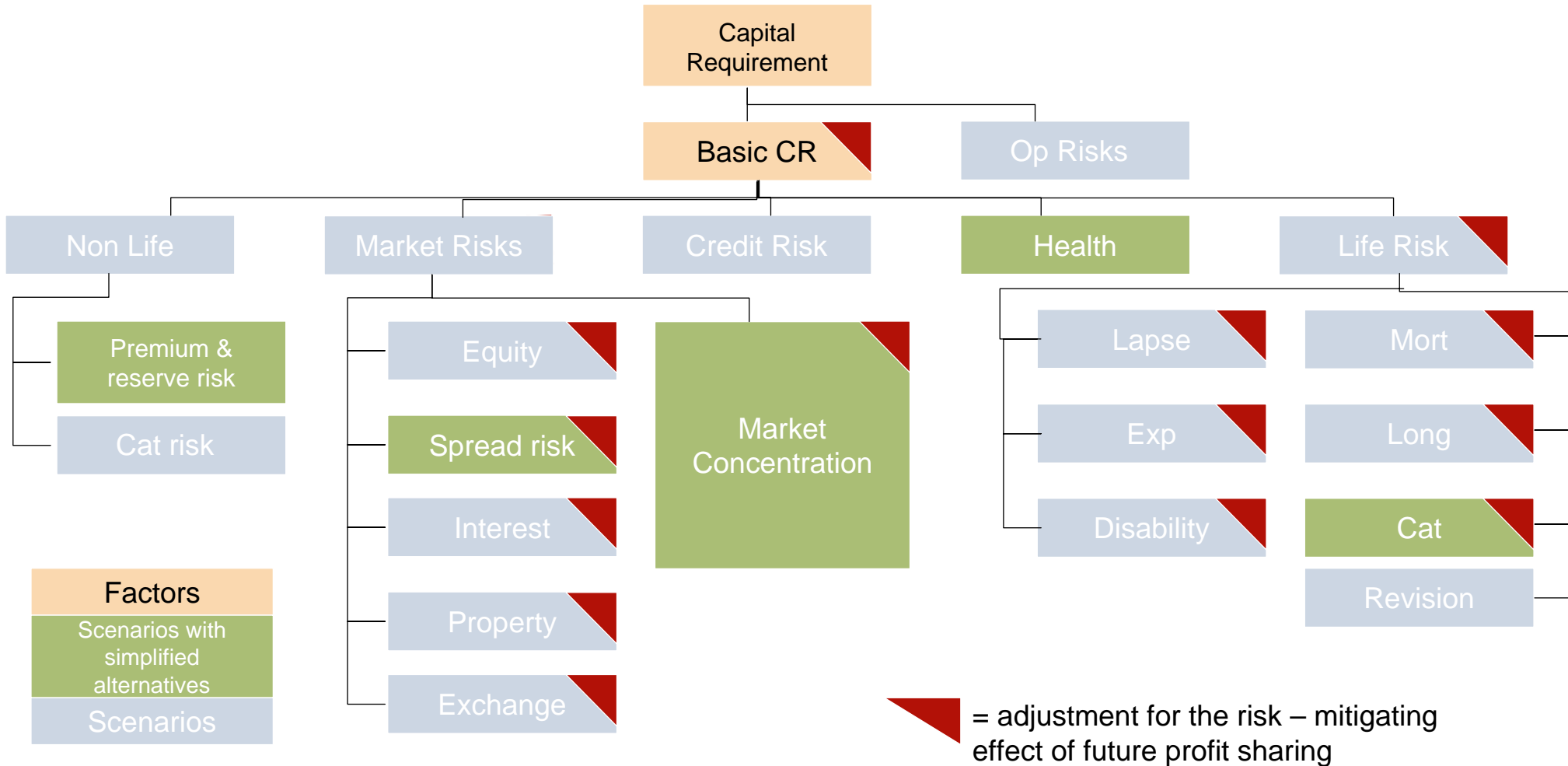


### Solvency Capital Requirement

- To absorb significant unforeseen losses
- Standard approach: formulaic plus scenarios
- Internal models: full and partial
- As a minimum to cover insurance, market, credit and operational risks
- Calibrated at 99.5% VaR confidence level over 1-year horizon
- Adjusted SCR: Pillar 2 add-on
- Complexity: cost-benefit issue for smaller firms
- **EC pressure on transparency – Disclosure?**
  - **Breaches of SCR**
  - **SCR add-on**

# Solvency II training workshop

## SCR – Standard Formula



# Solvency II training workshop

## The spirit of Solvency II and Israel

**Solvency II is a regulatory framework which is fitted to:**

**large multi-line insurance groups**

- mutualisation techniques, statistical laws
- consumer protection system

**Israel are generally:**

**smaller insurers or reinsurers?**

- Personal lines insurance, risk management tool, fiscal tool

- **What is an internal model?**

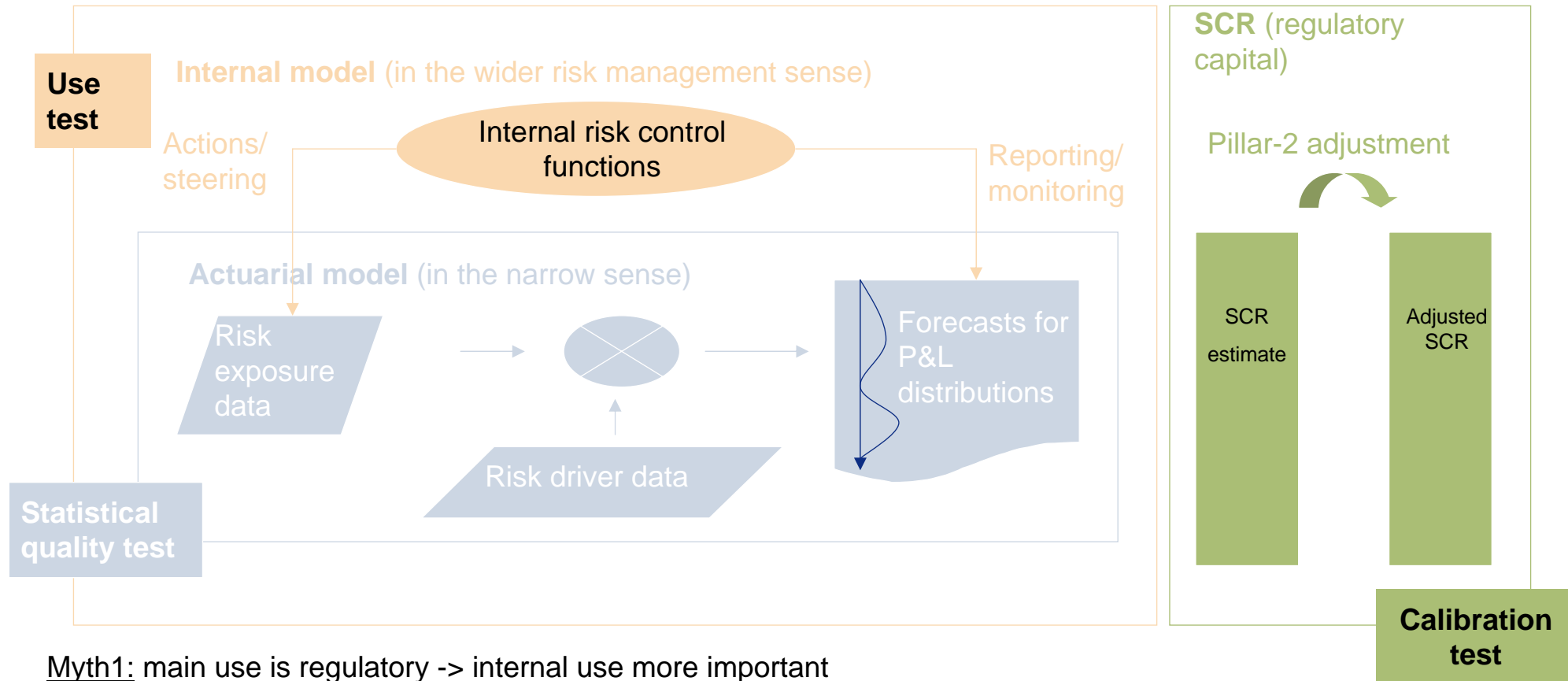
- *“A risk management system developed by an insurer to **analyse the overall risk position**, to **quantify risks** and to **determine the economic capital** required to meet those risks” –Solvency II Glossary (CEA/GC)*

- **What is the purpose of an internal model?**

- *To fully integrate processes of risk and capital management within the insurer*
- Solvency II directive allows for two types:
  - –Full internal models
  - –Partial internal models

# Solvency II training workshop

## Internal Model

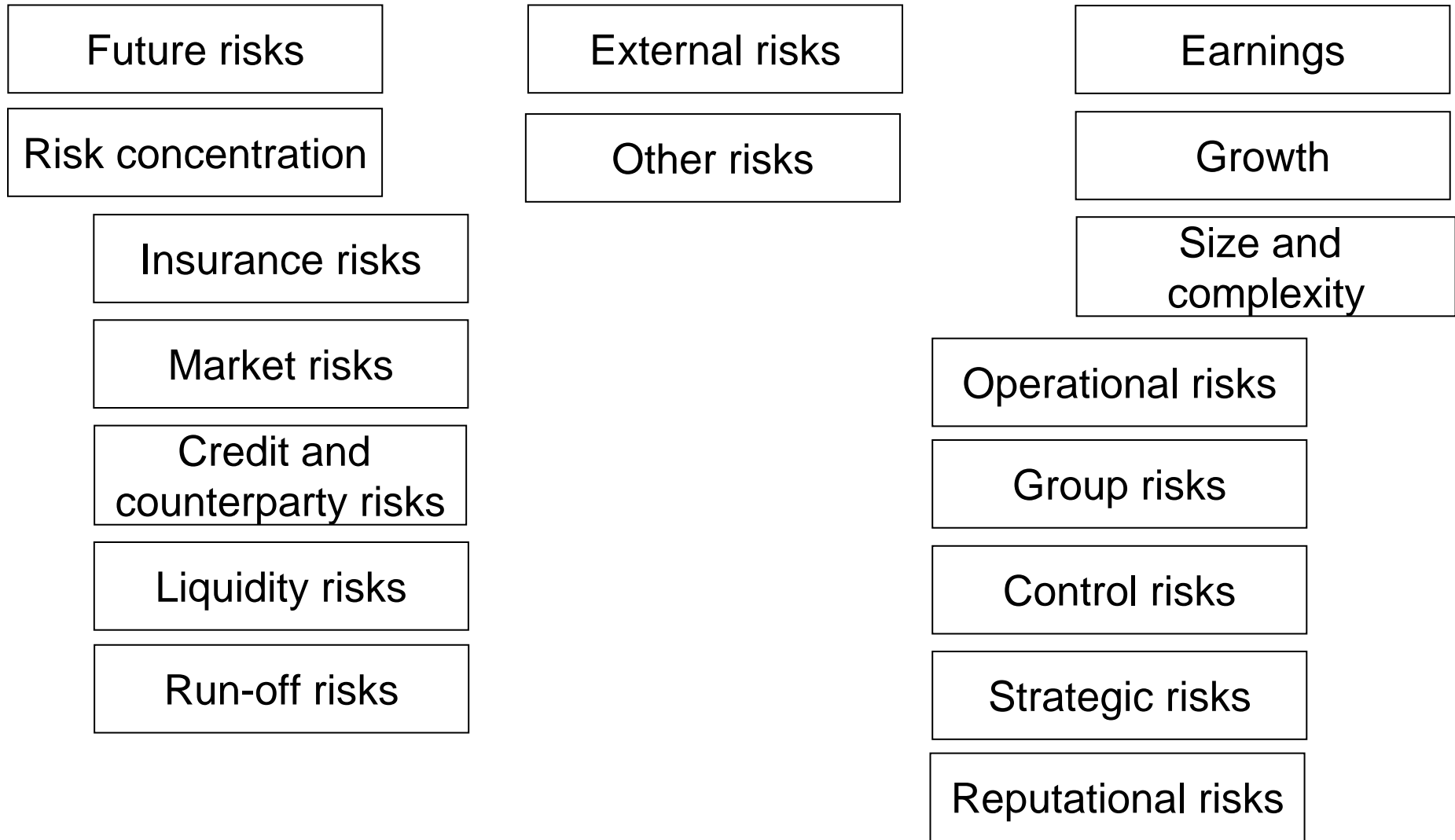


Myth 1: main use is regulatory -> internal use more important

Myth 2: main goal is computation of SCR

Myth 3: One risk measure -> distributions & several risk measures/metrics for reporting

## Internal Model – likely components to be modelled



## Internal Model – Expected Benefits

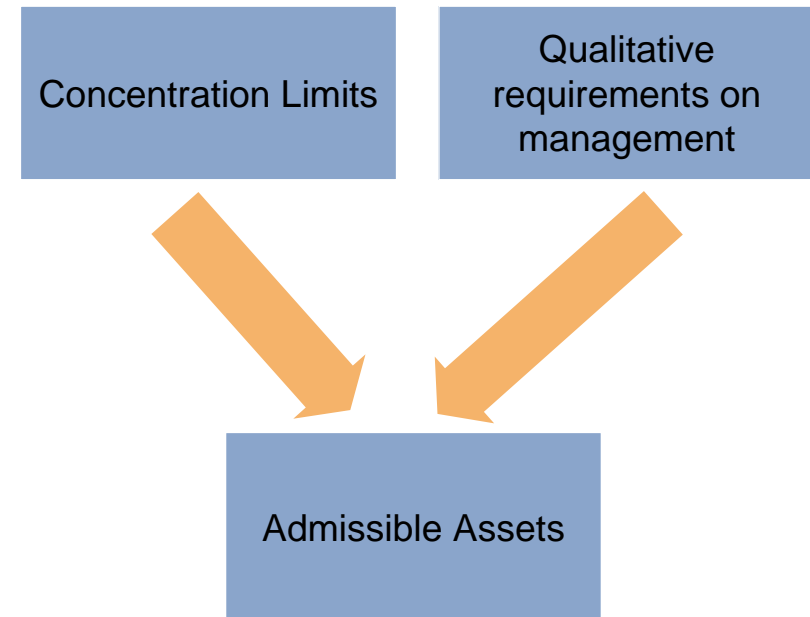
- **Improved risk sensitivity** of SCR related to the insurer's specific profile leading to a more adequate modelling of non-standard, especially non-linear, contracts,
- **Better alignment** of regulatory capital requirements with economic capital
- **Encouragement of innovation in risk management methodology** leading to higher competitiveness through better risk management and hence lower costs of capital,
- **More effective pillar 2 discussion** and familiarity of the supervisor with more detailed exposure data than is generally available in accounting records,
- **Cost efficiencies through re-use of risk modelling** infrastructure for discussion with supervisors, rating agencies, analysts and shareholders.
  
- **Insurers must satisfy:**
  - Use test
  - Statistical quality standards
  - Calibration standards
  - Validation standards
  - Documentation standards
- **Use of external vendor models does not exempt insurers from any of the standards**

### Reinsurance

- More tailored to the true risk profile
- SCR more accurately reflects risk mitigation
- Only to the extent that it can be reliably quantified
- Should allow for the increase in credit risk

### Asset Rules

- 'Prudent Person Plus'
- Eligible assets to cover
  - technical provisions
  - MCR and SCR
- i.e. same asset rules



Valuation guidelines	
Market type	Value
<ul style="list-style-type: none"> <li>● Reliable, observable prices.</li> <li>● Liquid market</li> </ul>	<ul style="list-style-type: none"> <li>● Set equal to their market values.</li> <li>● Long/Short position in assets: use bid/offer price</li> </ul>
<ul style="list-style-type: none"> <li>● Observable but not reliable</li> </ul>	<ul style="list-style-type: none"> <li>● Reasonable proxies can be used (description of proxies should be disclosed)</li> </ul>
<ul style="list-style-type: none"> <li>● No readily available market</li> </ul>	<ul style="list-style-type: none"> <li>● Alternative approach should be adopted, but should still be consistent with any market information.</li> </ul>
<ul style="list-style-type: none"> <li>● Illiquid or non-tradable assets</li> </ul>	<ul style="list-style-type: none"> <li>● Prudent basis, taking into account credit and illiquidity risks</li> </ul>

In absence of any sufficient evidence, value of assets should not be higher than acquisition cost minus sellers profit margin.

## Own funds: Quality criteria and classification

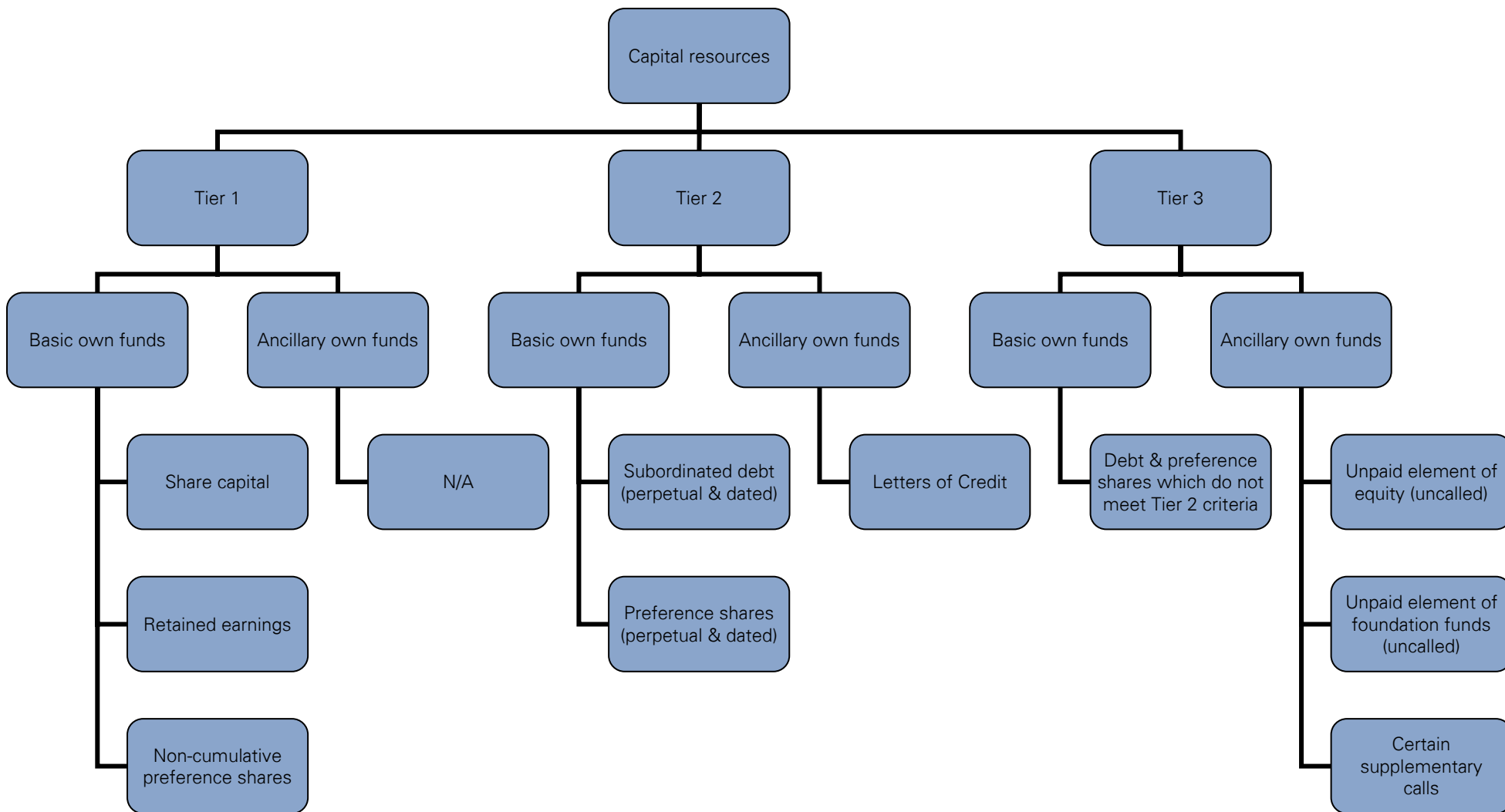
The proposed directive (*Article 92*) lists five classification criteria for own funds:

- **Subordination** – inability to repay item holder until all other obligations have been met
- **Loss absorbency** – total amount of item is available to absorb losses upon winding-up
- **Permanence** – item can be called up on demand to absorb losses on an ongoing basis as well as upon winding-up
- **Perpetuality** – item undated or has a sufficient duration vis-à-vis undertaking's obligations
- **Mandatory servicing costs** – no mandatory fixed charges (e.g. interest servicing) to redeem nominal sum

Quality	Nature	Basic own funds	Ancillary own funds
	High		Tier 1
Medium		Tier 2	Tier 3
Low		Tier 3	-

- The SCR must be covered by at least one-third Tier 1 own funds
- Only Tier 1 own funds and basic Tier 2 own funds are eligible to cover the MCR (i.e. not ancillary own funds)
- Tier 3 items cannot exceed one-third of total eligible own funds

# Potential classification of capital instruments



## Own funds: Outstanding issues

In relation to own funds, it is intended to adopt the following implementing measures before the new regime enters into force. Final advice is due from CEIOPS by October 2009

- Criteria for granting supervisory approval of ancillary own funds
- Treatment of participations in financial and credit institutions
- Division into sub-tiers if necessary
- Criteria to classify own funds into sub-tiers
- List of own funds deemed to meet the classification criteria
- Methods for supervisory approval of the assessment and classification of own fund items not covered by the list of own funds

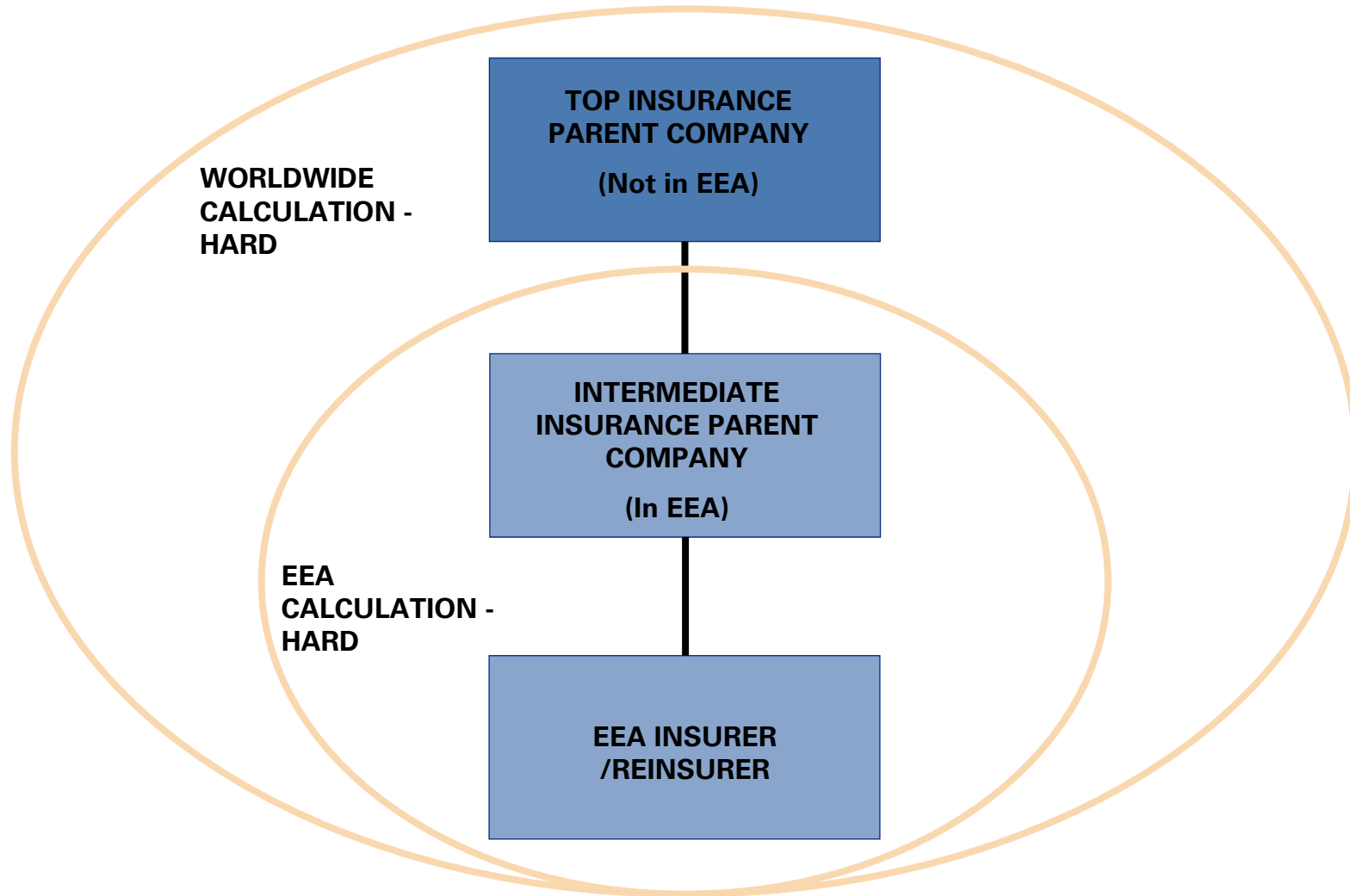
## Third Wave advice

- Mostly Pillar 2 and Pillar 3 issues
- Supervisory practices
  - Independence and accountability of supervisors
  - Co-operation
  - Reporting and public disclosure
- Procyclical effects
- Issues for small / medium sized companies
- Group Supervision

## Specific areas to be considered

- Impact of Solvency II on different group structures
  - Where an insurance or reinsurance group is domiciled outside of the EEA
  - Where a non-EEA group has branches or subsidiaries in the EEA
- Non-EEA and concept of equivalence
  - What is equivalence and what does it mean?
  - How does it impact groups
- Intra-group reinsurance

## Setting the scene – Capital calculations required

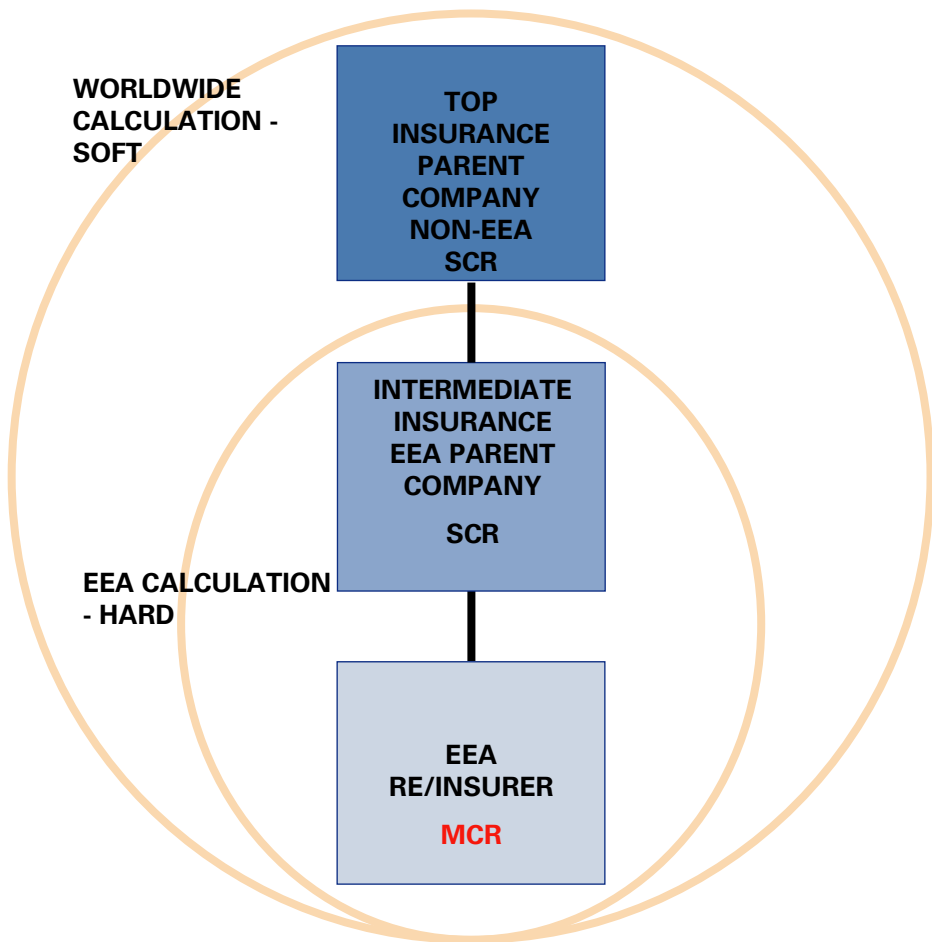


## Non-EEA equivalence

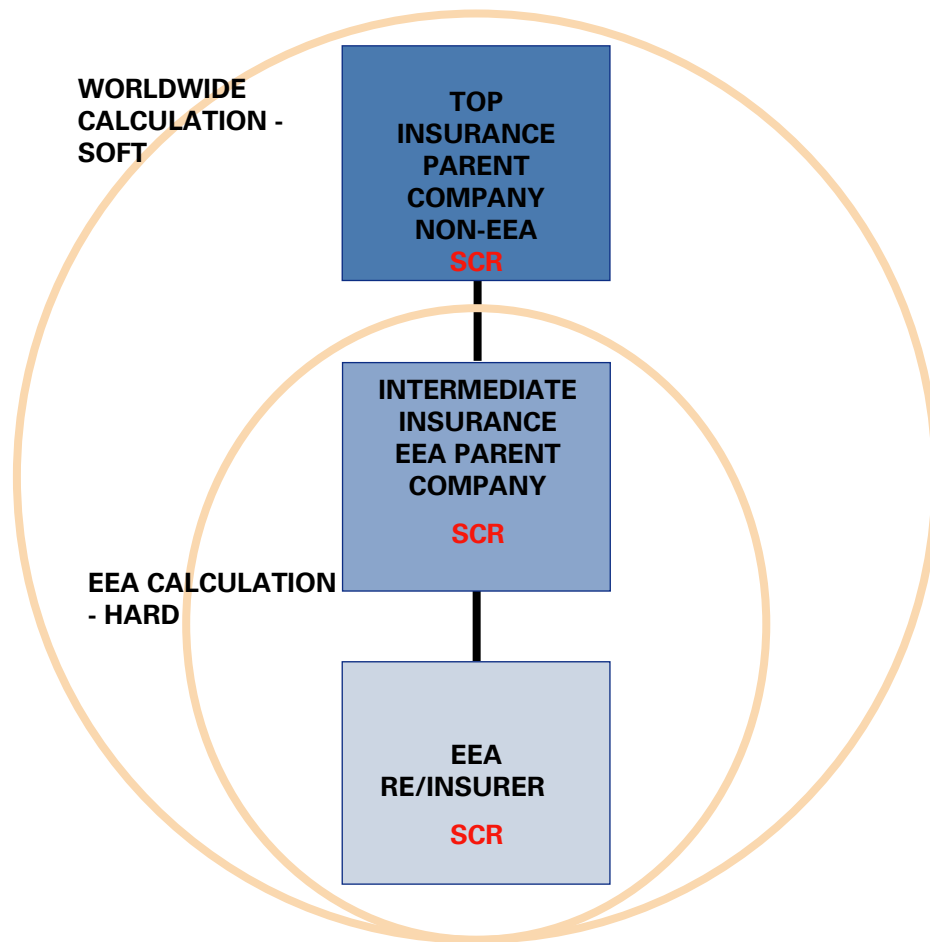
- **Equivalence of non-EEA regimes is important as it could have capital requirement implications for group undertakings**
- **How is equivalence assessed?**
  - To be determined in implementing measures
  - The EC after consultation with CEIOPS may adopt a decision as to whether the non-EEA regime for group supervision is equivalent. Although subject to regular review, the EC decision is considered determinative
- **Features of supervisory regimes relevant to equivalence**
  - Risk -based capital
  - Supervisory approach
  - Extent of cooperation with EU regulatory bodies

# EEA re/insurer subsidiary of EEA parent - Impact of non-equivalence on group and solo solvency

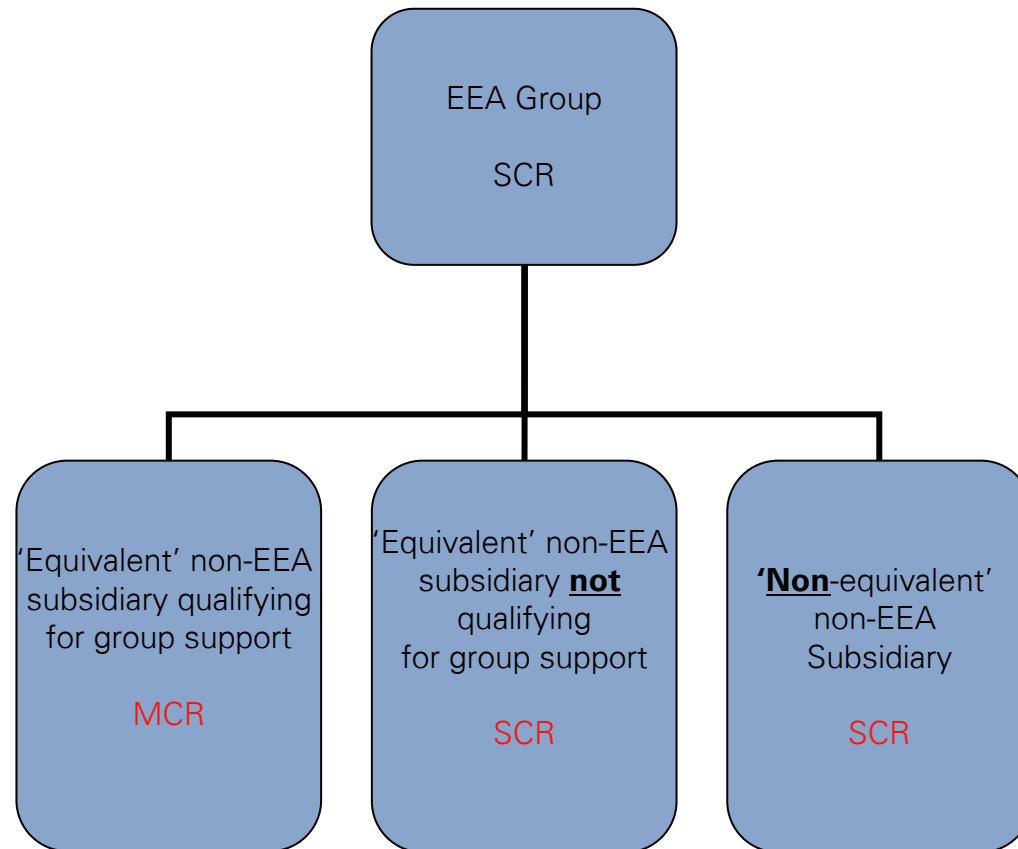
## EQUIVALENT WITH GROUP SUPPORT (SAME AS IF EEA)



## NON -EQUIVALENT



## Non-EEA subsidiary of EEA parent – Possible scenarios



Where an EEA company has non-EEA branches these will need to be brought up to EEA standard and included in the solvency calculations accordingly

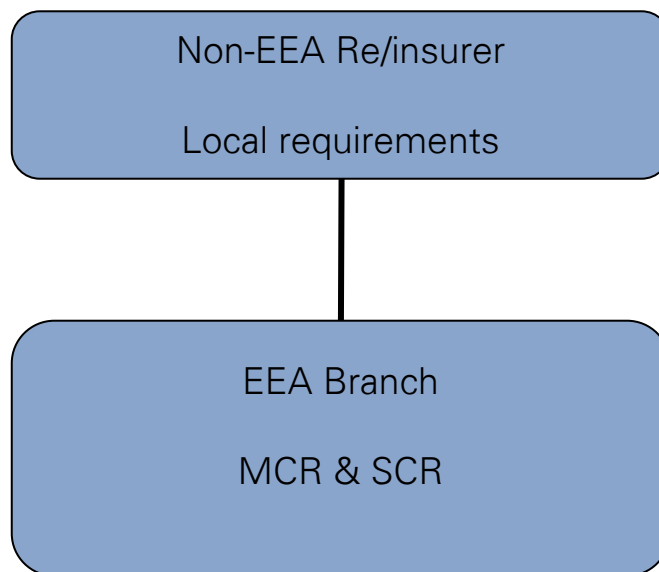
## Solvency capital requirements for branches of non-EEA re/insurers

### Current regime

- Do not trigger group solvency requirement
- Currently insurance branches are required to maintain a branch and global solvency margin
- Pure reinsurance branches are required to maintain a global margin of solvency
- Assets covering technical provisions must be localised in EEA
- Required to make a deposit– a proportion of the MCR

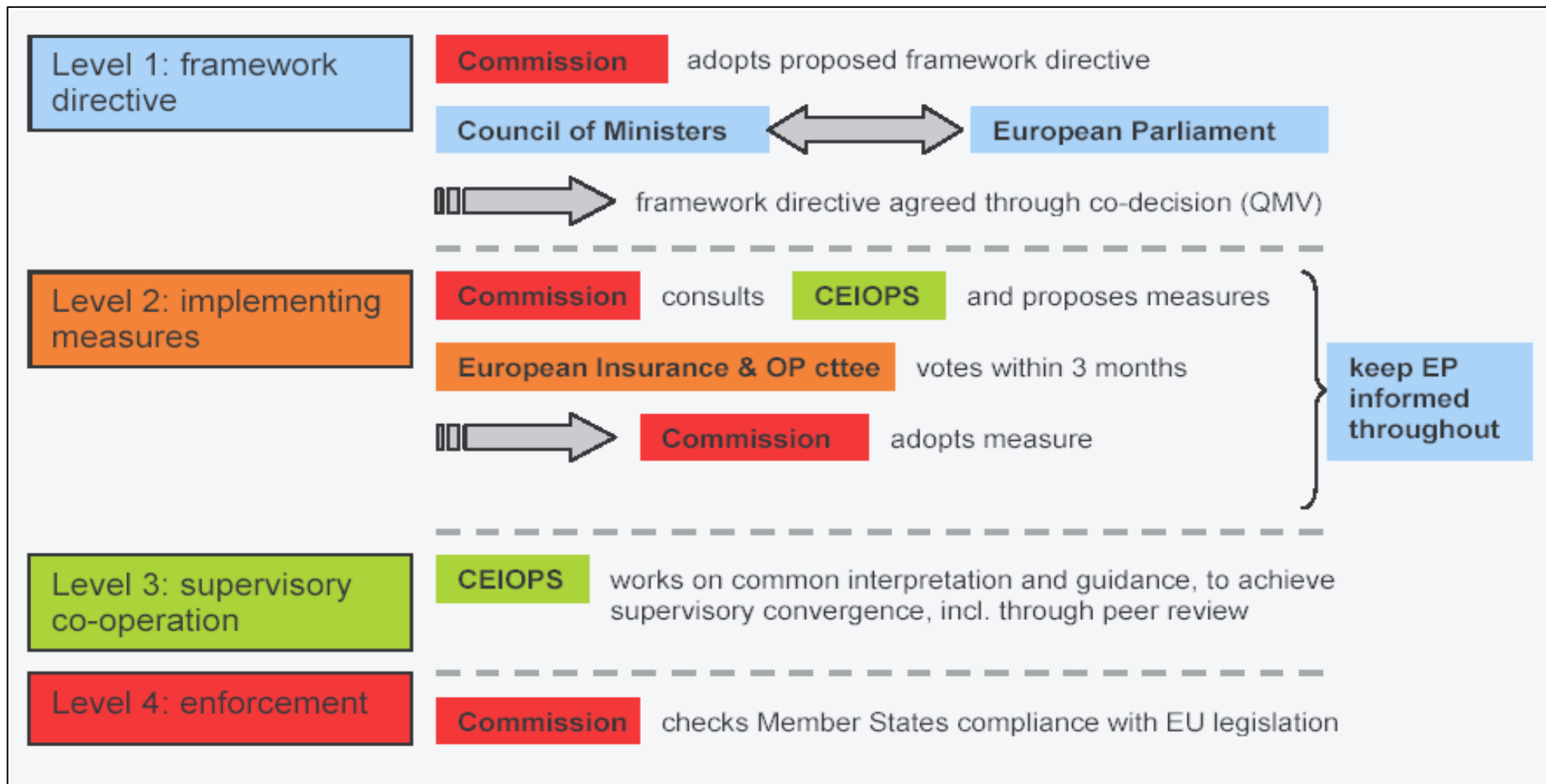
### Solvency II regime

- Do not trigger group solvency requirement
- MCR, SCR determined by reference to branch activities
- Assets covering technical provisions must be localised in EEA
- Assets covering MCR must be held in country of branch and assets covering SCR within the EC



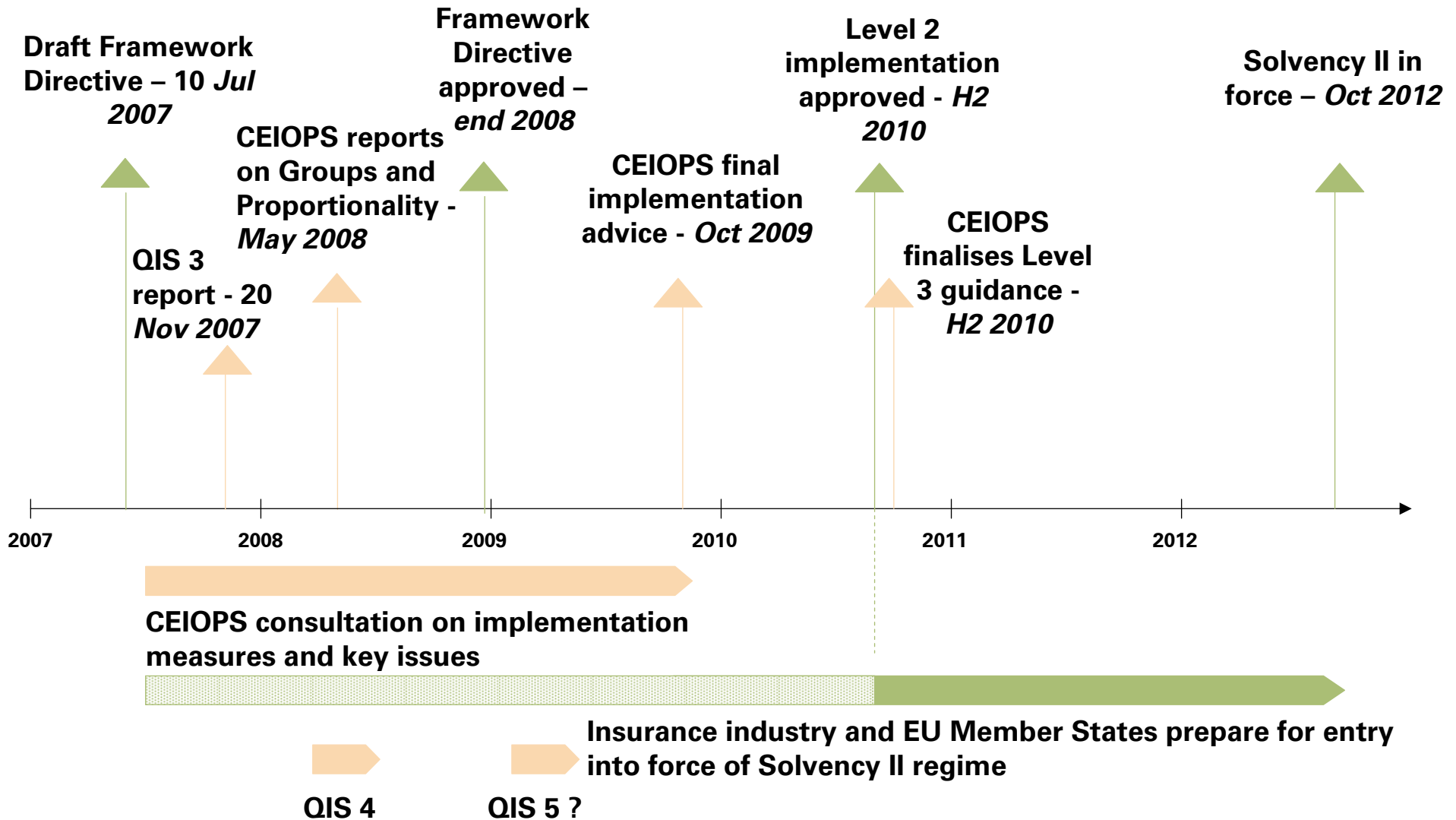
# Solvency II training workshop

## Lamfalussy 4-level structure



# Solvency II training workshop

## Solvency II timeline



## Critical to the development process

Spring 05  
Preliminary Field Study  
- Limited participation

QIS1  
October (ish) 05  
- Focus on technical provisions

Final rules

QIS2, QIS3  
Spring 06 & 07

- Technical provisions, MCR and SCR, QIS 3
- Revised formulas: SCR, MCR
- Calibration

Others needed?

## Quantitative Impact Studies (QIS)

- **What they are**
- **Issues**
- **Results**

# Quantitative Impact Studies

## QIS1: Initial definition of fair value of liabilities

### Approach to calculating the fair value of liabilities

- Reserves defined such that they are sufficient in 75 percent of run-off situations

### Quantitative result

- In most cases the fair value was lower than the technical provisions

### Challenges

- Fair value definition required:
  - Advanced modeling techniques
  - A level of data currently not available within the insurance industry
  - A degree of resources higher than were available in many companies

<b>Total 75% percentile liabilities as % of current provisions (QIS1)</b>			
	<b>Min</b>	<b>Average</b>	<b>Max</b>
<b>Belgium</b>	<b>80%</b>	<b>86%</b>	<b>95%</b>
<b>Finland</b>	<b>75%</b>	<b>84%</b>	<b>88%</b>
<b>France</b>	<b>71%</b>	<b>84%</b>	<b>95%</b>
<b>Netherlands</b>	<b>83%</b>	<b>86%</b>	<b>89%</b>
<b>Norway</b>	<b>58%</b>	<b>92%</b>	<b>114%</b>
<b>Poland</b>	<b>59%</b>	<b>85%</b>	<b>103%</b>
<b>Portugal</b>	<b>51%</b>	<b>96%</b>	<b>139%</b>
<b>Sweden</b>	<b>95%</b>	<b>95%</b>	<b>95%</b>
<b>Slovenia</b>	<b>69%</b>	<b>84%</b>	<b>98%</b>
<b>Great Britain</b>	<b>59%</b>	<b>82%</b>	<b>108%</b>

Source: CEIOPS-FS-01/06, 17 March 2006

# Quantitative Impact Studies

## QIS2: Alternatives for fair value of liabilities, SCR, MCR

	Fair value of liabilities	Findings
<b>Follow-up from QIS1</b>	<ul style="list-style-type: none"> <li>● 75% percentile approach</li> <li>● Cost of capital approach</li> </ul>	<ul style="list-style-type: none"> <li>● Both approaches led to similar fair values</li> <li>● Industry had a preference for cost of capital approach</li> <li>● <b>Result:</b> <i>Supervisors dropped the percentile approach</i></li> </ul>
	SCR and MCR	Findings
	<ul style="list-style-type: none"> <li>● Factor based formula for all risk types</li> <li>● Partially scenario based alternatives: negative impact of a predetermined shock in the risk variable</li> </ul>	<ul style="list-style-type: none"> <li>● For investment and life risk, a scenario based calculation was preferred</li> <li>● Lack of consistency in the calibration of MCR and SCR</li> <li>● More guidance was requested</li> </ul>

### Financial Impact

- Solvency ratio under QIS3 is less than under Solvency I
- 98 percent of insurers can cover MCR
- New Solvency regime does not require extra capital in the European insurance market as a whole
  - For 30 percent of insurers, the available surplus would **increase** by more than 50 percent
  - For 34 percent of insurers, the available surplus would **decrease** by more than 50 percent
  - 16 percent of insurers would need to **increase** their capital in order to meet their SCR

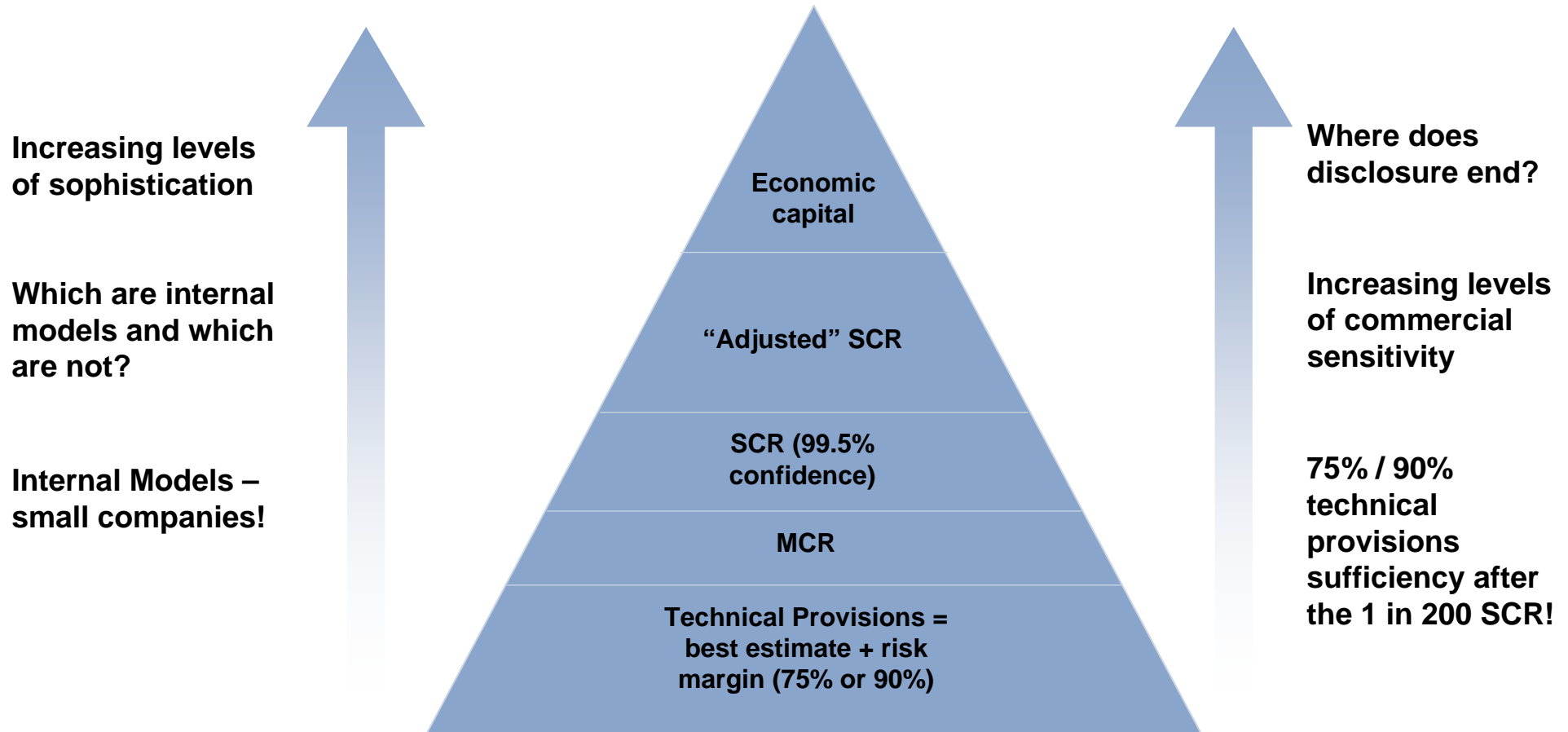
### Costs

- The preparation of QIS3 took companies one to three person months
  - Insurers spent significantly less time on preparing QIS3 than on preparing QIS2
    - QIS3 requirements more streamlined than QIS2 requirements
    - Effects of learning curve

# Quantitative Impact Studies

## QIS3: Results

SCR and MCR	Findings
<ul style="list-style-type: none"><li>● MCR</li></ul>	<ul style="list-style-type: none"><li>● Modular approach yielded highly erratic results for life insurance companies due to profit-sharing issues</li><li>● QIS4 will test a simplified stand-alone approach to calculating the MCR</li></ul>
<ul style="list-style-type: none"><li>● Internal Models</li></ul>	<ul style="list-style-type: none"><li>● On average 25 percent lower than SCR</li><li>● CRO Forum member companies 29 percent lower than SCR</li><li>● Higher credit risk than standard formula</li></ul>
<ul style="list-style-type: none"><li>● Groups</li></ul>	<ul style="list-style-type: none"><li>● No definitive results; diversification benefits vary significantly between groups</li></ul>



**What are you really going you use to run the company?**

## Objectives - summary

- **The four principal objectives of Solvency II as specified by the European Commission:**
  - Deepen integration of the EU insurance market;
  - Protect policyholders and beneficiaries;
  - Improve the competitiveness of EU insurers and reinsurers; and
  - Promote better regulation.
- **There are six essential elements of the Solvency II framework that are directly relevant to supervision:**
  1. An economic risk-based solvency regime that focuses on sound principles, not arbitrary rules, and that promotes alignment of regulatory requirements and industry practice;
  2. Adoption of an holistic approach to risk measurement and management;
  3. An economically sound forward-looking approach to supervision;
  4. A proportionate supervisory response, including a ladder of supervisory intervention between Minimum Capital Requirements and Solvency Capital Requirements;
  5. A risk-based capital requirement based on insurers' calculation of VaR, calibrated to a 99.5% confidence level over a one-year period; and
  6. A commitment to transparency and the principle that an economic approach to valuation is fundamental to achieving transparency for insurers and reinsurers.

**Could potentially change the industry, because...**

- Of increased consolidation due to increased capital needs
- Of competitive advantages for well diversified companies
- It forces companies to pay more attention to use of, and return on, capital
  - more adequate pricing of products (e.g.. embedded options)
  - active balance sheet management (e.g.. securitization of liabilities)
- It fosters better risk management, enabled through introduction of
  - rigorous processes
  - substantial investments in modelling capabilities
- Some companies may fail in addressing the emerging trends in a timely fashion
- Firms will be required to formalise their systems of governance with clear allocation of responsibilities, documented policies and procedures and effective reporting and reporting lines
- Detailed capital and valuation requirements with a required market-consistent 'economic' approach to the valuation of assets and liabilities. Ultimately the solvency reporting standards will be aligned with accounting standards

- Economic approach will show much better who does well, and not so well, with all inevitable consequences
- Some consolidation will happen, but there will still be many local opportunities/niches
- Risky products may be withdrawn, or become considerably more expensive
- New products will emerge, particularly for balance sheet management
- “Quants” will continue to be in high demand, with the risk of a widening knowledge/application gap (“Black box”)
- Existing governance and risk management systems will likely need enhancements to benefit from potential lower capital charges

**BUT: Solvency II is a necessary and good step for the entire insurance and reinsurance industry as the management of risk, and its financial consequences is at the heart of what they do!**