

## SOLVENCY II Level 2 Implementing Measures

Position after the 3 waves of Consultation Papers and  
the Quantitative Impact Study 5 Technical Specifications

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CASUALTY LOSS RESERVE SEMINAR  
21 September 2010  
Int - 2: Solvency II - Update and Current Events



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### Status Quo

Solvency II Level 2 implementing measures

- § The European Commission asked CEIOPS to launch a consultation process with the (re)insurance industry players
  - q Three waves of Consultation Papers (CPs)
    - ü 1. wave of 12 CP's published on 26<sup>th</sup> March 2009.
    - ü 2. wave of 24 CPs published on 2<sup>nd</sup> July 2009.
    - ü 3. wave of 17 CP's published on the 2<sup>nd</sup> November 2009.
  - q The outcomes from these consultations assisted CEIOPS in issuing final advices to the European Commission.
- § The following diagram shows the main topics addressed in the Level 2 implementation measures, organised by theme, with the topics addressed in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> waves of CPs illustrated in orange, blue and red respectively.

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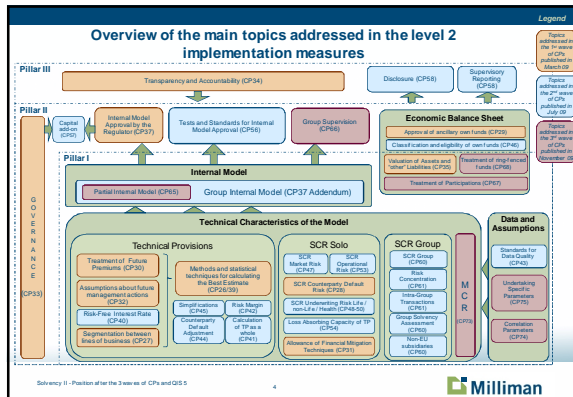
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## Economic Balance Sheet

*CP 26 – Technical Provisions – Methods and Techniques for calculating the Best Estimate*  
*CP 27 – Segmentation*  
*CP 30 – Treatment of Future Premiums*  
*CP 35 – Valuation of Assets and “other Liabilities”*  
*CP 39 – Technical Provisions – Actuarial and statistical methodologies to calculate the Best Estimate (BE)*  
*CP 42 – Calculation of the Risk Margin*  
*CP 46 – Classification and eligibility of own funds*

*QIS5 – Technical Specifications*

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### Economic Balance Sheet

*Main Principles to Remember*

§ The methods of valuation of the different components of the balance sheet are based on **two important principles**:

- **Convergence of the regulatory environment:** Sol Economic Balance Sheet is defined according to the IFRS principles. This approach should
  - Lead to cost & resource synergies between Sol and IFRS
  - Ease financial communications as reporting is on a consistent basis.
- **Predominance of the Balance Sheet approach:** Valuation principles for assets and liabilities lead to
  - Own funds are the balance between the valuation of assets and liabilities
  - Recognition of future profit/loss generated by existing contracts and reserve strengthening/redundancies
  - Future cash-flows generated by the assets are split between
    - the policyholders (Best Estimate and Risk Margin),
    - taxes (Deferred taxes) and
    - profit allocated to shareholders.
  - Therefore the economic valuation leads to the consideration of future profits within the net assets.
  - Sol's balance sheet approach is expected to lead to new KPIs within the industry.

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**Economic Balance Sheet**

*Technical Provisions*

Valuation of non-life insurance liabilities on a market-consistent basis:

- § Technical Provisions are on a Marking-to-Model bases as insurance liabilities are illiquid.
- § Marking-to-Model is based on future cash-flows:
  - Cash-flows should be estimated gross of amounts recoverable from reinsurance contracts
  - Cash-flows should account for the full lifetime of existing insurance contracts and reflect policyholder behaviour and management actions
  - Companies need to consider all inflows (e.g. premiums and receivables) and outflows (i.e. claims payments, expenses ...)
  - Cash-flows for premiums provision and outstanding claims need to be estimated separately
- § Marking-to-Model needs to consider:
  - replace unearned premiums reserve by premiums provision. Premiums provision corresponds to the present value of future cash inflows and outflows related to the unexpired risk. Consequence: expected future profits or losses on unexpired risk are recognised in the economic balance sheet.
  - tacit renewals which have already taken place at the valuation date should be included in the calculation of the best estimate of the premiums provision.
  - expenses (allocated and unallocated) will be included in projected future cash-flows.
  - Reinsurance recoverable is shown as asset. The valuation should follow the same principles as the gross claims provisions. Recoverable are exposed to counterparty default risk and do not require any risk margin.




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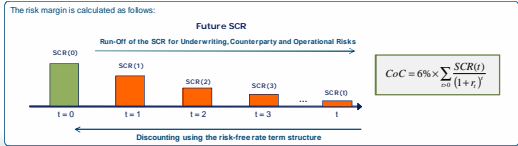
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**Economic Balance Sheet**

*Technical Provisions*

- § The choice of discount rate:
  - Risk free interest rate term structure (based on government bonds) vs. credit swap rates.
  - QIS4 and CP40 favoured use of government bonds and QIS5 is based on credit swap rates.
- § The rate term structure will include a 50% illiquidity premium in QIS5 for non-life liabilities.
  - This is new compared to QIS4 and contrary to the final advice of CP40.
- § Risk margin is based on cost of capital approach with a rate of at least 6%.
  - Risk Margin calculation is on undertaking level in QIS5, hence enjoys diversification benefit (contrary to QIS4 and final advice of CP42)




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**Economic Balance Sheet**

*Technical Provisions - Methodology*



- CEIOPS has kept the QIS4 approach for segmentation:
  - § 14 risk classes for Non-Life (Re)insurance and
  - § a double segmentation in Life (Re)insurance with 16 classes.
    - A policy covering several risks needs to be split into different segments.
  - § Pillar 3: CEIOPS might ask economic capital to be split according to the same segmentation.

14 segments (including 1 Worker's compensation ) in Non-Life Reinsurance	
Non-Life Insurance and Proportional Reinsurance	Non-Life Non-Proportional Reinsurance
Worker's compensation	Casualty
Accident and Health	Property
Motor Vehicle Liability	Marine, aviation, transport
Motor other classes	
Marine, aviation, transport	
Fire and other damages to Property	
Third-Party Liability	
Credit and Surety	
Legal Expenses	
Reinsurance	
Miscellaneous	




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## Economic Balance Sheet

### Own Funds

§ Own funds are classified in three tiers which are based on 6 key characteristics: subordination, loss absorbency, sufficient duration, free from requirements to redeem, free from mandatory fixed charges and absence of encumbrance.

Nature	On balance sheet (basic own funds)	Off balance sheet (ancillary own funds)
High	Tier 1	Tier 2
Medium	Tier 2	Tier 3
Low	Tier 3	

Source: European Commission

In addition, capital tiering will have to satisfy the following requirements:

- q SCR Limits applicable
  - Tier 1 items  $\geq$  50%
  - Tier 3 items  $<$  15%
- q MCR Limits applicable
  - Tier 1 items  $\geq$  80%
  - Tier 3 items = 0
- q Other Limits
  - Tier 1: (preference shares + subordinated liabilities)  $\leq$  20%

- Supervisory approval of own funds is principle based: The undertaking assesses the appropriate classification of the own fund item for which it seeks supervisory approval. The undertaking is responsible for providing the related documentation.

Solvency II - Position after the 3 waves of CPs and QIS 5

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## Economic Balance Sheet

### Points to note – Other topics

#### Future Premiums

§ Future premiums within the valuation of the Best Estimate for technical provisions is a very sensitive issue impacting directly the capital requirement:

- q **Scope**
  - u CP 30 clarifies cases where future premiums should be included in the valuation of the Best Estimate.
  - u Some of the rules suggested in CP 30 for the treatment of future premiums may lead to incoherency
- q **Complexity of the calculation**
  - u Insurance contracts which include for example options lead to complex modelling issues (reinsurance contract with reinstatement premium is a standard simple example of an option).

#### Deferred Taxes

§ CP35 does not mention the possible tax deduction for the gross SCR.  
 § The other points relating to deferred taxes are of a lesser importance

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## SCR Solo

- CP47 – SCR Market Risk
- CP48 – SCR Underwriting Risk
- CP51 – SCR Counterparty Default
- CP53 – SCR Operational Risk
- CP75 – Undertaking Specific Parameters

QIS5 – Technical Specifications

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## Solvency Capital Requirement

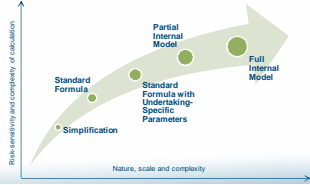
### Overall Methodology

#### § Article 101 of the Solvency II Framework Directive

– “The Solvency Capital Requirement (SCR) shall be calibrated so as to ensure that all quantifiable risks to which an insurance or reinsurance undertaking is exposed are taken into account. It shall cover **existing business**, as well as the **new business** expected to be written over the following 12 months... It shall correspond to the Value-at-Risk of the basic own funds of an insurance or reinsurance undertaking subject to a confidence level of 99,5% over a one-year period.”

§ SCR calculation must be based on appropriate methods and correspondingly documented.

§ Solvency II allows for five methods to determine SCR



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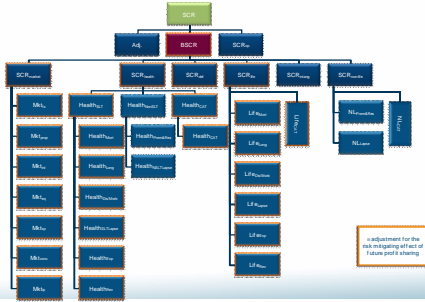
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## Solvency Capital Requirement

### Standard Formula

#### Standard Formula



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## Solvency Capital Requirement

### Standard Formula

#### Standard Formula

§ The standard formula for the SCR is a specified set of stress tests or factor based formulae that companies will have to apply to their assets and liabilities for the following risks:

- q Market
- q Non-life Underwriting
- q Life Underwriting
- q Health Underwriting
- q Counterparty Default
- q Intangibles
- q Operational

§ Standard formula uses correlation matrices to aggregate across the risks

§ The standard formula is *calibrated to the whole EU market* and may not be suitable for every single company.

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### Solvency Capital Requirement

Recent developments in the Standard Formula and USP

**Non-life premium and reserve risk**

- Many of the factors applied in calculating premium and reserve risk have increased since QIS4 leading to what may be a significant effect on the risk charges. Particularly evident for non-proportional reinsurance classes. QIS5 factors, however, tend to be lower than those in the CPs and Final Advice.
- QIS5 allows undertakings to adjust premium risk factors to allow for some of the effect of outwards non-proportional reinsurance. These adjustments are, however, not simple without sufficient data.

**Non-life catastrophe risk**

- Personalised scenarios are no longer an allowable option in QIS5.
- The use of standardised scenarios is encouraged, but factor based methods are also allowable. The standardised scenarios are, however, all EEA-based and are not suitable for non-proportional reinsurance business.
- If undertakings write material amounts of non-proportional reinsurance or have material amount of exposures outside the EU, CEOPIS would expect them to seek partial internal model approval.

**Market risk**

- Most factors and approaches for calculating market risk have increased significantly in QIS5. This includes higher spread risk factors for corporate bonds, increased currency and interest rate risks shocks and increased correlation between sub-risk groups.
- Liquidity premiums have been added.

**Undertaking specific parameters (USP)**

- USP can be used to adjust the standard formula parameters to reflect an undertaking's risk profile for non-life premium and reinsurance, but not catastrophe risk.
- The specified methodologies to be used in deriving the USP have changed from QIS4 to QIS5.
- An undertaking should not use both USP and geographical diversification as this would result in double counting.

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### Solvency Capital Requirement

Recent developments in the Standard Formula

**Minimum Capital Requirement (MCR)**

- The calculation of MCR combines a linear formula with cap of 45% of SCR and a floor of the higher of 25% of SCR and an absolute floor expressed in euros, depending on the nature of the undertaking.
- The linear formula depends on technical provisions and written premiums, for each line of business and line of business specific factors.

**Other changes that may have a significant impact**

- A non-life lapse risk module has been introduced to take account of the effect of higher than expected policy lapse rates.
- An intangible asset risk charge has been introduced as 80% of the fair value of intangible assets.
- Correlation factor between non-life premium and reserve risk and non-life catastrophe risk has increased from 0 to 0.25.
- Geographical diversification has been kept in QIS5 despite CEOPIS proposing that it should be removed. Syndicates may either assume that all business falls into one segment or may use the specified methodology and geographical segmentation. Changes have, however, been made to this methodology. One of the changes was the reduction in number of separate geographical regions from 54 to 15.
- In QIS5, risk margins must take account of diversification between lines of business. Risk margins are still required for each line of business. The allocation of the whole account risk margin, allowing for diversification, must recognise the contribution of each line of business to the overall SCR over the lifetime of the liabilities.
- An illiquidity premium adjustment to the risk-free interest rate term structure will now be allowed for in the discounting of cash-flows. Non-life contracts should use 50% of the illiquidity premium while risk margins should use no adjustment.
- The risk-free interest rate term structures have changed significantly since QIS4.
- The QIS5 structure of the life underwriting risk module is mainly unchanged from that in QIS4. There is a reduction in the longevity stress, an increase in the mortality stress and a few adjustments in the lapse and expense risk modules.

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### Comparison of Standard Deviation $\sigma$ for Premium Risk

Premium Risk $\sigma$	QIS 4	CEIOPS Final Advice	QIS 5
Motor vehicle liability	9.0%	10.0%	10.0%
Other Motor	9.0%	10.0%	7.0%
MAT	12.5%	20.0%	17.0%
Fire	10.0%	12.5%	10.0%
3rd-party liability	12.5%	17.5%	15.0%
Credit	15.0%	20.0%	21.5%
Legal expense	5.0%	7.5%	6.5%
Assistance	7.5%	10.0%	5.0%
Miscellaneous	11.0%	20.0%	13.0%
NP reins (prop)	15.0%	30.0%	17.5%
NP reins (casualty)	15.0%	30.0%	17.0%
NP reins (MAT)	15.0%	30.0%	16.0%

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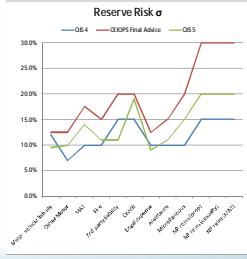
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**Comparison of Standard Deviation  $\sigma$  for Reserve Risk**

Reserve Risk $\sigma$	QIS 4	CEIOPS Final Advice	QIS 5
Motor vehicle liability	12.0%	12.5%	9.5%
Other Motor	7.0%	12.5%	10.0%
MAT	10.0%	17.5%	14.0%
Fire	10.0%	15.0%	11.0%
3rd-party liability	15.0%	20.0%	11.0%
Credit	15.0%	20.0%	19.0%
Legal expense	10.0%	12.5%	9.0%
Assistance	10.0%	15.0%	11.0%
Miscellaneous	10.0%	20.0%	15.0%
NP reins (prop)	15.0%	30.0%	20.0%
NP reins (casualty)	15.0%	30.0%	20.0%
NP reins (MAT)	15.0%	30.0%	20.0%




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