Preparing for Solvency II
Points of Debate in the Standard Formula

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SCOR

Agenda

1	Risk-based solvency regulation: Solvency II
2	Economic balance sheet and market consistent valuation
3	The Available Capital
4	The Solvency Capital Requirement (SCR)
5	Conclusion

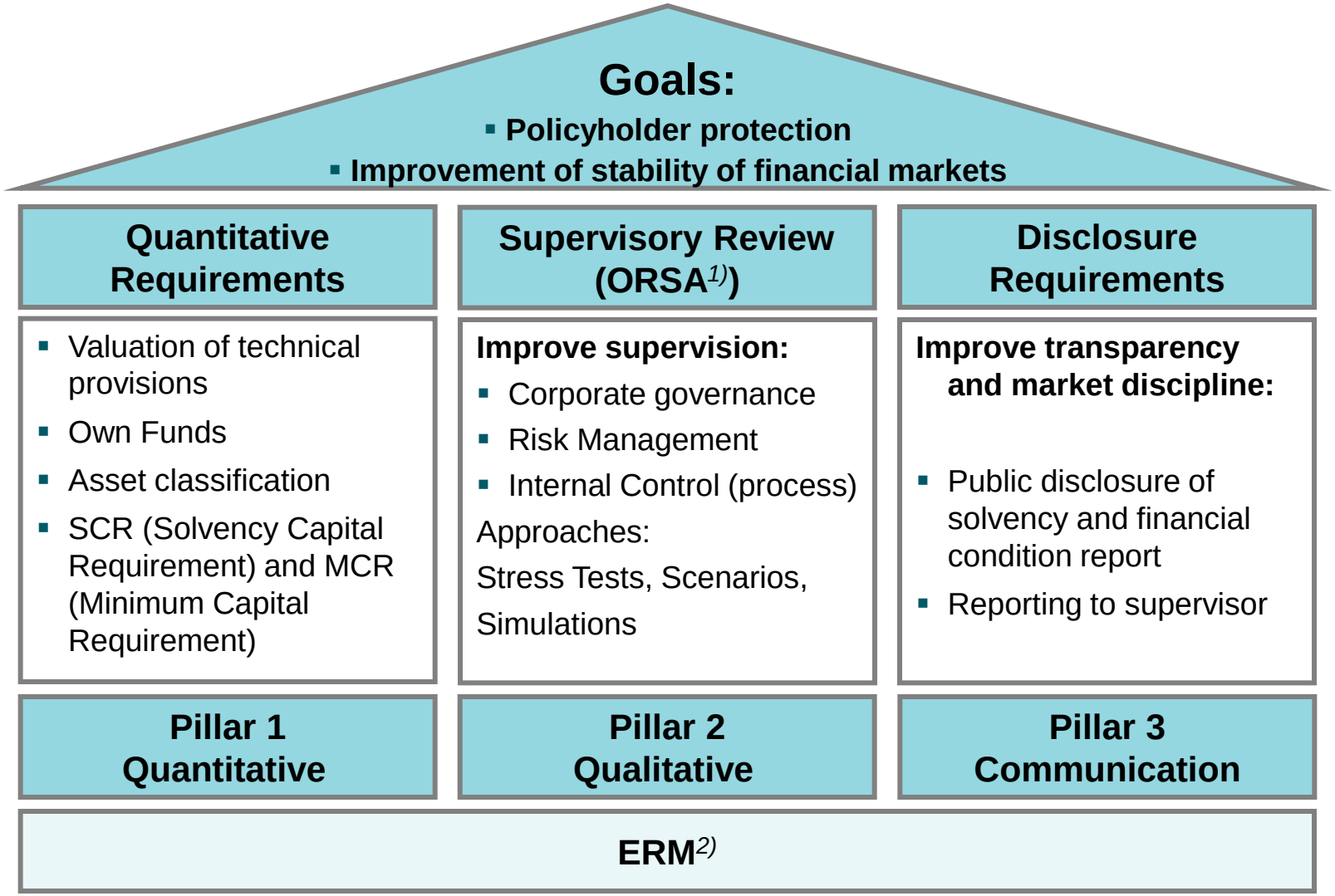
Lamfalussy process: a progressive step-by-step regulatory definition

Process for producing EU financial services legislation that can cope with rapidly changing technical standards, a 4-level approach:

	What is it?	What does it include?	Who develops?	Who decides?
Level 1	Solvency 2 directive	Overall Framework principles	European Commission	European Parliament, European Council
Level 2	Implementing measures	Detailed implementing measures	European Commission	EIOPC[1)] EIOPA[2)]
Level 3	Supervisory standards	Consistent guidelines and common standards	EIOPA[2)]	EIOPA[2)]
Level 4	Enforcement	Monitoring compliance and enforcement	European Commission	European Commission

1) EIOPC: European Insurance and Occupational Pensions Committee
2) EIOPA: Committee of European Insurance and Occupational Pensions Supervisors

Solvency 2 – The Three Pillars



1) *ORSA: Own Risk and Solvency Assessment*
2) *ERM: Enterprise Risk Management*

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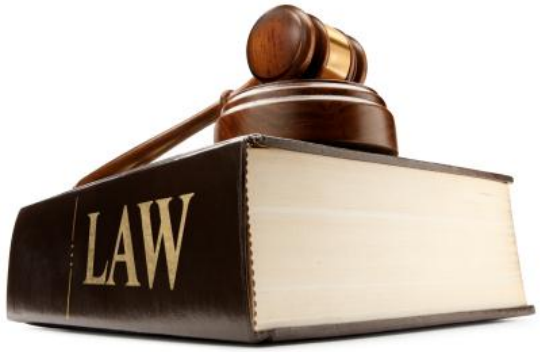
Solvency 2 – Pillar 1 – Internal Model and Quantitative aspects requirements

DIRECTIVE 2009/138/EC Article 100 :



- *"Member States shall require that [reinsurers] **hold eligible own funds** covering the Solvency Capital Requirement.*

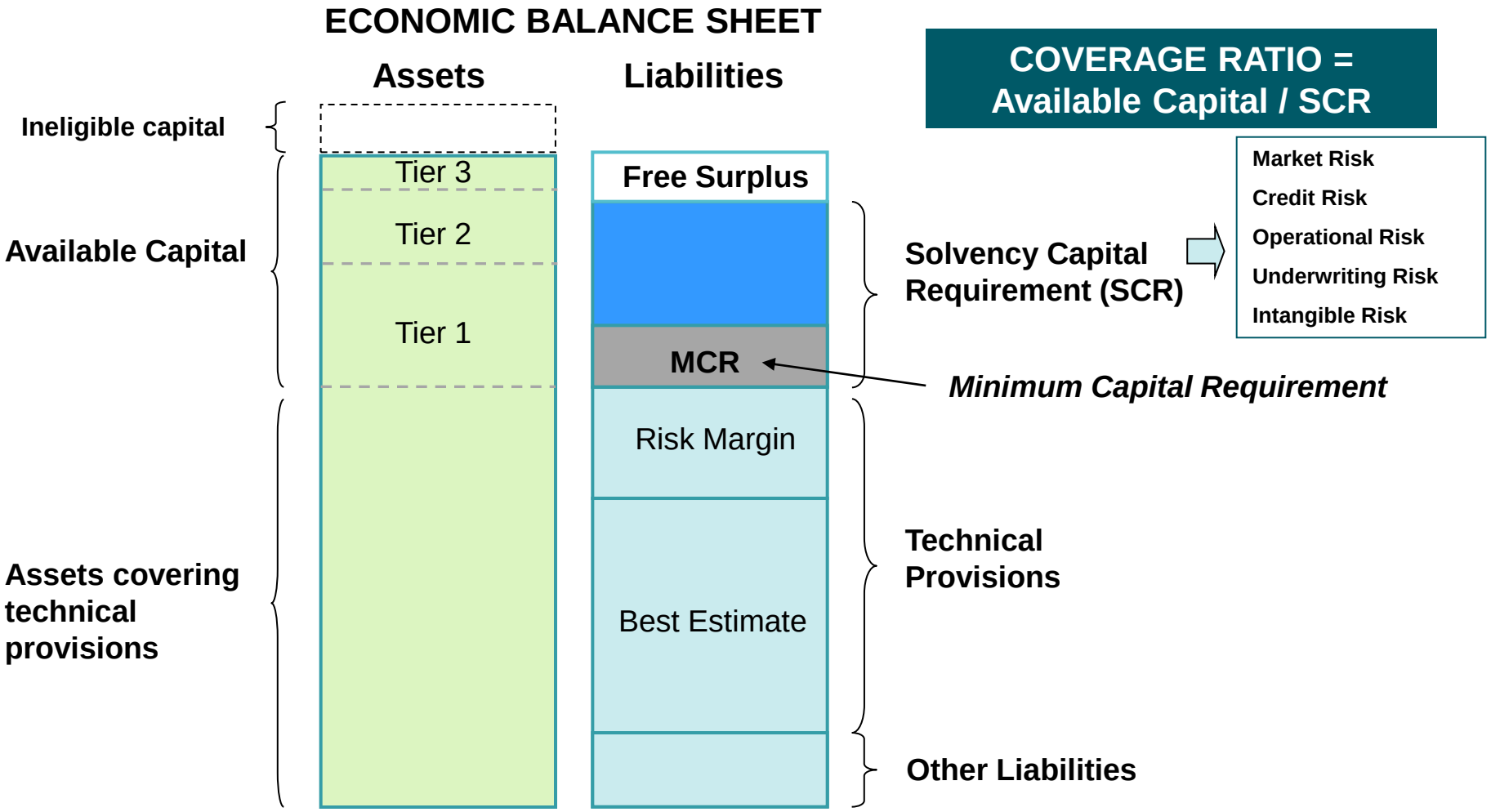
- *The **Solvency Capital Requirement** shall be **calculated**, either in accordance with the **standard formula** in Subsection 2 or using an **internal model**, as set out in Subsection 3."*

Solvency 2 quantitative assessment: a two steps calculation

- **Available capital**: Economic Balance Sheet
- **Required capital**: Internal Model or Standard Formula

Fifth Quantitative Impact Study QIS 5

High-Level Overview of Building Blocks



Fundamental of Market Consistent Valuation

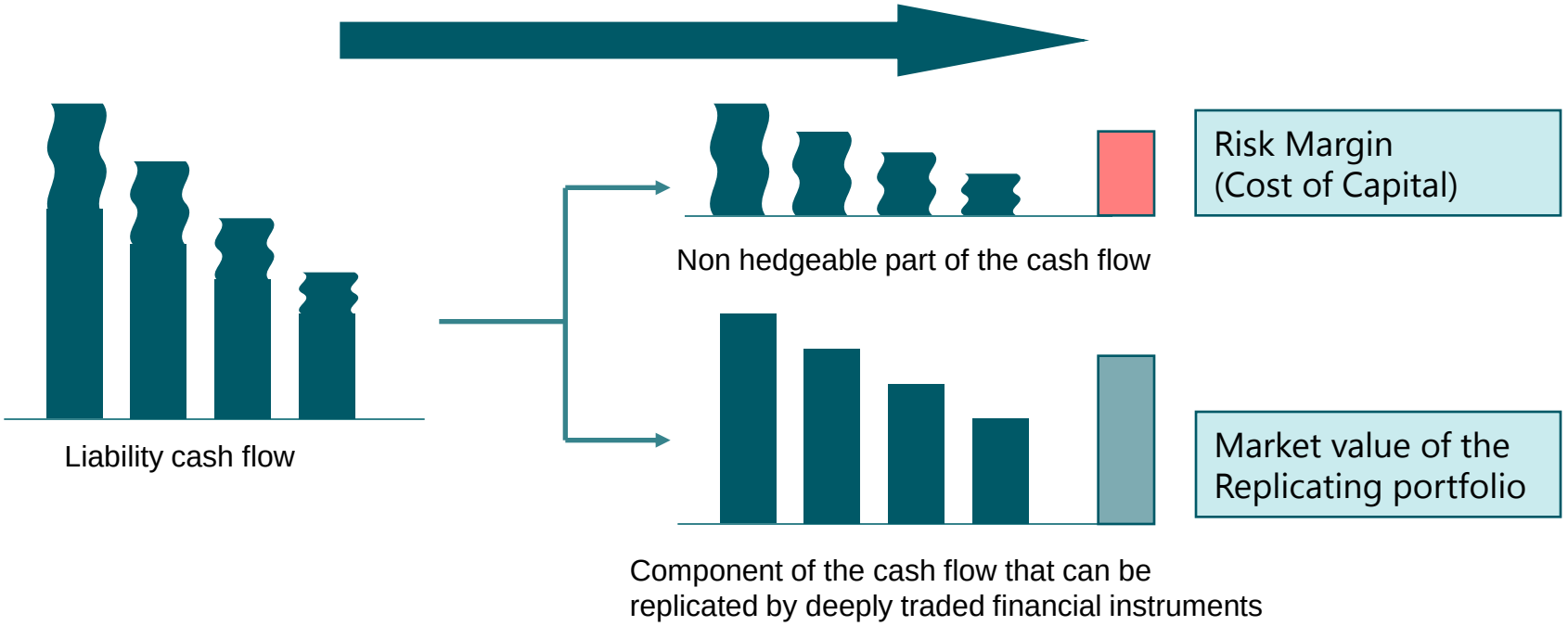
Insurance Liabilities

No reliable market prices for exit

Replicating market

Reliable market prices for exit

Transfer the problem of valuing illiquid cash flows to a problem of valuation of Liquid financial instruments



Standard Formula versus Internal Model (1/2)

- The standard formula is not particularly geared towards reinsurers
- Reinsurance represents only a very small portion of the market around 5% of the overall insurance premiums
- Reinsurance companies are the companies that have developed the most sophisticated internal models
- They have traditionally put a strong emphasis on their own risk assessment
- QIS5 and the standard formula are essentially a factor-based model, in the sense that, given a certain exposure, the capital needed to support this risk is calculated by a factor multiplying the exposure

Standard Formula versus Internal Model (2/2)

- The factor is calibrated on industry standards that naturally mostly reflect insurance risks
- For reinsurer, this would fit well quota shares where they participate in a portion of the risk, but not for non-proportional business like excess of loss
- A non-proportional contract will only start to pay after a certain amount of claims have already been paid by the insured and up to a defined amount
- They differ significantly from proportional contracts: they react non-linearly to losses and usually have higher capital intensity (risk-adjusted capital per unit of risk exposure) than proportional treaties

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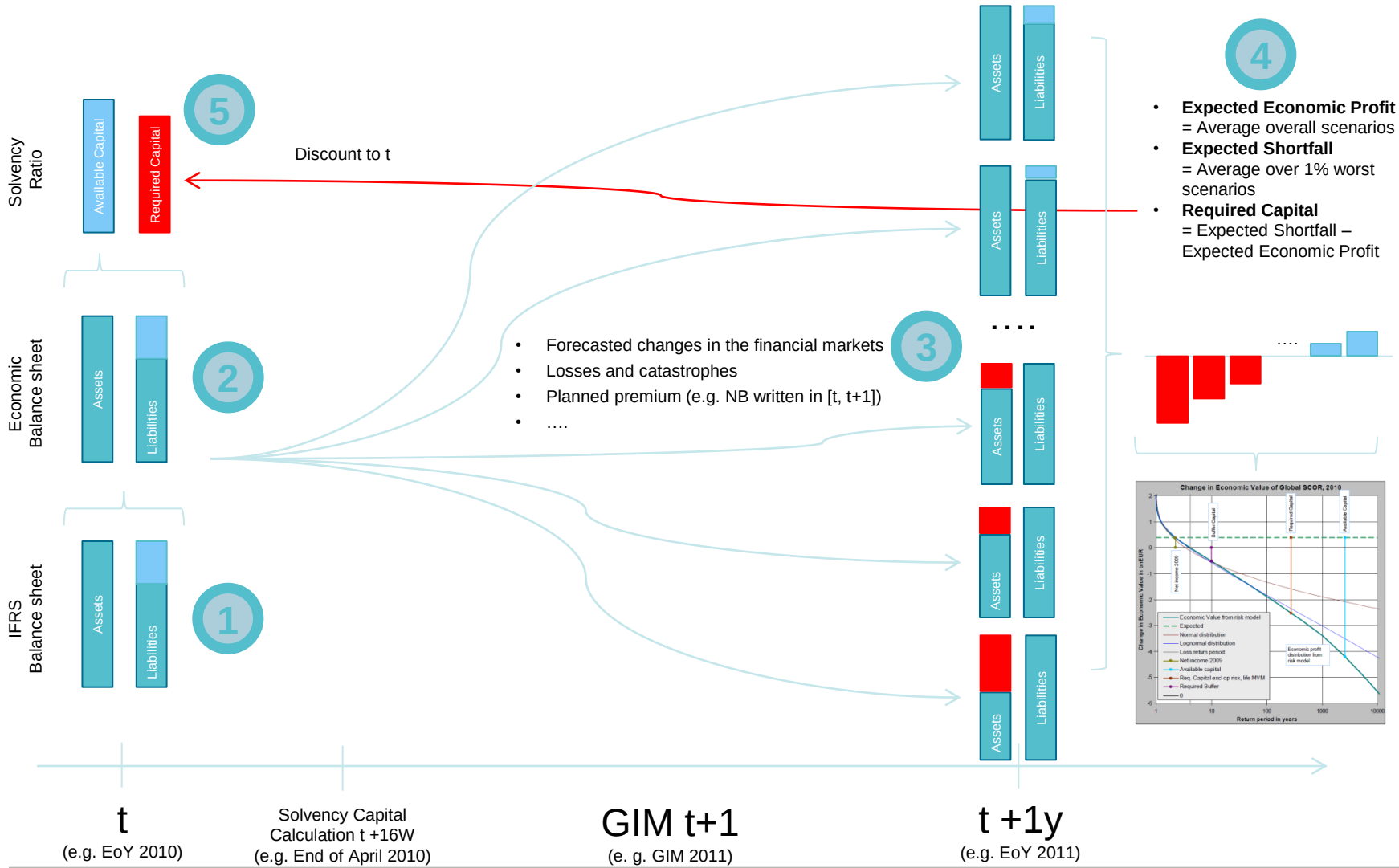
Risk Margin and Diversification

- The computation of the risk margin depends on the way the non-hedgeable part of the liability is defined
- If the liability is supposed to be valued standalone, the risk margin should be computed on the standalone capital
- This would imply huge risk margins for company to carry over and it would not be realistic as every company buying liability would have their own portfolio that would diversify the risk
- The Swiss Solvency Test (SST) allows to compute the risk margin on the entire portfolio and thus to benefit from the full diversification
- Solvency II requires to compute the risk margin for each legal entity and then sum them up. In the case of SCOR this means an increase of the risk margin of 24.3%

Risk Margin and Timing

- The risk margin can be computed at different time
- It could be computed at t_0 when the available capital is computed, or at t_1, the time at which the Solvency Capital Requirement (SCR) is evaluated
- Arguably, since the SCR is here to guarantee payment in the first year, it would be double counting to subtract the cost of capital for the first year
- In the SST, it is consistently computed from t_1. In the standard formula, there is a certain confusion concerning the timing of the SCR computation and the risk margin is required to be computed at t_0
- The difference in the case of SCOR is an addition of 17.4% to the risk margin for the first year

The time view in an internal model



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Treatment of CAT risk in the SCR

- The P&C Cat methods provided in QIS5 technical specifications are inadequate for reinsurance and do not properly reflect the exposure to natural catastrophes (CAT)
- The method applied to internationally diversified institutions is factor based. The factors are multiplied by the P&C premiums, which are considered as representative of the company's exposure
- In particular, take great care to manage their CAT exposure in order to achieve maximum diversification and reap the benefits of this in terms of risk-adjusted capital
- Using our internal model to compute the CAT risk would reduce it by 59.1% for the standalone CAT risk

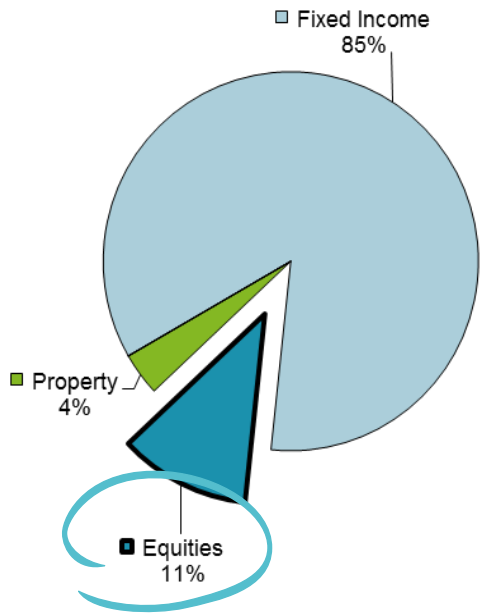
Assets treatment in QIS5

Equity Capital Charge not properly designed

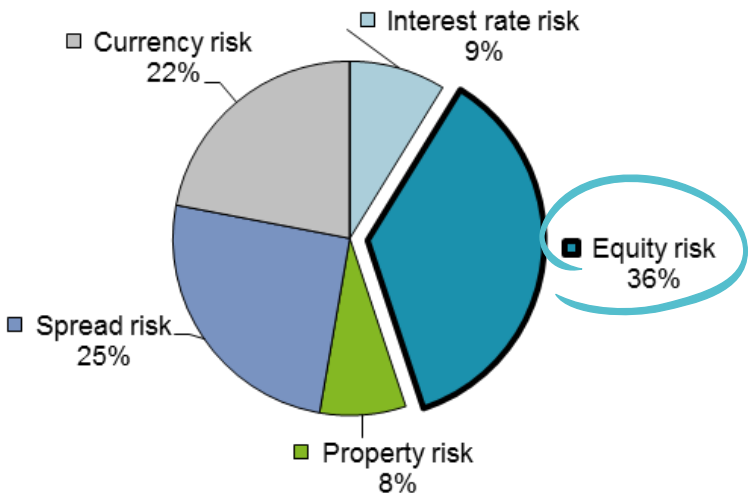
Equities represent only 11% of investment portfolio, whereas they weight 36% of capital requirement after diversification

Investment portfolio

As of 31/12/2009
asset classes at fair value



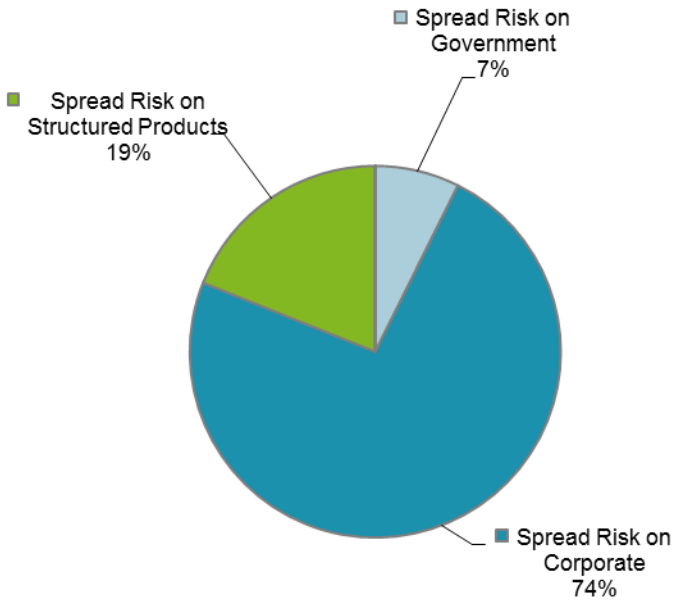
Capital requirements after diversification



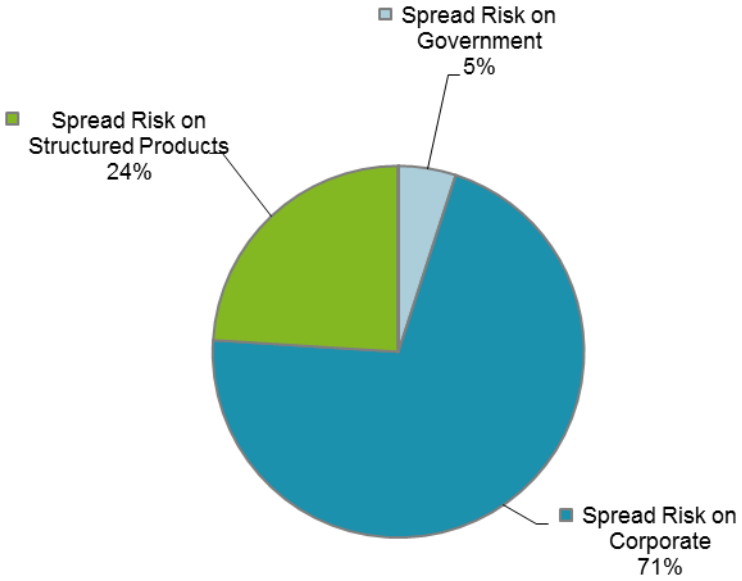
Assets treatment in QIS5

Spread Risk Analysis and sensitivity to ratings of issuers

Capital requirements



Capital requirements if all AAA rated



Capital Reduction when assets AAA rated			
Gov.	**Corp.**	**Struc.**	**Total**
-65%	-51%	-35%	-49%

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- Solvency II should concentrate on the principles rather than on developing a one-size-fit-all standard formula that is bound to have strong weaknesses
- Too much emphasis has been put on Pillar 1 and on a standard formula, while there should be more work on Pillar 2 developing incentives for companies to develop their own solvency and risk assessment (ORSA)
- Times of crises are times of reshaping of the economic landscape. The finance industry will also go through a phase of questioning
- The introduction of risk-based solvencies, like Solvency II, will help the insurance industry to better weather the crises to come and to provide more efficient services to their customers