Solvency II Insights for North American Insurers

CAS Centennial Meeting
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Agenda

1 **Introduction to Solvency II**

2 Pillar I – Risk Quantification

3 Pillar II – Risk Management and Governance

4 North American Insurer Takeaways

Solvency II is Based on Lessons Learned from the Current Supervisory Regime

Regulator's aim?

- To foster policyholder and consumer protection
- To increase risk sensitiveness of prudential framework and promote better risk management and risk steering
- To achieve a level playing field across Europe
- To provide transparency on underlying risks

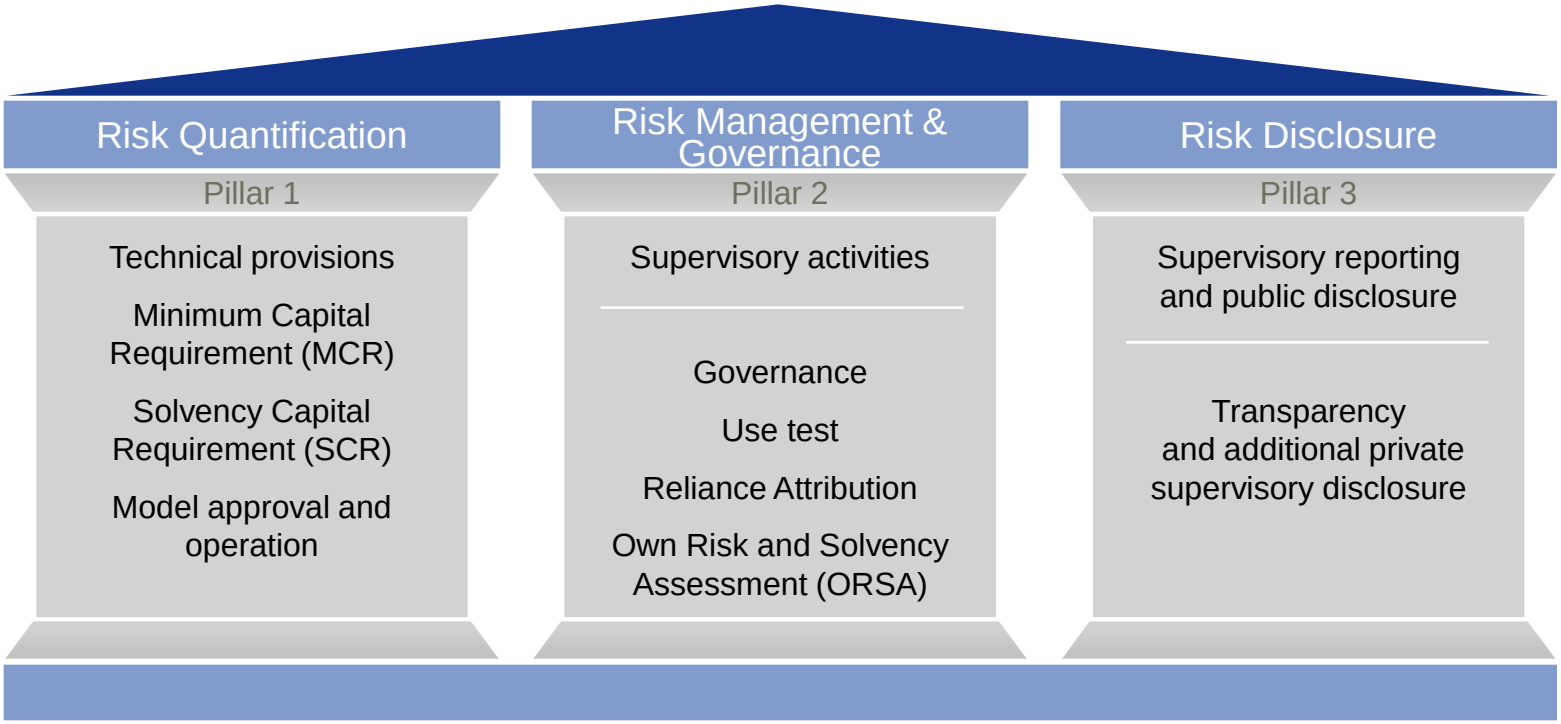
Industry's aim?

- Align external capital and reporting requirements with internal management approach
- Provide greater transparency to the market in order to remove the "opacity" discount suffered by the industry

Why?

- Solvency I is an old fashioned approach based on simple haircuts on the amount of premiums or reserves.
- Solvency I has no adequate mechanism to detect a crisis scenario early enough

Solvency II – A Three-Pillar Structure



- Principle-based approach to supervision, major focus on Risk Management
- Market consistent approach for valuing assets and liabilities
- Capital requirements linked to a company's risk profile
- More significant disclosure requirements

Solvency II – Challenge but also Opportunity

	Challenge	Opportunity
Capital Requirement	▪ Higher volatility of Solvency ratio ▪ Uncertainty of regulation ▪ Different capital requirements in non-EEA* countries ▪ Possible changes in the definition of available capital	▪ Better alignment of capital requirement with underlying risk profile allowing for better steering of business (including reinsurance strategy) ▪ Possibility of increased diversification benefits reducing overall capital requirement
Business Implications	▪ Alignment of product pricing and development to Risk Capital requirements ▪ Enhanced Asset-Liability-Management for investment strategy ▪ Higher reporting & disclosure burden	▪ Better utilization of internal expertise to optimize product and investment strategy ▪ Potential for more efficient corporate structures ▪ Improved understanding and management of risk

* European Economic Area

2

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Pillar 1 – Options Within Constraints

Regulations

- **Market consistent** approach to the **valuation** of both assets and liabilities
- Technical provisions are valued independently of the backing assets and are calculated on a best estimate basis (discounted at a risk free rate)

Model Options

- **Standard formula: Non-tailored approach**, significantly easier and cheaper than full Internal Model. Option to tailor some underwriting parameters.
- **Full Internal model: Bespoke** model developed by insurer **reflecting its unique risk characteristics**
- **Partial Internal model:** Some risks based on internal modelling, and some risks based on standard formula

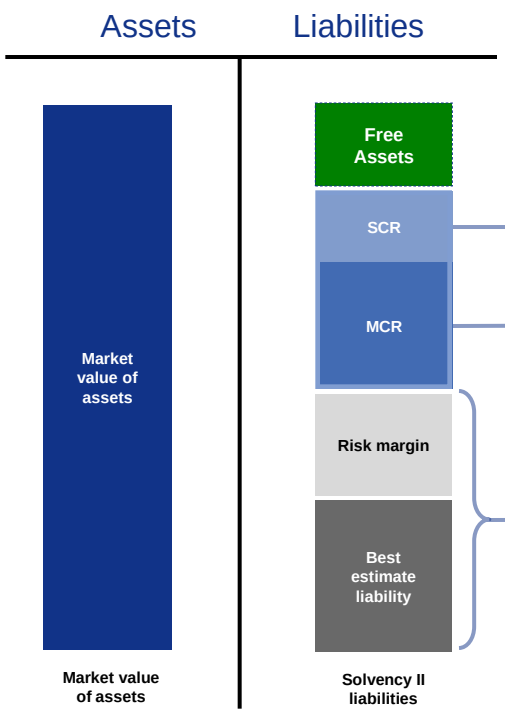
Challenges

- **Standard formula will likely need to be calculated** regardless, as the regulator has the power to request this at any time
- **Regulatory approval** of an internal model subject to stringent requirements

Internal Model Benefits

- Internal Model **reflects the actual risk** exposure of company most accurately including full acknowledgment of **diversification benefits**
- Depending on the company profile, there **may be material capital saving** from using an internal model

Capital Requirements Must be Covered by Available Own Funds



Solvency Capital Requirement (SCR)

- The SCR is the amount of capital that should be held for solvency purposes
- It is calculated based on a probability of ruin from a 1 in 200 year event

Minimum Capital Requirement (MCR)

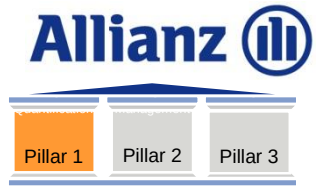
- The MCR is the minimum amount of capital that must be held for regulatory purposes

Technical Provisions

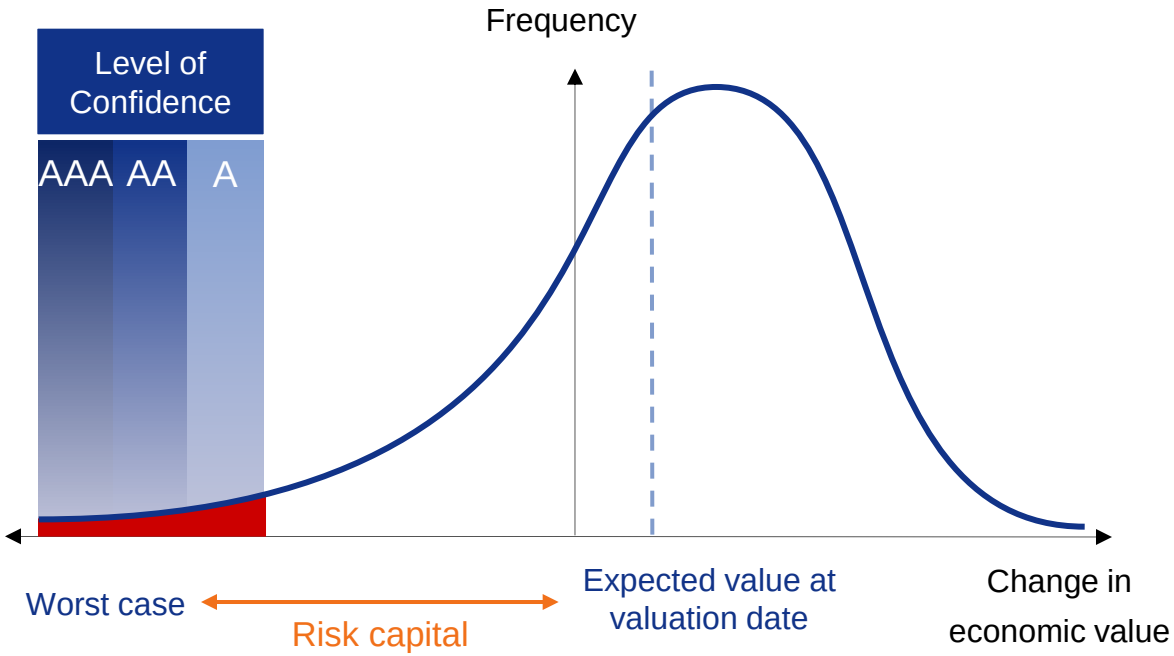
- Best estimate of all future cashflows discounted, using a risk free interest rate
- Includes a risk margin for non-hedgeable risks and unavoidable market risks

Solvency II balance sheet is market consistent and aligns required capital to relevant risks

Risk Capital Model Based on VaR Approach



One year Value at Risk (VaR) approach



Definition of Risk Capital

Risk capital quantifies the change in economic value as the minimum amount of capital required to ensure economic solvency for shock scenarios calibrated to **one year** period with a probability of **99.50%**.

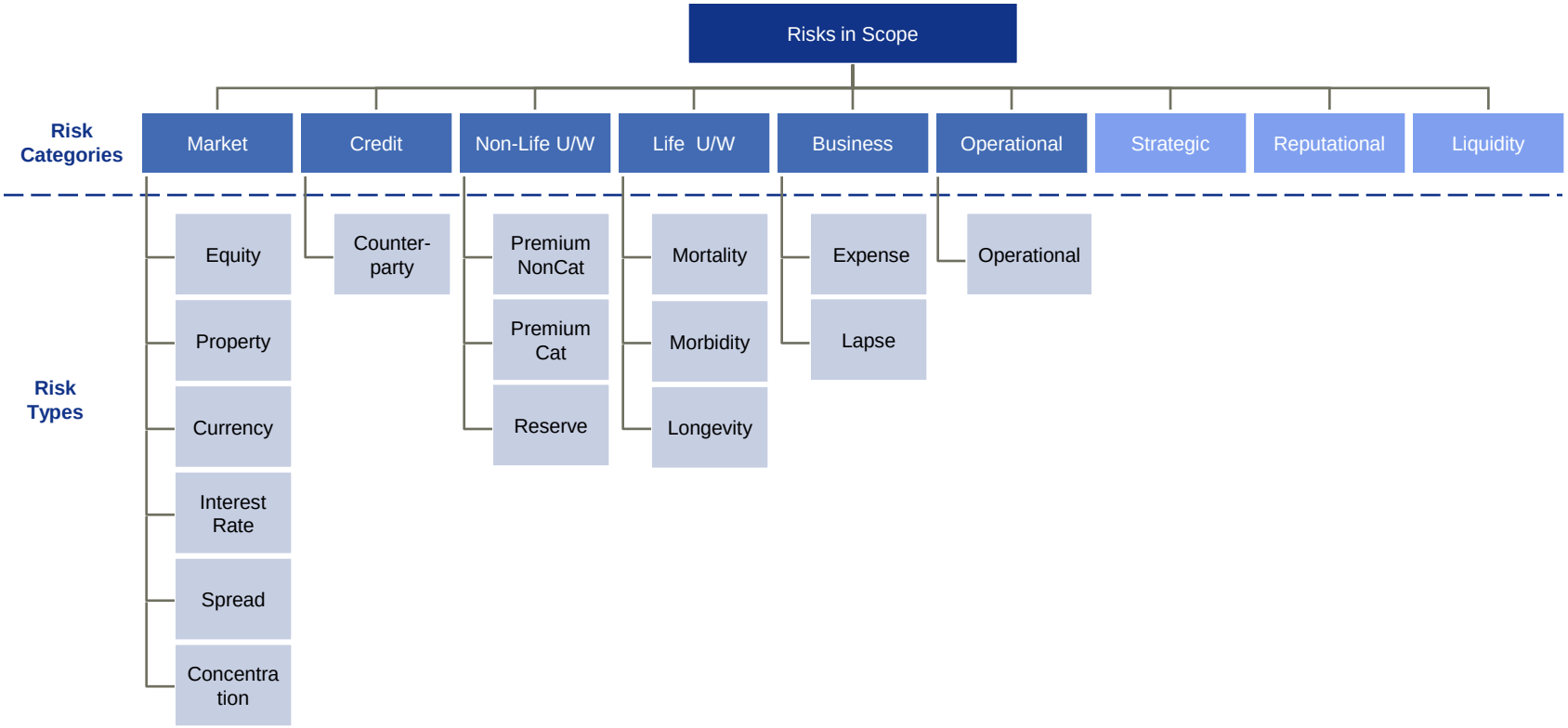
Individual minimum capitalization targets on Group and OE level

The time horizon is set to **one year** as it is generally assumed that it may take a year to find a counterparty to whom to transfer the liabilities.

Implementation applies an **instantaneous shock** on the market value balance sheet across all risks – i.e. volatilities / correlations calibrated to 1Y time horizon.

Models are supplemented with historical and management selected stress scenarios

All Relevant Risks Are Covered Within SII



Pillar I: Risk Capital Aggregation

- Correlations based on historical data or expert judgement
- Aggregate risk types accounting for correlations using a defined methodology, for example Gaussian copula
- Adjust final amounts for deferred taxes

Pillar II

Example: Market Risk Internal Model

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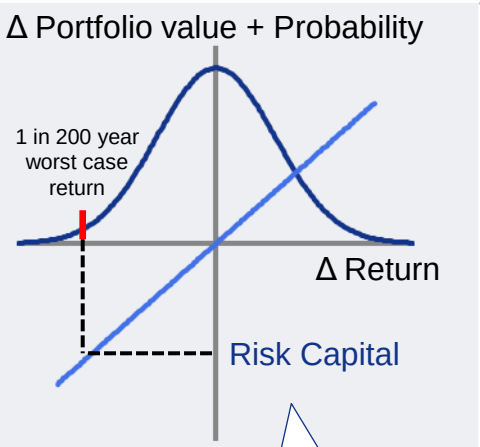
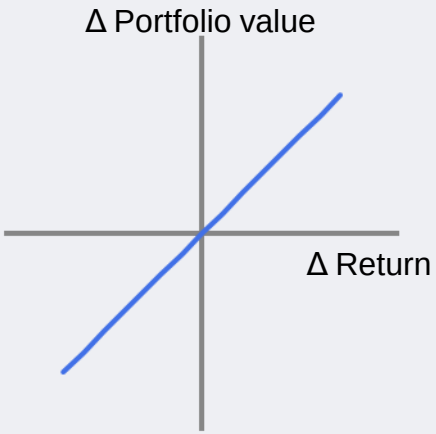
Pillar 1 | Pillar 2 | Pillar 3



1. Portfolio information



Internal model

- Mapping of assets to indices or risk factors
- Representation of liabilities

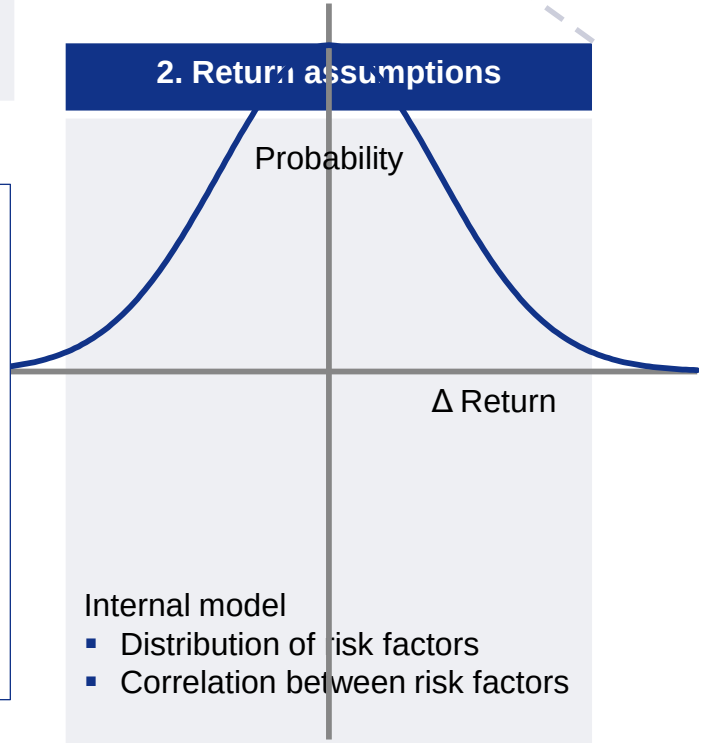
Market risk capital can be viewed as a 1 in 200 year worst case decrease in portfolio value.

Estimating this requires modelling:

- the effect which a change in asset return would have on the portfolio value and
- the probability of asset returns increasing or decreasing

Combining these gives the Market risk capital

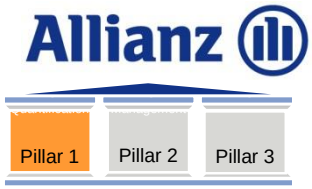
2. Return assumptions



Internal model

- Distribution of risk factors
- Correlation between risk factors

Model Governance Ensures Ongoing Quality and Appropriateness



Internal Model Governance Framework

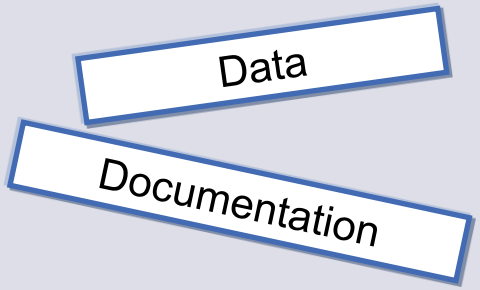
- Standard for Model Governance
- Standard for Model Change

Validation Framework

- Guideline for Model Validation
- Model Specific Validation Guidelines
- Guideline for Validation of Qualitative Elements

Additional Guidelines

- Guideline for Data Quality Assurance
- Guideline for External Models and External Data
- Guideline for Expert Judgment



SII requires initial and ongoing quality assurance and controls

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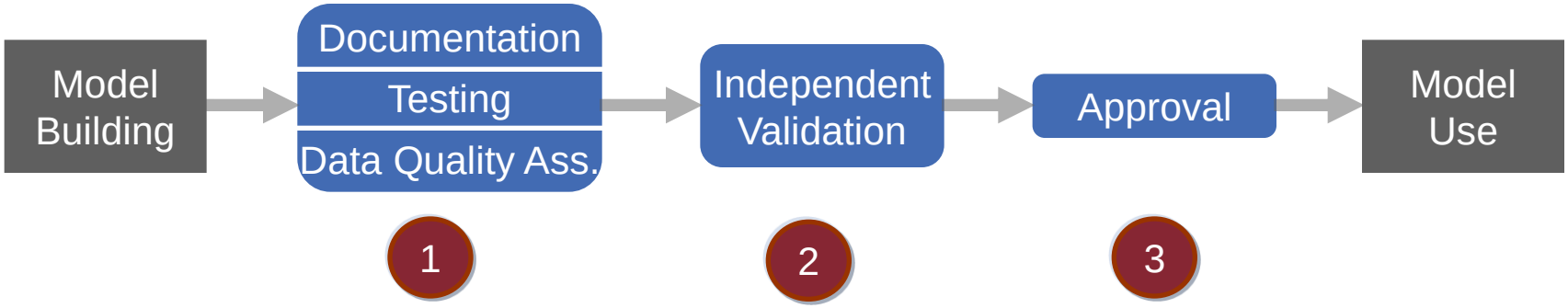
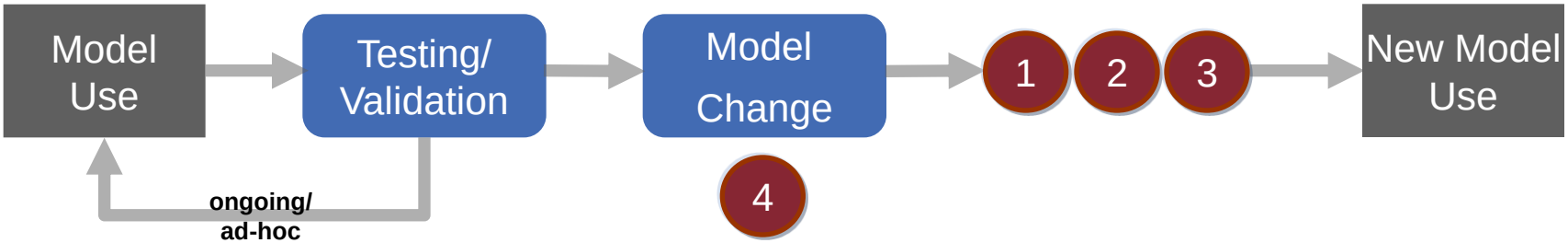
Pillar 1 | Pillar 2 | Pillar 3

Initial Model Approval Process:



Ongoing Quality Assurance and Model Change Process:



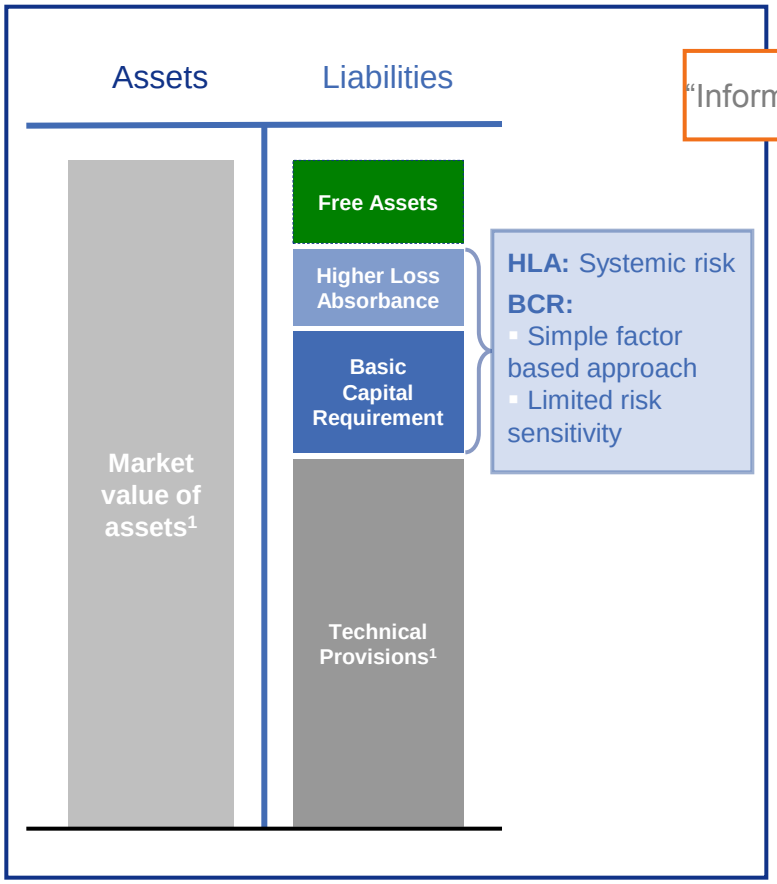
Model still adequate

Model requires change

International supervision “Common Framework” considering SII

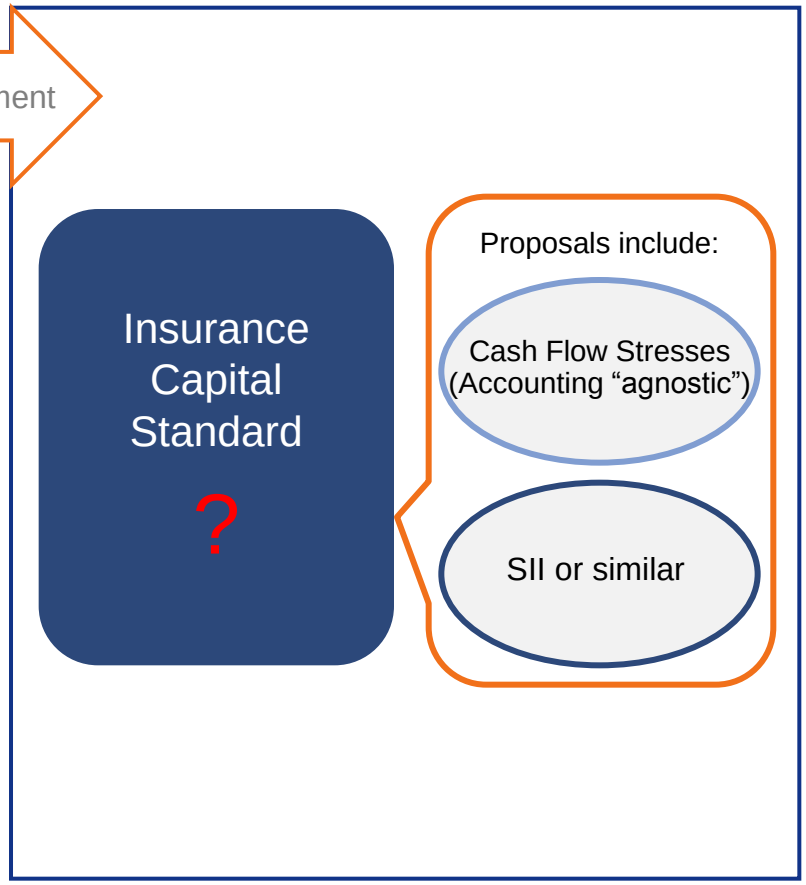
Pillar 1 | Pillar 2 | Pillar 3

Global Systemically Important Insurers
from 2015 (confidentially)



“Informed” development

Internationally Active Insurance Groups
from 2019



1 Based on current ComFrame definitions

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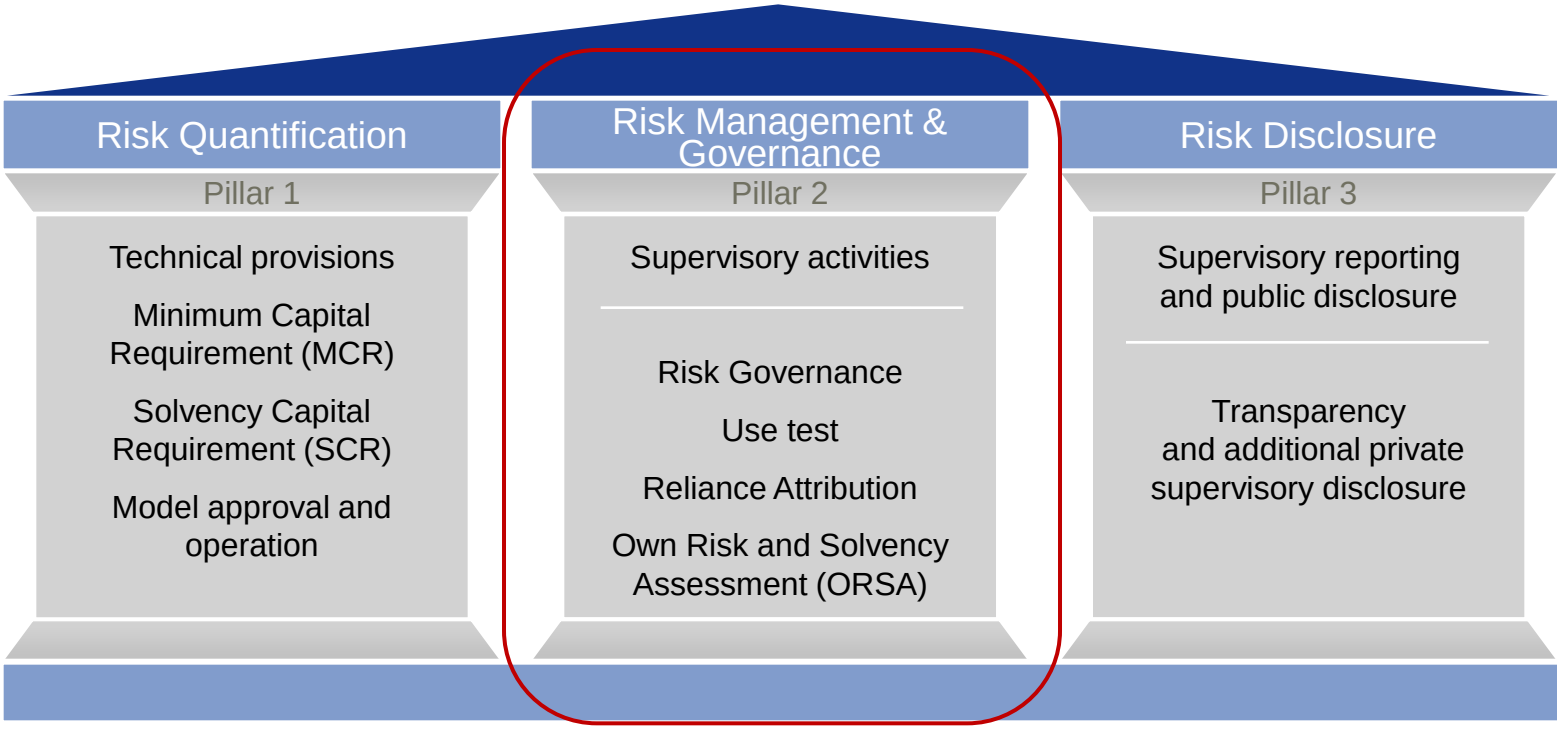
Solvency II – A Three-Pillar Structure



- Principle-based approach to supervision, major focus on Risk Management
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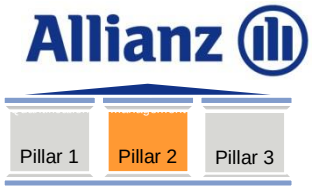
Risk Governance

Solvency II Places High Demands Regarding Risk Management and Governance…



Risk Strategy and Appetite	
The risk strategy statement should	Implementing the risk strategy. Risk appetite, limits, governance structure and risk policies need to
• Complement business strategy • Reflect unique business and risks of insurer • Define and explain the core elements of the risk appetite • Provide an overview of the organizational risk management process • Summarize all in-force limits that are part of the risk appetite	• Relate to your business and risk strategy • Emphasize how risk considerations are considered in all major decisions, activities and processes in the organization • Show the regulator the focus the organization has on a sound risk management framework – How you “live” this (risk culture)

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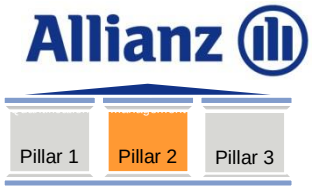
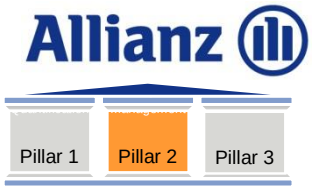


Limits need to	Risk policies must insure	The governance structure must be robust and	Risk culture is important and must be demonstrated by
• Formalize the risk strategy • Clearly define risk management authorities (break down overall limits and establish monitoring, reporting and remediation ownership) • Be linked to internal model • Avoid non-strategic risks • Constrain concentration risks	• Integration of risk management in all material activities and decisions • Consistency between the business strategy and risk management • Processes and procedure with clearly defined owners, roles, responsibilities, and requirements • Compliance with local regulatory requirements	• Ensure management level committees that deal with risk issues have clear mandates and authority • Define clear risk responsibilities for management (three lines of defense concept is valuable here) • Be aligned with business and strategic decision making • Include policies that govern the organization (e.g. fit and proper, outsourcing, reporting, compliance)	• Show risk function involvement in key committees and decisions • Highlight how recent business decisions were affected by risk considerations • Illustrate how a strong risk culture is promoted throughout the organization (**everyone owns risk**)

General Principle: Three lines of defense

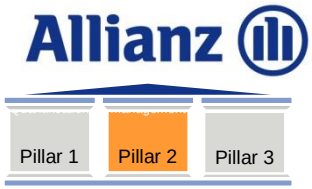


First-Line	Second-Line	Third-Line
Senior business managers are ultimately responsible for the profitability and risk profile of their business	• Risk • Compliance • Actuarial* • Legal setting the framework in which the business can take risks	Audit functions provide verification that the risk management framework is applied appropriately

* The second line of defense actuarial function is responsible for reserving and oversight as opposed to pricing and product development,

Independence of risk and internal audit functions must be demonstrated

The Use Test is a Key Requirement for Internal Model Companies



Use Test

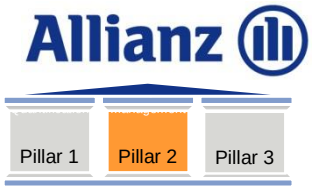
Language from Implementing Legislation

Insurance and reinsurance **undertakings shall demonstrate that the internal model is widely used in and plays an important role in their system of governance**, referred to in Articles 41 to 50, in particular:

In order to implement an internal model insurers must demonstrate that they are actively **using** the model to make business decisions (i.e. it needs to be a factor in the decision making process)

As part of proving that the business is actively using the model senior executives need to **understand** the characteristics of the Internal Model methodology

Potential Uses of an Internal Model



Business planning / strategy

Exposure management and limit setting

Capital management

External risk reporting

Incentive and target setting

Reinsurance program design

- **Setting the business strategy**
- **Capital allocation**; as well as
- **Risk strategy** including limit systems (Risk considerations with respect to all Risk Categories);

The underwriting process (Underwriting and Business Risk considerations in analysis, development as well as pricing of products);

Consideration of IM

Setting the **reinsurance strategy** (Underwriting Risk considerations in non-life insurance business);

The **strategic asset allocation** (analysis of the risk bearing capacity with respect to Market and Credit Risk).

Adequate pricing

ORSA (scenarios)

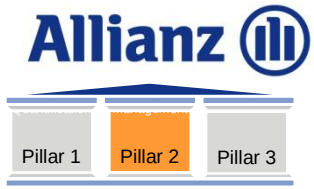
Regulatory capital

Reinsurance decisions (e.g. strategic)

Setting return on capital targets and remuneration

Asset liability management

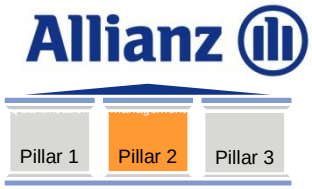
Reliance Assessment



Overall Governance and Responsibility for the Internal Model

Ensure that model assumptions are appropriate Develop processes to ensure that model changes are timely and appropriate	Create system of independent validation of risk model components. Ensure that outside models are appropriate for your business (e.g. RMS models)	Develop processes to ensure the quality of data that underlies risk capital calculations

Own Risk and Solvency Assessment (ORSA)



What is it?

The Own Risk and Solvency Assessment (ORSA) is the entirety of processes employed to identify, assess, monitor, manage and report relevant risks with a view to the adequacy of the Own Funds compared to the solvency requirements and the documentation thereof

The ORSA report needs to cover all types of risks (quantitative, qualitative and emerging) and include relevant stress testing as well as forward looking analysis
It needs to be owned, reviewed and approved by the company's top management

Regulatory Requirements

ORSA is the responsibility of the undertaking and should be regularly reviewed and approved by the undertaking's administrative or management body

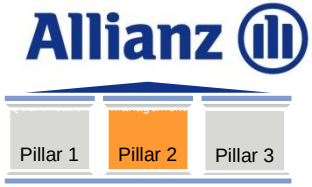
It shall encompass all material risks that may have an impact on the undertaking's ability to meet its obligations under insurance contracts

The related process and outcome should be appropriately evidenced and internally documented as well as independently assessed

It shall be based on adequate measurement and assessment processes and form an integral part of the management process and decision-making framework of the undertaking

It shall be **forward-looking**, taking into account the undertaking's business plans and projections

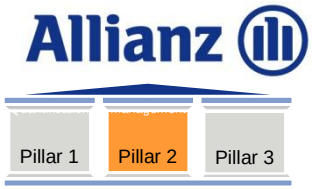
Why the ORSA is Important



Additional risks	▪ The internal model may not cover all material risks the undertaking is actually exposed to. One must assess the adequacy of the regulatory capital requirement to the individual risk position.
Risk culture	▪ The matching of the own funds to the risk profile should help promote a strong culture of risk management, which in turn is a key underlying feature of the ORSA process and, more widely, in soundly running the business.
Forward looking	▪ The ORSA provides a forward-looking perspective. With changes in the risk profile translating into changes of overall solvency needs, the assessment needs to link to external factors or the business plans in the longer term.
Continuous capital	▪ Performing the ORSA will help to ensure that insurers continuously meet the regulatory capital requirements, as well as the internal capital targets.
Supervisory comfort	▪ If the supervisory authority discovers issues that should have been determined in the ORSA, not only must the supervisor take action according to the deficiencies but it also has to assess the reason why the issues were not identified by the undertaking itself.

ORSA represents a firm's opinion of its risks, overall solvency needs and own funds

The ORSA Outside of the EU

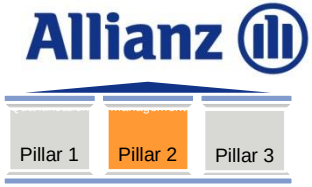


International Association of Insurance Supervisors

In its core principles for regulators the IAIS includes a requirement for an ORSA that is

- To be the responsibility of the Board or Senior Management
- Include all reasonably foreseeable and relevant material risks
- Determine financial resources needed to manage its business based on risk tolerance, business plans and regulatory requirements
- Base risk management actions on capital requirements and resources
- Assess the quality and adequacy of capital
- Analyze ability of insurer to continue in business over a longer time horizon than typical for capital requirements
- Include quantitative and qualitative elements in medium and long term business strategy and projections of future financial position and ability to meet capital requirements

The ORSA Outside of the EU



National Association of Insurance Commissioners

Applies to insurance groups with more than USD 500 mn of GWP (USD 1 bn including Crop and Flood insurance)

Goals

- To foster an effective level of ERM at all insurers, through which each insurer identifies, assesses, monitors, prioritizes and reports on its material and relevant risks identified by the insurer, using techniques that are appropriate to the nature, scale and complexity of the insurer's risks, in a manner that is adequate to support risk and capital decisions; and
- To provide a group-level perspective on risk and capital, as a supplement to the existing legal entity view.

Insurer needs to provide regulator annually with a summary report which shall include

- Description of the Insurer's Risk Management Framework
- Insurer's Assessment of Risk Exposure
- Group Assessment of Risk Capital and Prospective Solvency Assessment

4

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4 **North American Insurer Takeaways**

North American Insurer Take-Aways

Risk Governance	Use Test	Reliance Attribution	ORSA

• Alignment of business strategy with risk strategy (incl. appetite, limits, governance structure, and policies)
• Creation of a robust risk governance structure
• Development of a strong risk culture throughout the organization by ensuring
  • that risk factors influence business decisions
  • Business processes and constraints reflect risk considerations (limits, authorities etc)
  • Everyone in the organization understands how they help control risk (“**everyone owns risk**”)
	• Capital model reflects specific characteristics of your business (structure and granularity)
	• Capital models are used in business decisions and are an integral part of the business
	• Model leads to better business decisions, business needs lead to a better model
	• Key decisions are driven (influenced) by the capital model (e.g. pricing, reinsurance, investments, etc.)
	• Management had a full understanding and accountability for the risk governance and for the capital model
		• Strong governance around the development of models and other quantitative risk tools
		• Data quality consistent with expected uses of the data
		• ASOPs 38, 46, and 47 are helpful here
			• An annual structural review of an organization’s risk governance and risk position is essential
			• Emphasis on looking forward at least three years to understand one’s capital position and the impact of stresses
			• Showing understanding of new risks that are or may be emerging
			• **The ORSA is a worldwide phenomenon. It is not going away**