

INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS



STANDARD ON THE USE OF INTERNAL MODELS FOR REGULATORY CAPITAL PURPOSES

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Preamble

The IAIS considers that an insurer should not need supervisory approval, initial or ongoing, for the use of its internal model in determining its own economic capital needs or management.

However, before the suitability of an internal model for determining regulatory capital requirements is considered by an insurer, or assessed by a supervisor, the use of that internal model by the insurer in determining economic capital in the context of its own risk and solvency assessment should be clearly established.

This standard and the associated guidance paper relates to the use of an internal model for regulatory capital purposes. In the description of the Use Test, as part of the validation processes of an internal model for regulatory capital purposes, the extent to which the internal model is embedded into the risk and capital management processes of the insurer is assessed.

Guidance on the issues to consider in the context of an internal model used for the purposes of an insurer's own risk and solvency assessment, but not for regulatory capital purposes, are discussed in the IAIS Guidance paper on Enterprise risk management for capital and solvency purposes.

Standard on the use of internal models for regulatory capital purposes

Contents

1.	General provisions on the use of an internal model to determine regulatory capital requirements.....	4
2.	Initial validation and supervisory approval.....	4
	Statistical quality test.....	5
	Calibration test.....	5
	Use test and governance.....	5
	Documentation.....	5
3.	Ongoing validation and supervisory approval.....	5
4.	Supervisory reporting and public disclosure.....	6

1. General provisions on the use of an internal model to determine regulatory capital requirements

1. Where a solvency regime allows the use of internal models to determine regulatory capital requirements to help improve the alignment of risk and capital management, the supervisor should establish appropriate modelling criteria to be used for that purpose, which ensure broad consistency among all insurers within the regime.

2. The supervisory regime should also set out for which of the different levels of regulatory capital requirements - including the Prescribed Capital Requirement (PCR) and Minimum Capital Requirement (MCR) - the use of internal models is allowed. If internal models are allowed for determining the MCR, particular care should be taken to ensure that the strongest supervisory action that may be necessary if the MCR is breached can be enforced, for example if the internal model is challenged in a court of law.

2. Initial validation and supervisory approval

3. Where an insurer calculates its regulatory capital requirements using an internal model, the use of the internal model for that purpose should be subject to prior approval by the supervisor.

4. In constructing its internal model for regulatory capital purposes, an insurer should adopt risk modelling techniques and approaches appropriate to the nature, scale and complexity of the risks incorporated within its risk strategy and business objectives.

5. In reviewing an insurer's internal model for regulatory capital purposes, the supervisor should require the insurer, as a minimum, to subject the model to three tests: 'statistical quality test', 'calibration test', and 'use test'.

6. The onus should be placed on the insurer to demonstrate that the model is appropriate for regulatory capital purposes. The insurer should be able to demonstrate the results of each of the three tests.

Statistical quality test

7. An insurer should conduct a 'statistical quality test' which assesses the base quantitative methodology of the internal model. As part of this test process, the insurer should be able to demonstrate the appropriateness of this methodology, including the choice of model inputs and parameters, and should be able to justify the assumptions underlying the model.

8. The insurer should ensure that the determination of the regulatory capital requirement using an internal model addresses the overall risk position of the insurer as required by the solvency regime and that the underlying data used in the model is accurate and complete.

Calibration test

9. An insurer should conduct a 'calibration test' to demonstrate that the regulatory capital requirement determined by the internal model satisfies the modelling criteria specified by the supervisor.

Use test and Governance

10. The insurer should ensure that the internal model, its methodologies and results, are fully embedded into the risk strategy and operational processes of the insurer (the 'use test').

11. The insurer's board and senior management should have overall control of and responsibility for the construction and use of the internal model for risk management purposes, and ensure that there is sufficient understanding of the model's construction at appropriate levels within the insurer's organisational structure. In particular, the board and senior management should understand the consequences of the internal model's outputs and limitations for risk and capital management decisions.

12. The insurer should have adequate governance and internal controls in place in respect to the internal model.

Documentation

13. The insurer should document the design and construction of the internal model, including an outline of the rationale and assumptions underlying its methodology. The documentation should be sufficient to demonstrate compliance with the regulatory validation requirements for internal models, including the three tests outlined above.

3. Ongoing validation and supervisory approval

14. The supervisor should require the insurer to monitor the performance of its internal model and regularly review and validate the ongoing appropriateness of the model's specifications. The insurer should ensure and be able to demonstrate that the model remains fit for purpose for regulatory capital purposes in changing circumstances against the criteria of the statistical quality test, calibration test and use test.

15. The supervisor should be notified of material changes to the internal model made by the insurer for review and continued approval of the use of the model for regulatory capital purposes.

16. Internal model changes should be properly documented by the insurer.

4. Supervisory reporting and public disclosure

17. An insurer should provide information on its internal model for both supervisory reporting and public disclosure.

- a. The supervisor should have the power to require an insurer to report information necessary for supervisory review and ongoing approval of an internal model, where appropriate. The information should include details of how the model is embedded within the insurer's governance and operational processes and risk management strategy, as well as information on the risks assessed by the model and the capital assessment derived from its operation.
- b. The supervisor should consider the appropriate level of public disclosure having due regard to any proprietary or confidential information.