

# RISKSPAN ANALYSIS

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## Model Validation Remains “at the core” of New OCC Guidance

Financial Institutions rely on quantitative models in many aspects of their decision making. While models are essential in managing large, complex institutions, inordinate reliance on them contributed to the adverse consequences observed in the aftermath of the U.S. housing bubble and subsequent economic collapse.

Because models attempt to replicate complicated behaviors and relationships, they may be inherently vulnerable to error. Though it is challenging to mitigate this risk, it is feasible to limit the incidence, degree and contagion of error if model risk is effectively managed. This central principle is advanced by the OCC in its recent April *Supervisory Guidance on Model Risk Management* (2011-12).

The purpose of the new guidance is to help banks incorporate the “accumulated lessons of supervisory experience and industry practice over the past decade.” Incorporation of model risk management, however, should not be limited to national banks. As Financial Institutions continue to sustain the costs of pre-crisis model overdependence and misuse, they are now turning to strategies that increase the confidence level of limiting future exposure. A robust governance program can help Financial Institutions minimize risk by providing testing and worst case scenario analysis that models are operating as intended. By contributing to iterative model development, effective governance can enhance recognition of the limitations and potential weaknesses of each model while promoting better risk management. Through its proprietary model, Velocity®, RiskSpan has supported independent model validations for OCC regulated and non-regulated clients.

### **Independent Model Validation**

Validation is the process of determining that a model’s results accurately meet the requirements of its intended use. The model validation effort should verify that model results meet stated objectives, and are applied appropriately. Validation typically includes a review of the model’s logical and conceptual soundness, a comparison of outputs against those of similar models (benchmarking), and a comparison of model predictions against subsequent real-world events (back-testing). All functional areas of the model including assumptions, data input and reporting should be reviewed.

Model validations should be completed by personnel independent from the development team and users to circumvent unintended consequences and potential conflicts of interest with the outcome of the validation. Independence in the model validation process

increases the likelihood of eliminating distortions that may arise from misaligned incentives or other organizational conflicts.

### **Delivering a Model Validation Solution**

A model validation solution should include the following elements:

- **Review of Model Documentation:** All models—internal and external—should be fully documented.
- **Data and Assumptions:** Review of the data and assumptions used as inputs. Review of the adequacy of the controls in place to ensure the accuracy, integrity, and appropriateness of the model inputs.
- **Conceptual Soundness of Model:** Assessment of the statistical, financial, and economic assumptions used to develop the model.
- **Model Code:** Computer code used by the model should be subject to rigorous quality and change control procedures. To the extent possible, the model’s computer code and mathematical formulae should be analyzed for potential flaws in logic or coding.
- **Change Management:** Availability and appropriateness of the procedures used to adjust, calibrate or enhance a model should be evaluated.
- **Output Analysis:** Sensitivity Analysis, benchmarking and back-testing are critical methods used to assess the quality of output produced by the model.
- **Model Reporting:** A comprehensive validation assesses reports generated from the model, the quality and accuracy of model output, overrides incorporated in the model or output from the model and exception reporting of key model assumptions.
- **Governance:** The use of third parties to independently review policies and procedures is recommended. An independent check provides a view to augment the model ownership process and applies rigor to ensure responsibilities are clearly documented and processes approving new models and changes to existing models are clearly outlined. The involvement of senior management and the Board of Directors in determining model suitability and regulatory compliance should be standard and is part of the evolution of risk management practices.

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