

## **Briefing Note: New York Insurance Department Circular Letter No. 25**

The New York State Insurance Department recently issued Circular Letter No. 25 (2008)<sup>1</sup>. This letter outlines the Department's expectation that all insurers should have a financial stress testing process in place as part of their risk management framework. It requires insurers to "systematically review their stress testing and scenario analyses, especially in light of recent market events", noting that "inputs, assumptions, stress scenarios and the resulting impacts should be continuously monitored, assessed and updated".

The letter also provides guidance regarding the types of scenarios that should be tested, which may include:

- interest rate shocks;
- equity market shocks;
- yield curve shifts;
- changes in credit quality and liquidity;
- rating agency downgrades;
- collateral calls; and
- large-scale catastrophes.

In addition, the letter notifies insurers that the Department intends to conduct a review of their processes relating to financial stress testing and scenario analyses.

### ***Model validation and "use test"***

As part of these reviews, the letter notes that "Any models utilized by insurers also may be reviewed by the Department. In addition, the Department will evaluate how such models are independently reviewed within the company by risk management professionals, internal auditors, external auditors and/or consulting firms."

Finally, the letter outlines potential requirements for insurers to demonstrate to the Department that stress testing is actively used in the management of their business.

The requirements regarding independent validation of key models and demonstration that model output is used in managing the business are akin to similar requirements under EU Solvency II proposals and Basel II. Indeed, such requirements are clearly becoming an increasingly important component of the approach taken by many regulators across the financial services sector.

### ***How can PwC help?***

We have significant experience in conducting independent validations of complex insurance models, including models used to perform stress and scenario testing. We have also worked closely with companies to ensure such validation exercises meet the requirements of regulators.

Beyond testing a model's technical appropriateness, a robust model validation exercise also includes an assessment of the reporting and use of model results. Specifically, model validation should confirm that model results are clearly stated and understood by the

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<sup>1</sup> "Financial Condition Stress Testing" issued to all New York authorized insurers on November 18, 2008.

decision-maker, that sensitivities and uncertainties are documented with the implications explained, that model limitations are clearly stated, and that insights derived from the model are conveyed effectively. This element of model validation can help ensure results from the model are appropriately used in the management of the business.

While few standards for model validation have been formally established for the insurance industry, insurers can be guided by the broad regulatory guidelines established for the banking industry. For example, the US Comptroller of the Currency Administrator of National Banks in its bulletin 'OCC 2000-16' identified the following goals of model validation:

- Decision makers should understand the meaning and limitations of a model's results
- Model results should be tested against actual outcomes
- A reasonable effort to audit model inputs should be made, with input errors addressed in a timely fashion
- Model oversight should be commensurate with the materiality of the risk
- Model validation should be independent from model construction
- Responsibility for the model validation process should be clearly defined
- Model software should be subject to change-control procedures

In addition, our proven framework for model validation incorporates steps to mitigate model risk within the following key areas:



Example Model Risk
<ul style="list-style-type: none"> <li>• Inconsistency with the model's business purpose</li> <li>• Inappropriate model governance</li> </ul>
<ul style="list-style-type: none"> <li>• Inadequate controls around processes used to determine model assumptions</li> <li>• Other inappropriate model inputs</li> </ul>
<ul style="list-style-type: none"> <li>• Inadequate controls around processes used to collect, deliver and store data</li> </ul>
<ul style="list-style-type: none"> <li>• Inappropriate model methodology</li> <li>• Model methodology inconsistent with relevant industry rules and guidance</li> <li>• Inconsistency between model specification and the computer code that transforms inputs into estimates</li> </ul>
<ul style="list-style-type: none"> <li>• Inadequate controls in place around processes used to analyze and distribute results from the model</li> <li>• Inappropriate reporting of model output to senior management</li> </ul>

## ***Moving to the next stage in model governance***

More generally, we can assist you in developing a model validation framework to help mitigate the increasing risk arising from greater emphasis on the use of complex models. In particular, design flaws, inappropriate assumptions, poor data quality and incorrect interpretation of model results can lead to sub-optimal decisions in areas such as business planning, product pricing, liability hedging and strategic capital management and allocation.

A robust model validation framework, including independent validation of high risk models, can help mitigate this increasing model risk. It can also facilitate a deeper understanding of a model's purpose, uses and limitations, providing management with increased confidence to consider the model results in support of key strategic decisions.

Key elements of a best practice model validation framework include:

- Establishment of a model validation policy (approved by the Board and/or senior management) requiring periodic validation of key models
- Development of a comprehensive enterprise-wide model inventory
- Independent risk assessment to identify “high risk” models (i.e. those with the greatest potential financial or strategic impact from an error or misinterpretation of results)
- Use of independent reviewers (including external specialists where appropriate) to validate high risk models at appropriate intervals
- Documentation of a governance framework summarizing ownership of the model register and model validation program, including guidance around the model validation process (selection of models, frequency of reviews, validation approach)
- Approval process for new models to be validated before use
- Requirements around model documentation and change control between periodic independent validations

If you would like further information on any of the issues discussed above, please speak with your usual PwC contact or one of our model validation specialists listed below.

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