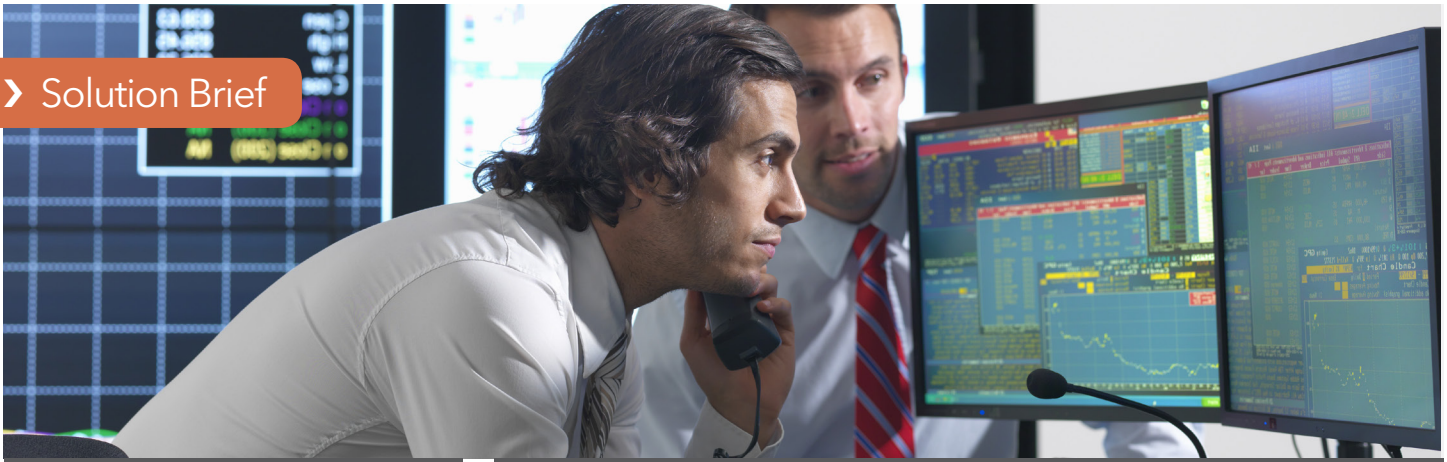


## > Solution Brief



### Business Impact

Model validation remains at the core of the new guidance, but the broader scope of model risk management encompasses model development, implementation and use, as well as governance and controls related to models.

Office of the Comptroller of the Currency,  
US Department of the Treasury<sup>1</sup>



### Challenges

- **Greater model risk.** As models become more complex, your bank is taking on greater model risk on more models. You need to use your resources more efficiently to understand and govern models.
- **Lack of an integrated model information system.** To comply with regulations, your bank needs a reliable model risk management structure to ensure that all risk categories related to models are identified, monitored and controlled.
- **High-quality model documentation.** It is critical to establish a foundation that supports well-controlled model development, testing, implementation, use and validation.

## Mitigate Model Risk and Reduce Model-Related Costs

### The Issue

Additional regulatory requirements driven by DFAST, CCAR, Solvency II and Basel III are exposing your bank to increased model risk. Effective model risk management has become increasingly important to both enable shareholder confidence and comply with regulatory requirements, such as those of the OCC and Federal Reserve.

Now more than ever, your bank needs clear oversight of its model risk life cycle in order to report to executive management and regulators with absolute accuracy. By establishing risk mitigation and cost reduction strategies targeted at model implementation and operation, you can easily identify models that are vital for guiding the direction of your business.

<sup>1</sup> [occ.treas.gov/news-issuances/bulletins/2011/bulletin-2011-12.html](http://occ.treas.gov/news-issuances/bulletins/2011/bulletin-2011-12.html)

### Our Approach

SAS lets you understand and control your model risk by providing the ability to create a fully integrated model risk life cycle. We offer a model risk management solution to manage, document, validate and audit models in order to support your internal decision-making processes. Our software and services help you:

- **Validate models.** Independently review and validate all models to support existing supervisory guidance and business requirements. For example, CCAR recommends that banks maintain an inventory of all models used in the capital process that produce projections or estimates on revenue or loss projections.
- **Organize models.** Design a model candidate assessment, a complete model inventory management module and an end-to-end model validation process.
- **Set policy and documentation protocols.** Carry out model-related issue tracking and enable thorough documentation and policy management for effective challenge and remediation plans.
- **Easily share information.** Construct and disseminate reports with bundled tools for effective top-down model risk reporting.

## The SAS® Difference: Govern your models' risk and manage your business with more confidence

SAS enables governance of the full model risk management life cycle, from risk identification to risk assessment:

- **Manage the entire life cycle.** Proven SAS data management, model risk assessment and centralized model inventory provide complete document and workflow management, regardless of model type, model source (in-house and third party) or technology used to develop the models.
- **Assess a model's chain of dependencies.** Understand the ecosystem of models used across all lines of business.
- **Operate a repeatable, reliable and auditable process.** Track reviews, document assumptions, classify models and determine performance.
- **Create a comprehensive and flexible workflow.** Assist with model limitation scoring, validation results, criticality ratings and model interdependence relationships.
- **Maintain a single source of model documentation.** Review models at various levels, including model lineage, version, business line, model owner or customized factors.
- **Use dashboards to track performance and monitor models.** With model performance tracking and monitoring dashboards from SAS, senior management and your board can get a firm grasp of model risk and the measures to mitigate.
- **Disseminate information across the enterprise.** Design reports once and then distribute and publish them anywhere.

## Case Study: A large, global financial institution

### Situation

The chief model risk officer realized that managing the information around the entire model life cycle was increasingly labor-intensive and time-consuming. Creating risk indicators for management, responding to regulatory requests and to compliance audits - while adhering to policy requirements - was getting too complex. It wanted to avoid building a model for every single business problem and be more efficient, save time and money, and reduce complexity.

### Solution

Using SAS® Model Risk Management, the institution built a central repository that helped it identify and understand all models in the model risk inventory. Its model risk management is now centralized, but not the actual development, testing, validation and implementation of the models, which are left to the business units.

### Results

Within three months of using the SAS solution, the institution has:

- Decreased time spent managing models.
- Better utilized analytical staffing.
- Granted more users accessibility, encouraging model reuse.
- Made it easier to meet regulatory requirements.
- Provided executives with a dashboard of information on aggregated model risk, with drill-down capabilities.
- Made the institution's model risk management program "audit ready."

## What if you could ...

### Inventory and Manage Models

What if you could centrally inventory and manage all models regardless of model type, model source (in-house and third party) or technology used to develop the models?

### Support Governance

What if you could provide support for the model validation and governance process in accordance with the supervisory guidance on model risk management?

### Define Quantitative Models

What if you could establish a systematic process for assessing if potential candidates subscribe to the OCC definition of a quantitative model?

You can. SAS gives you  
**THE POWER TO KNOW®.**

## SAS Facts

- SAS ranked as a category leader in the *Chartis RiskTech Quadrant® for Model Risk Management Systems 2014*, recognizing the software's "completeness of offering" and "market-share potential."
- SAS invested 25 percent of 2013 revenue into research and development, demonstrating our commitment to innovation and customer service.
- SAS solutions are used by more than 3,100 financial institutions worldwide, including 97 percent of the banks on the Fortune Global 500®.

Learn more about SAS software and services at  
[sas.com/risk](http://sas.com/risk).