



Model Risk Management

Practices and Principles

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Table of Contents

Introduction	3
Article I – Common Understanding of Models and MRM.....	4
Article I, Section 1: Model Definition and Context	4
Article I, Section 2: Definition of Model Risk Management	5
Article II – Model Materiality Considerations	6
Article II, Section 1: Why Model Risk Matters	6
Article II, Section 2: Quantitative and Qualitative Dimensions of Model Risk Materiality	7
Article III – Model Risk Governance	8
Article III, Section 1: A Model is an Asset to Manage	8
Article III, Section 2: MRM Policies and Procedures	8
Article III, Section 3: Model Inventory.....	9
Article III, Section 4: Model Risk Assessment.....	10
Article III, Section 5: Model Validation.....	11
Article III, Section 6: MRM Reporting.....	13
Summary.....	13
Bibliography	15

Introduction

Insurance companies are in the business of pricing and taking risks, and models are commonly used and often essential as decision-support tools in that business. The insurance industry has a long tradition of using models of varying complexity to drive decision making and manage risk. As insurance and risk executives measure, assume, or transfer risk, they rely on quantitatively trained professionals to use fit-for-purpose models for capital allocation/adequacy reviews, pricing and underwriting, and stress testing among others. Until recently, insurance professionals (such as actuaries) had largely self-managed the risks associated with model use. However, as insurers have formalized and matured their enterprise risk management processes, they have recognized that model risk is an enterprise risk and have enhanced their Model Risk Management practices (MRM) accordingly. In addition, regulatory and data analytics-related changes that are underway add greater model complexity and intensity, elevating the need for formalizing MRM practices.

Modeling and risk management professionals have been tracking the MRM evolution and refreshing their capabilities. This has led to a current state in which there is a range of MRM processes and protocols with limited consensus on a set of baseline sound practices. While there is a preponderance of expectations from banking regulators in the United States (and by insurance regulators in countries that have adopted Solvency II), there is limited guidance on right-sizing MRM practices commensurate with company size or industry segment (Life, P&C, Health, or Reinsurance) or the nature and significance of model use to the enterprise. As such, the insurance MRM community (i.e., those who use models, rely on their output for decision making, or provide oversight) has an opportunity to build upon what already exists using a set of common sound practices.

The purpose of this document is not to recreate any MRM practices or protocols. Instead, the goal is to share a set of sound MRM practices and principles that the members of the North American Chief Risk Officer (CRO) Council have observed at different companies. The goal is also to leverage, where appropriate, principles being proposed by organizations such as the Federal Reserve, OCC, and industry professional groups. The CRO Council members believe that the insurance MRM community can utilize this information to build upon prevailing professional practices.

The genesis of this paper was the result of a survey conducted among members of the CRO Council in late 2015. The results of the survey reported wide variations in practices across firms. These results may be indicative of the varying nature, scale, and complexity of the respondents and their use of models and suggest that the respondents are at different stages in terms of the maturity of their governance frameworks, validation and reporting activities. For example most respondents apply a risk management framework and related policies, and leverage Internal Audit. That said, a wide variation in responses exists related to the maturity of the programs and the roles of each of the Three Lines of Defense. The results also suggest varying usage of nomenclature related to model risk management, including defining the basics of what constitutes a model and therefore, what should be captured in a model risk inventory and

circumscribed by governance frameworks. Given this result, the CRO Council reasoned that it would benefit CEOs, Boards, CROs and other constituents if we authored a document which advances the quality of dialogue related to model risk and related governance principles among the various stakeholders who place reliance upon model outputs.

Consistent with that objective, we have structured this document as a ‘constitution’ of ideas and principles to consider, rather than as a list of prescriptive rules. It is the hope of the CRO Council that this document will be of use to senior executives to familiarize themselves with MRM as well as foster more communication within the insurance MRM community on how to build upon and apply these principles in a proportionate and relevant manner.

Article I – Common Understanding of Models and MRM

Article I, Section 1: Model Definition and Context

Although insurance industry practitioners have adopted different definitions of a model, there are select ideas that can be leveraged when refining this definition.

- Models are defined broadly: e.g., a model can be a tool with an algorithm that performs mathematical operations based on customizable assumptions and parameters. The delivery mechanics are not a defining criteria; a model can be built with any number of tools, from spreadsheets to statistical packages.
- A model can be a quantitative method, system or approach that applies statistical, economic, financial or mathematical techniques and assumptions to process quantitative input data.
- A model can be an algorithm used to support business decision-making.
- A model can be used to forecast unknown outcomes, estimate unknown values, establish probabilistic assessments, project hypothetical scenarios, and test hypotheses.
- Models can provide explanatory value for uncertain processes, and “explain” or account for variability.
- Insurance executives need to remain vigilant about “fair-weather models” that provide a comparative advantage most of the time but are not sufficiently robust during periods of distress. Holding all else constant, the less reliable a model, the greater the need for a limit and escalation framework and usage guidance to manage model risks.
- Models are imperfect - the modeling tool does not attempt to explain all possible outcomes or variability. Instead of attempts to explain all aspects of the phenomenon being modeled, the practical approach is to ask whether the model explains enough to support sound decision making.

Model is also defined within the Federal Reserve SR Letter 11-7. While this definition has influenced insurance MRM community professionals, we believe that it should be viewed as the perspective of an important stakeholder in an industry with a history of extensive use of models. That said, it should not be

viewed as the only perspective. Insurance professionals can leverage SR Letter 11-7, while customizing a model definition to accommodate the unique use and risks inherent in each company's modeling and decision making approach and its risk culture.

Although models employ calculators, a model is different from a calculator. A calculator processes data, taking inputs and producing outputs using a set algorithm; it is not designed to forecast outcomes or reduce uncertainty. In contrast, models involve judgment, and are a mathematical simplification and representation of more complex underlying processes. Models do not replicate the underlying elements of that process, but rather apply static and mathematical relationships to generate estimates of what these processes might yield. While the scope of this paper excludes calculators, there is recognition that firms may apply elements of their MRM policies and practices to certain tools that are best understood as calculators (e.g., RBC calculation tools), where the firm has determined that this will be beneficial to managing the risks associated with such tools. The scope of a model may also include tools that extract and transform source data using assumptions to derive results.

Article I, Section 2: Definition of Model Risk Management

MRM is a process which consists of defined standards and activities for each of the Three Lines of Defense (First Line - Model owners and peer reviewers, Second Line - Risk Management, and Third Line - Internal Audit). The established standards and activities help drive more discipline and efficiency with respect to the management and control of model risk. There are perspectives of many stakeholders that should be considered such as actuarial and legal professionals or those from industry groups such as the AICPA, the CFA Institute, and the Federal Reserve (e.g., SR11-7). Insurance professionals can customize their MRM definition to accommodate what is meaningful in the context of their company and what may be reflective of their unique risk cultures.

In addition, the concept of proportionality (i.e., allowing the insurance firm's nature, scale, and complexity, and its reliance on models to determine the intensity of MRM practices) can be considered when right-sizing MRM. While insurance professionals have adapted a variety of MRM definitions, there are shared concepts and practices that emerge. These shared concepts and practices described below should be interpreted in the context of materiality and governance.

Finally, we note that defining an appropriate scope of MRM requires consideration of the process by which models are used for decision-making. The scope of MRM should be sufficiently broad to include the use of the model, including the model-dependent decision-making processes and related algorithms; improper use of the model may yield bad decisions even if the model is otherwise fit for purpose. Some models are used to recommend a decision (e.g., pricing models for automotive insurance), while others produce numerical outputs which are then used by other models or human decision-makers at a later point in the decision process. Management and governance structures should address both of these dimensions.

Article II – Model Materiality Considerations

Article II, Section 1: Why Model Risk Matters

Risks associated with models are often self-managed by insurance professionals (such as actuaries). Given the significant changes that are under way, there is a basis for revisiting the current MRM principles and practices, and understanding why model risk matters more today than ever before. Overall, as the insurance industry has embraced enterprise risk management, firms have recognized that model risk is an important element of enterprise risk management. There is value in applying a strong risk management framework to model risk as it manifests across the enterprise. A further change is the advent of Big Data applications, specifically the availability of data and the computational capacity to uncover decision-supporting insights. Yet another change is being triggered by regulators and rating agencies with heightened expectations around MRM.

The quantitative dimensions of insurance are complex. Big Data, with the corresponding forecasting and predictive tools, along with the complex traditional tools for pricing, reserving, and financial projections, collectively challenge the industry's ability to effectively manage model risk. Models are increasingly used outside Actuarial and Underwriting functions, with growing adoption across the enterprise, including Risk, Compliance, Technology Operations, Claims, Customer Relationship Management, and Investments. This change is not limited to large and complex insurance firms - smaller and mid-size firms are also exploring the promise of Big Data and analytics to gain competitive advantage. Consequently, there are more stakeholders working with or using models to make business decisions. MRM practices need to evolve to adjust to this change.

Since the 2008 crisis, there are rising expectations from regulators and rating agencies regarding an insurer's use of models for performance analytics, stress testing, and capital allocation decisions. This increasing scrutiny started at large, complex firms, especially those firms that own a bank subsidiary. Regulators now expect a set of more cohesive and better documented MRM standards and practices. Insurance professionals at smaller and less complex firms increasingly expect the expanding regulatory scrutiny to flow downstream. This expectation is driven by, among other factors, the regulators' expectations around the Own Risk and Solvency Assessment (ORSA) reporting which explicitly references model validation. The intensity of such external scrutiny is not expected to abate. Developments in Europe, with the implications for internal modeling in Solvency II capital requirements, are being watched in North America. The US life insurance industry anticipates an increasing role for models under Principles-Based Reserving being implemented by the states. Increasingly, well documented and formal MRM capabilities are acknowledged as a baseline requirement.

Article II, Section 2: Quantitative and Qualitative Dimensions of Model Risk Materiality

As part of the MRM framework, assessment of model risk exposure should be driven by materiality considerations. A model's materiality should be considered both in isolation (on a per item basis) and in the aggregate (two-or-more models may be immaterial individually, but they may be deemed material collectively). In conjunction with aggregate materiality, model interaction between different business areas should be tracked and managed to minimize the amplification of model errors caused by different modelling assumptions being applied inconsistently by different business areas (e.g., yield curve, inflation or FX assumptions should be internally consistent across the asset and liability sections of the balance sheet). Quantitative and qualitative standards can be developed to assess model (and model error) materiality based on the following:

- Quantitative impact: Quantitative materiality depends on the magnitude and consequences of a misstatement due to a model error. Using capital management models as an example, the monetary impact of a model error on financial reporting could be stated as a percentage of surplus capital, reserves, available or required capital, net income, or premium volume, or as a nominal amount (e.g., regulatory fine). In addition, the impact also increases with the degree of reliance that is placed on a model's output for business decisions and with the importance of those business decisions.
- Qualitative impact: Materiality can also be defined using hierarchical categories such as Critical-High-Medium-Low. Such qualitative categorization can be useful when forecasts are imprecise or exhibit a large degree of variability. Qualitative materiality may also consider factors such as degree of reliance on model's results by the decision making process, reputation risk, impact to customers and other third parties, board sensitivity to an error, or impact from rating agency downgrade due to model errors.
- Likelihood: Model materiality may also be a function of the likelihood of harm due to model error. For example, where model results are one of a number of inputs into a business decision, likelihood is reduced. Greater complexity in a model or other factors might increase or decrease likelihood and materiality level.

While some insurance models have a higher profile (e.g., catastrophe (CAT) models), other models may be incorrectly assumed to be less material, especially when their use under adverse conditions has not been sufficiently addressed. When left unmitigated, model concentration, undue and inappropriate reliance upon models, and correlation risks (caused by the potential of a given model to interact with other models in a material way) can also drive up materiality levels.

Article III – Model Risk Governance

Article III, Section 1: A Model is an Asset to Manage

A model is a company asset, and it can be managed as other assets are managed. Like other assets, a model has risks, returns, and a lifecycle. In applying this conceptual approach, we are not suggesting an accounting convention, but rather a recognition that, similar to any asset, high quality models are expected to produce economic value over time, even though the model may not be formally recorded as an “asset” on the company’s books. Because models are valuable, this “asset-view” principle suggests a conceptual framework that calls for model owners to maintain a set of core model governance practices that are analogous to those that are applied to other company assets. These governance practices include MRM policies and procedures, model inventory, model risk assessment, model controls, model validation, and MRM reporting¹. These core governance practices are discussed below in context of each of the Three Lines of Defense structure.

Article III, Section 2: MRM Policies and Procedures

Currently, there is a wide range of practices for adoption of MRM related policies and procedures. At one pole, policies are not formally codified or addressed as part of the enterprise-wide operational risk management policy. At the other pole, there is a stand-alone high-level policy or a comprehensively detailed policy along with underlying procedures and guidelines. The ownership of MRM policies and procedures also varies among organizations; policies are owned by firm-wide Risk Management, Model Risk Management, Operational Risk Management (all Second Lines of Defense), Internal Audit (Third Line of Defense), Actuaries, or some other (First Line of Defense) business functions.

In order to evolve MRM policies and procedures, insurance professionals can formalize their existing policy structures, and clearly delineate ownership based on the Three Lines of Defense concept. There should be clarity and transparency on ownership of policies and procedures for managing model risks, as well as for each individual model. The Second Line of Defense, together with input from the model owners, developers, and users (which may be First or Second Line of Defense, e.g. Risk Management) provides guidance and oversight on model risk issues. Ownership of MRM Policies can reside within the Second Line of Defense (Risk Management) to promote independence. Model risk ownership resides within the First Line of Defense (except in cases where the Second Line owns the model, and, with it, the risk). In order to earn and maintain credibility with model owners and users, it is important for Second Line Risk Managers to be familiar with both the technical aspects of model design and development and the historical context for model failures. It can be useful to maintain and use a list of historical model failures with a description

¹ For example, consider a company’s investment holdings. To safeguard these assets, and to ensure that they are used properly, management establishes relevant policies and procedures, maintains inventories of holdings, assesses the risk profile of the holdings, establishes controls over the buying/selling/valuation/use of the investments, validates (i.e., audits) recording and valuation practices, and establishes performance reporting to interested stakeholders.

of lessons learned from such failures, whether they are from within the company or the industry. The Third Line of Defense (Internal Audit) performs audits on the existence and use of MRM policies and procedures and the design and effectiveness of controls relied upon to mitigate model risks.

Due to differences in maturities of risk management frameworks with respect to MRM, we recognize that there likely exists a variation in how companies utilize each of the lines of defense in their respective approaches to MRM. For this reason, we recommend that companies identify, for each of the Three Lines of Defense, who is Responsible, Accountable, Consulted, and Informed for each of the identified sound practices. This process simplifies reporting to management, regulators, etc. on who does what and when, and the nature and owner of mitigations that may be needed.

Article III, Section 3: Model Inventory

Currently, there are varied practices with regard to inventorying models that exist across the insurance industry. At one pole, some companies maintain a central repository with organized records, with each model having a unique identifying tag number that is referenced across all MRM activities. At the other pole, some companies do not maintain an organized view of models in their domain, with some models being actively used while other models are more outdated and so not actively used, or had been created for one-time use only. Between these extremes, there are varying levels of maturity with regard to maintaining a current inventory of models.

We recommend that model inventories be as complete as possible. Namely, if a model exists, it should be inventoried. Conversely, if a model is inventoried, it should exist. Models in inventory can be stratified based on qualitative or quantitative materiality factors as well as the potential of a given model to interact with other models in the inventory in a material way.

In order to evolve model inventorying practices, insurance professionals can start with defining their approach to develop, maintain, and use a model inventory in context of each of the Three Lines of Defense concept. An effective model inventory is a valuable starting point for an assessment of model risks, and it can be used to aid management of model risk (issue) remediation activities, as well as management of changes to models.

Model population and model inventory are not the same concepts. Model population refers to the number of models that exist within the organization. Model inventory refers to the structure used to systematically classify, tag, and monitor models that are in use. The classification can be based on multiple criteria, e.g., by model type, by business units that own or use models, by level of model risk impact. Models that are no longer in use or ones that are approaching the end of their life-cycle can be clearly delineated within the inventory. Model owners (which may include Risk Management, Investment Management, Finance, and Actuarial management), are responsible for the accuracy of the model information, and they have the responsibility to provide the information needed to maintain and update the model inventory. Since model ownership is often dispersed across multiple business and Actuarial groups within the First and Second

Line, the Second Line may be best placed to own (or coordinate the maintenance of) the model inventory document and process. If the model inventory is hosted on a system, technical support would maintain that system, with model owners (First Line) responsible for updating their information in that system or informing the Second Line of any changes that need to be made.

Article III, Section 4: Model Risk Assessment

Currently, there is a wide range of practices with regard to the assessment of models. At one pole, there are established processes and procedures with clearly-delineated roles on when and how to perform and report on model risk assessment. At the other pole, there are no formal model assessments, or the assessments are infrequent or ad-hoc. Between these two extremes, there are practices representing varying levels of maturity on how model risk assessments are performed. There may be multiple incidents highlighting the risk of not ensuring that expected protocols are followed. The risk impact can range from material misstatements in financial or regulatory disclosure, incorrect strategy or business planning, to inappropriate response or decisions.

In order to evolve model risk assessment practices, insurance professionals can leverage the model inventory and be guided by proportionality and fit-for-purpose concepts to plan model risk assessments. As part of the formalizing the structure of a model risk inventory, the relative importance of a model determines how the model is categorized, for example, as “Critical,” “High”, “Medium”, or “Low”. The relative importance depends on the extent of the financial and reputational impact of an incorrect model output being used or correct output being misused. Thereafter, the detailed model risk assessment steps are driven by the model categorization priority. For example, all “Critical” risk models may be subjected to extensive procedures to assess the level of both inherent risk exposure (i.e., gross risk without consideration of any mitigating controls) and residual risk exposure (i.e., with consideration of mitigating controls). Such assessments are a point-in-time estimate of the exposure level. Each assessment may be based on a combination of expert judgment of the perceived risks and use of actual (historical) records of model errors, misinterpretations, or other incidents, where available. Qualified Risk Management professionals (Second Line of Defense) can facilitate model risk assessments with owners and users of the models. While the Second Line provides guidance and oversight and can challenge ideas, the judgment on level of risk exposure needs to include input from the model owners.

The risk exposure level may be systematically documented using a formalized model risk scoring criteria and risk ranking methodologies. Insurance companies can start with the existing internal sound practices, augment those practices with external sound practices (as needed), and formalize model risk assessment practices for recurring use. Model risk exposure depends on materiality, which can be quantified by creating an index defined as the product of impact of a model error times the probability of that error. This index can be used to score model risk and assess the impact of model failure as part of the model risk assessment. For model risk reporting, dashboards can be used to show trending of model risk profile.

As model risk assessments are performed, Risk Management professionals (Second Line of Defense) can help ensure that data and technology dependencies are consistently considered. The existence of data that meets pre-defined quality standards is a pre-requisite for the quality of model output and the model's utility. Likewise, the quality of information technology controls can impact the quality of model output (e.g., access and change management controls around and within the technology systems, databases, and company networks used to house and run models). The quality of the results of each model risk assessment exercise depends largely on the reliability of control mitigation information used to assess the level of residual risk. While risk and control owners (First Line of Defense) have a responsibility to develop, manage, and provide input on the state of mitigating controls, Risk professionals (Second Line) have a responsibility to provide oversight and challenge the input to maintain integrity of the assessment process.

Article III, Section 5: Model Validation

Currently, there is a wide range of model validation practices, often reflecting differences in size and complexity within the insurance industry. Model validation may be embedded as part of design and development efforts, and there are often no formalized requirements for ongoing validation of significant models. Firms that have models which are subject to more intensive scrutiny by regulators may have more mature validation practices. At some firms, model validation may be the sole responsibility of Risk Management (Second Line of Defense) or Internal Audit (Third Line of Defense), while validation may strictly be a First Line activity at other firms. The nature and extent of validation activities performed also vary widely within the firm and across the industry.

In order to evolve model validation practices², insurance professionals can formalize a framework with clearly-defined and delineated roles and responsibilities across each of the Three Lines of Defense. Personnel across both the First and Second Line of Defense have responsibilities with respect to model validation, though the contours of those responsibilities can appropriately vary based on the needs at the firm. The validation responsibilities noted below exist during the development and operation of the model. They are intended to serve as a quality control measure, and are generally undertaken by the First Line personnel subject to quality control activities:

- Peer reviews of initial design and changes to the most significant models
- Quality control during pre-implementation rollout of both new and updated models
- Completeness of documentation of model purpose, design, assumptions, parameterization, testing, limitations, and user instruction
- Appropriate approval and sign-off with development and use of the model
- Control of and assessment of assumptions and data when running the model

² We believe that, to the extent they operate within, or are fundamental to the use of a model, validation exercises should be performed on calculators, in order to determine that the calculator is operating as intended. While it may be prudent to perform validation like activities on other calculators, these would exceed the scope of a model risk management program.

- Reviews of output prior to use in decision-making
- Setting up ongoing performance monitoring appropriate to each models, once the model is rolled out

The validation activities noted below serve to provide an additional, more independent, assessment of the development and use of the model, and, with that, a degree of assurance³. While these are typically performed by the Second Line personnel, they may be viewed as First Line responsibilities at some firms (and conducted by an independent team within the First Line along with appropriate governance oversight by the Second Line).

- Review and assessment of whether the model is fit-for-purpose (appropriateness of assumptions, inputs, outputs, implementation, limitations, extent of testing or validation performed by the model owners)
- Confirmation that the model reviewers have sufficient expertise (i.e., whether model reviewers have both the business and technical qualifications to perform the validation exercise)
- Targeted testing of transactions and controls related to model input, processing, or output (can include review of assumptions, implementation and methodology)
- Assessment for potential model improvements or refinements
- Documentation of review performed
- Review of the scope and periodicity of model review (i.e., the process can ensure that the model is examined from end-to-end). While both on-going monitoring and annual validations may be done, continuous monitoring of “Critical” risk models may be needed.

Model validators should consider that large loss scenarios can result from the emergence of seemingly smaller risks that actualize at the same time. The intensity and depth and independence of model validation activities, with respect to a model, should directly vary with materiality assessments (i.e., size and impact of the model) and may consider the extent to which the outputs of the model being validated correlate with the outputs of other models. The Second Line is responsible for ensuring that good model risk practices are in place and that the practices are appropriate given the nature, scale and complexity of the business. The Second Line’s responsibilities include assessing the quality and adequacy of the model risk practices in place. For some firms and models this may include opining on whether the model can be relied upon to produce materially correct outputs (decisions, risk information, etc.). For other firms and models, the Second Line’s role may be for oversight over a framework that vests First Line owners with responsibility for opining as to the reliability of their models. Where the Second Line does not oversee or perform the Model Validation process, the Second Line can review whether there has been appropriate challenge and completeness in the validation practices performed by the First Line professionals.

³ In setting the scope of their review, model validators should also consider that errors in model inputs and outputs have contributed to historically observed model failures.

Article III, Section 6: MRM Reporting

Currently, there is a wide range of MRM reporting practices. Given the growing regulatory interest in MRM, insurance companies are starting to formally report on it to the board and senior management. Other companies have extensive procedures to ensure the consistency and quality of MRM reporting. The scope, depth, frequency, formality, and audiences for MRM reporting can differ from one firm to another based upon the relative significance of model risk to the firm. MRM reporting to the Board or Executive Committee may not be necessary or appropriate for some firms.

In order to evolve MRM reporting practices, insurance professionals may want to formalize a set of baseline and additional reporting requirements needed for the “Critical / High” risk models. Reporting requirements may be also defined in context of specific stakeholders (e.g., the Board Committee(s), Executive Management and Committee(s), functional management of model owner/users, and external parties such as regulators and rating agencies). A formalized communication plan may be appropriate for managing all external reporting as well as select internal reporting such as board updates.

The content of MRM reports can be driven by the purpose of the communication (e.g., starting with the functional managers, the content may be the most detailed, with elaborate metrics and issue documentation). For management committee level reporting (e.g., Model Risk Committee), that detailed content may be aggregated by business line, model risk categories, etc. For higher level management committees, such as the Operational Risk Management Committee or the Enterprise Risk Management Committee, the detailed content may be further aggregated and summarized along with updates on the use of multiple Key Risk Indicators (KRIs). For a board-level committee, the detailed content may be aggregated to the highest level to provide a snapshot of the changing model risk profile. For board reporting, a subset of the management committee KRIs may be highlighted along with commentary of any notable model errors and activities underway to evolve MRM practices. Internal Audit’s approach for board reporting may also be useful to formalize board updates on MRM.

Summary

This document was organized as a ‘constitution’ of ideas and principles to consider rather than as a list of rules. It is the hope of the CRO Council that this document will be of use to senior executives to familiarize themselves with MRM, as well as foster more communication among insurance MRM professionals.

MRM can be grounded in the principle that recognizes a model as an asset, which can be managed with the same level of rigor used to manage other assets of comparable value. The degree of governance required depends on model materiality considerations, which can be defined both quantitatively and qualitatively based on management objectives and risk culture. Sustainable management of model risks requires a degree of formalized oversight, which can be described in terms of a set of governance practices such as MRM policies and procedures, model inventory, model risk assessment, model validation, and MRM

reporting. Implementation of an effective MRM program requires leveraging existing internal approaches and formalizing these governance practices. An insurer's desired end state and ability to make enhancements to these practices depends on the organizational risk culture, stakeholder expectations, common sense and proportionality. Risk culture can be influenced by the strength of the communication from those in leadership roles across the Three Lines of Defense and by the level of clarity on specific roles and responsibilities for the development, maintenance, and use of the MRM program.

Bibliography

1. Federal Reserve SR 11-7