

Background

In Model Risk Management (MRM), the regulatory focus is expanding to include “non-models,” which are quantitative tools and techniques that, while not meeting the formal model definition, are still used for business decision-making and can pose significant risk.

In the US, regulators have highlighted the need for better oversight of non-models through Matters Requiring Attention (MRAs). Similarly, the UK Prudential Regulation Authority (PRA), through its MRM guidance (SS1/23) issued in May 2023,¹ introduced the concept of Deterministic Quantitative

Methods (DQMs). DQMs are quantitative methods that are complex and materially significant and do not qualify as models.

Non-models and DQMs are often numerous, decentralised and embedded across various departments, including those not traditionally within the scope of model governance. Despite this fragmentation, financial institutions are expected to develop dedicated frameworks for non-models and DQMs, establish inventories, and define review mechanisms (a mounting challenge for the industry).



An excerpt - DQM requirements under SS1/23

2.5 However, advances in technology and data processing power increasingly enable deterministic quantitative methods such as decision-based rules or algorithms to become vastly more complex and statistically orientated, conditions that would typically entail challenge to their applicability in supporting important business decisions. Understanding the potential impact the use of models and complex quantitative methods could have on firms’ business and safety and soundness is therefore equally important.

1.1.b Notwithstanding the above definition, where material deterministic quantitative methods such as decision-based rules or algorithms that are not classified as a model have a material bearing on business decisions and are complex in nature, firms should consider whether to apply the relevant aspects of the MRM framework to these methods.

1.1.c In general, the PRA expects the implementation and use of deterministic quantitative methods not classified as models to be subject to sound and clearly documented management controls.

Source: [Model risk management principles for banks supervisory statement](#)



The above unfolds amid MRM teams grappling with growing model inventories and rising complexity. Therefore, balancing regulatory expectations and practical implementation has become critical.

This point of view (POV) combines practical insights and concerns practitioners raise across model developers, validators

and governance teams. Drawing from conversations with industry leaders and regulatory insights (e.g., SS1/23), it outlines a practical and sustainable approach to managing non-models/ DQMs² within the broader MRM ecosystem. It also highlights areas where further dialogue and additional clarity from regulators would be valuable.

¹ Model risk management principles for banks supervisory statement

² Going forward, non-models and DQMs are used interchangeably.

Key industry challenges

1. Identification of non-models/DQM universe

Non-models and DQMs are often numerous, fragmented and distributed across functions. One of the primary challenges for banks is identifying the whole universe of such methods. Moreover, increasing compliance expectations may discourage business units from disclosing such methods, particularly if the reporting process is perceived as burdensome or overly complex.

While many banks have started with an existing inventory of End User Computing (EUC) or End User Developed Application (EUDA), many relevant tools remain outside these classifications.

Therefore, banks should adopt a **phased and proportionate approach** to identification:



Phase 1: Start with the existing EUC/EUDA inventory. Keep compliance expectations pragmatic to avoid burdening business units.



Phase 2: Work with business units involved in regulatory submissions. Trace backwards to identify non-models used that have not been captured yet.



Phase 3: Conduct structured awareness sessions with business/function units to explain the importance of identifying DQMs and the associated regulatory implications. Provide self-review checklists and encourage voluntary disclosures.



Phase 4: Bring one function at a time into the framework, making the rollout more manageable and encourage buy-in.

Many banks ask how DQMs differ from existing EUC or EUDA, which are already subject to control frameworks. This creates concerns about whether bringing these methods under a DQM framework would duplicate existing work.

Adding to the complexity, the interpretation of the PRA's SS1/23 definition of DQMs varies across the industry. For example, regulatory-prescribed market risk models, such as the Fundamental Review of the Trading Book - Standardised approach (FRTB-SA), built on a standard set of rules but involving complex formulas, are treated as models by some banks. Others classify them as DQMs. This lack of consistency has led to non-homogeneous treatment in governance and controls and differing views on the level of risk oversight required.

2. Determination of materiality and complexity

Drawing from the PRA's SS1/23 guidelines, the MRM framework does not need to apply to all non-models. Instead, it should focus on those that are material and complex. This raises an important question: how do we define materiality and complexity for such methods, and can the existing thresholds/methodology used for model tiering within MRM be extended to non-models?

For materiality, industry aligns with the principles already established within the MRM framework. This entails evaluating qualitative and quantitative factors.

Qualitative materiality can be assessed using existing criteria, such as regulatory penalties, operational disruptions, reputational risks and impacts on customers and employees—all of which are already part of standard MRM assessments. Meanwhile, quantitative materiality can use the current MRM thresholds for tier 1 to tier 4 models as reference points, depending on the nature and use of DQMs.

The definition of materiality for models where the quantitative impact is not immediately apparent, continues to require attention. For instance, HR-related models may not have a direct financial or regulatory effect at the outset. Instead, their significance depends on how users respond to the model's output. A flawed HR outcome, for example, might result in something as minor as an internal escalation—or, in more severe cases, litigation. This makes it difficult to establish objective materiality thresholds in advance and highlights the need for a more nuanced, context-driven approach.



In contrast, the evaluation of complexity, unlike materiality, differs from how it is defined for traditional models under the MRM framework. For models, complexity is typically based on the mathematical methodology used, such as regression techniques or machine learning algorithms. For non-models, however, complexity is assessed using operational and technical factors. These include an interdependent network of components, requirements for parallel processing, integration with legacy systems, complexity of feedback loops, level of transparency and overall implementation challenges.

3. Approach to tiering

Another key consideration in developing a non-model/DQM framework is whether these should also be assigned a tiered structure, similar to traditional models, to apply a proportionate review and governance approach based on their risk and complexity.

While some industry participants have proposed a 3- to 4-tier classification, they should follow a 1-tier (Approach 1) and a maximum 2-tier (Approach 2) classification to maintain simplicity and ensure effective implementation.

Approach 1: One tier

Material and complex non-models/DQMs can be recognised as distinct tiers within the existing MRM framework but governed by a separate set of standards, much like the differentiated standards applied across model tiers today. These standards can be adapted from the broader MRM framework but should be tailored to reflect the specific characteristics and risk profile of DQMs. This approach enables firms to use the existing MRM infrastructure, secure stakeholder buy-in and integrate non-model oversight into business-as-usual processes. Nonetheless, certain regulatory non-models may warrant enhanced scrutiny, leading to consideration of an alternative approach.

Approach 2: Two tier

Material and complex non-models/DQMs can be categorised into two tiers: tier 1, covering non-models with direct regulatory significance, and tier 2, including all others. This structure allows for a more rigorous review of high-impact regulatory tools while keeping the framework scalable and straightforward for broader adoption.

4. Validation approach

A key challenge in building a sustainable non-model framework lies in defining the appropriate intensity and focus on validation. One of the most debated questions is whether validation of non-models should be aligned with the expectations for lower-tier models within the MRM framework. While proportionality is necessary, validating non-models should reflect their

unique characteristics, operational relevance and risk profile.

In addition to the core components of model validation, such as documentation, input data checks and testing, the validation approach for non-models should focus more on implementation testing, operational controls and governance mechanisms. The following areas are particularly critical:



Documentation:

Many non-model tools lack adequate documentation or rely on thin narratives. At a minimum, validation should assess whether documentation covers the tool's purpose, underlying data sources (especially manual inputs), methodology and any adjustments applied, version control mechanisms, identified stakeholders, related controls and the date of last update.



Input/output data validation:

Validators should review the integrity of data sources, rule-based logic for data transformation, quality of manual inputs, reconciliation procedures and independently verify outputs where feasible.



Testing: A core focus of DQM testing should be implementation testing. Where User Acceptance Testing (UAT) has already been completed, validators should review the results for adequacy and confirm the completeness of test cases. Additional testing methods may include sensitivity analysis to identify key inputs, stress testing of interdependent components, accuracy checks and code or macro reviews to ensure correctness and transparency. As part of continuous monitoring, validators should also challenge the validity of thresholds and developer-defined assumptions (for example, while sovereign bonds may previously have been considered liquid based on macroeconomic conditions, in the current environment, the classification of Russian bonds as liquid securities should be revisited). Ultimately, banks must not treat DQM validation as a narrow review of calculations alone.



Controls:

Validators should review access rights, archival procedures and change management practices and ensure updates to logic or formulas are tracked and authorised.



Governance:

Governance checks should verify whether the tool maintains a current record of key stakeholders and approvers, the dates of the last and next scheduled reviews, remediation timelines and review frequency. These elements are essential to ensuring accountability and traceability within the non-model lifecycle.

In summary, while the validation of non-models/DQMs may not be as extensive as that of complex models, it must nevertheless be robust and tailored to these tools' specific risks and characteristics. A well-designed validation process meets regulatory expectations and enhances operational confidence.

5. Inventory management

Maintaining an integrated inventory that captures models and non-models within a unified system is essential. This inventory should include clear identifiers or flags to distinguish non-models and indicators of their materiality and complexity. Such integration streamlines governance and enables the tracking of interdependencies between models and non-models where applicable. It further supports the concurrent generation of standardised MIS reports for models and non-models.

As a best practice, it is recommended that inventory records for non-models undergoing review should mirror those maintained for models under the MRM framework. This includes uploading relevant documentation, capturing governance details, logging issues or findings, and assigning remediation timelines.

6. Reporting to senior management

Regulators expect senior management and the board to hold ultimate accountability for model risk. Accordingly, the risk reporting for non-models should also be formally established and ideally integrated within the overall model risk reporting framework. At the same time, it is recommended to maintain a clear distinction between KPIs for models and non-models. This separation will enable senior management to take a proportionate and risk-based approach to oversight and decision-making, ensuring that the specific risks associated with non-models are neither overlooked nor understated within the broader model risk landscape.

7. Optimising resource cost

Another challenge for MRM leaders is balancing the need for additional resources to cover material non-models against ongoing cost pressures. Redirecting existing model resources to non-model risks dilutes focus from complex models, creating a difficult trade-off. To overcome this, financial institutions are increasingly exploring automation of validation processes, such as GenAI-based tools for documentation, monitoring, review and inventory management, to optimise resources across the MRM lifecycle.





Conclusion

Regulators have long been concerned that highly material tools could fall outside the scope of model risk governance simply because they are not classified as models but “decision-based rules” or algorithms without explicit statistical modelling. To address this gap and capture any model risk arising from these tools, the regulatory focus is expanding to include non-models within the scope of the MRM framework.

This inclusion does not imply regulators expect identical tiering structures or validation rigour for non-models with probabilistic models. However, the expectation is clear: for all material non-models, financial institutions should implement proportionate guardrails — governance, documentation and periodic review — within their MRM framework. The objective

is to meet regulatory requirements today and ensure these critical tools remain reliable, transparent and beneficial to firms in the long run.

Based on discussions with industry leaders and the understanding of regulatory expectations, the abovementioned approaches provide a practical and sustainable path for integrating non-models/DQMs into the broader MRM ecosystem. Banks can meet regulatory expectations while optimising resource allocation and maintaining operational efficiency by embedding proportional tiering, adapting validation methods, unifying inventory and refining governance and reporting structures.

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