

Model risk management for the buy-side

Evolution towards an active approach

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1 An SR 11-07 equivalent is on the horizon

The European Banking Authority's (EBA's) draft guidelines on internal governance ([EBA/CP/2020 released in December 2020](#)) provide investment management firms with a consolidated guidance on the principle of proportionality of risk, governance framework, and risk culture and control mechanisms.

Given the recommendations and advisory on a 'three lines of defence model' for model risk management (MRM), we believe buy-side firms will be subjected to a framework aligned with the SR 11-07 guidelines. Posited by the US Office of the Comptroller of the Currency (OCC), these guidelines had revolutionised MRM at the sell-side firms.

Investment firms have been asked to create a sliding-scale approach depending on the size, scale and complexity of their businesses. The guidelines especially demand that firms with balance sheet size €100 million apply the principle of proportionality when managing enterprise risk.

SR 11-7, OCC 2000-16, OCC 2011-12 and other regulatory guidelines have been the key guiding elements for sell-side firms in the past decade. However, the case of Axa Rosenberg and Transamerica has veered the conversation to the buy-side, where there is only limited guidance on how MRM practices should be implemented. The latest guidelines will result in definitive MRM regulations, and will change the status quo within model risk management, for investment firms.

2 Adopting a holistic approach to align with regulators

Investment management models are typically not required to calculate regulatory capital, and they are largely used for decision-making. Model risk is, therefore, usually not a primary concern. However, with increasing complexity and quantum of business models, customised products, and regulatory demand, and the emergence of Artificial Intelligence (AI)-based tools and advisors, buy-side firms need to adopt a holistic approach to MRM. We see a definite move by regulators in this direction, not just in the European Union (EU), but across the globe.

Instances of the US Securities Exchange Commission (SEC) penalising investment firms for faulty investment models have sharpened focus on the need for a robust MRM framework, not only in the US but also the EU. A few regulations in the EU, such as Capital Requirements Directive IV, Supervisory Review and Evaluation Process, and Targeted Review of Internal Models, have guided firms on MRM, but they have not been able to meet the specific needs of investment management firms.

Key challenges: A survey by Greenwich Associates (a CRISIL group company) found that both buy- and sell-side firms have adopted MRM frameworks of varying complexity. However, the process remains largely manual, making it time-consuming and leading to disputes between business divisions with differing objectives and incentives. Over the past decade, the asset management industry has been going through a structural shift because of changes and innovations in product offerings, especially through exchange-traded and automated funds. A notable shift from active to passive asset management has increased the application of and dependence on models. These changes demand a fresh, customised approach to resolving challenges related to models and associated risks.

Summary of guidelines and key recommendations

Guidelines	Pillars	Key aspects				
	Proportionality	Risk profile consistent with governance, complexity of financial instruments	Size, business model scale, complexity of activity	Balance sheet size (€100 million) over a 4-year period	Assets under management, volume of client order, daily trading flow	Geographical presence, internal ratings-based authorisation, ownership and funding structure
	Role and composition of management body	Overall responsibility and accountability	Distinction between executive and supervisory functions	Responsible for overall business, risk, controls, framework	Periodic review, monitoring of internal audit plan	Clear role of chair and management and risk committees
	Governance framework	Independent compliance function	Know your structure	Adequate information on major risk drivers, regulatory compliance	Inclusion of financial crime assessment framework	Effective risk management for non-standard activities
	Risk culture and business conduct	Sound, righteous and consistent risk culture	Policies, communication, staff training	Incentive alignment between firm's risk-taking behaviour and risk profile	Values and conduct in accordance with specific needs and characteristics	Conflict of interest policy, effective mechanism to report breaches to authorities
	Internal control framework and mechanisms	Permanent compliance function with sufficient authority	Adequate information exchange between business line and compliance	Risk assessment for money laundering and terrorist financing, independent internal audit	Regularly updating internal controls and reporting deficiency	Awareness of model limitations, qualitative and quantitative approach to risk management
		Risk management function(RMF) role in early stages of risk management strategy	Risk appetite translated into risk limits	Impact assessment for material changes before implementation	RMF to ensure identification, measurement, accessing, managing, mitigating, monitoring and reporting of risks	Independently access limit, risk limit breaches, independent internal audit function
	Business continuity management	Independent business continuity function	Drivers of business disruption and potential impact	Recovery plan for critical resources	Documented business continuity and recovery plans	Appropriate training, regular testing and updating of business continuity plan
	Transparency	Training of staff to understand and adhere to policies and procedures	Written guidelines and manuals	Awareness of investment firm's strategies and policies in a clear and consistent manner	Annual publication of legal, governance and organisational structure	Conflict of interest policy

3 Nuanced approach required to balance comprehensiveness, compliance and cost

Buy-side firms are thus expected to approach MRM using the sliding-scale approach as outlined by the EBA. This is increasingly, an emerging expectation by regulators across the globe.

3.1 Setting up the framework for the three lines of defence

For investment managers, it is important to define model risk based on the uniqueness of businesses and risk exposure. A standard model development framework should provide a structured approach across the model lifecycle, clearly define roles and responsibilities, draw up the three lines of defence for effective control, and maintain effective policies and procedures.

Standard MRM framework

Model development	Model validation	Model monitoring
<ul style="list-style-type: none"> Data assessment Model design Model code Model testing Model documentation 	<ul style="list-style-type: none"> Model assumptions Model robustness Stress testing Independent evaluation Model interconnectedness Model validation outcome analysis 	<ul style="list-style-type: none"> Fit for use Regular scrutiny Manging model lifecycle Model retirement Tracking model uses

3.2 Adopting a tier-based approach

The first step to MRM should be identification and compilation of an inventory of models in use across the organisation. The next would be to classify the models into four tiers, based on their impact on the business.

A typical tiered structure is outlined below:

Tier	Considerations and decision points
I	<ul style="list-style-type: none"> Proprietary models that have high impact on business and are broadly applied across the company Require high-level expertise Can trigger high-value transactions
II	<ul style="list-style-type: none"> Trading models that affect a small proportion of business Result in electronic trading, but need additional inputs Used in hedging portfolios
III	<ul style="list-style-type: none"> Models that assist portfolio managers in portfolio construction Compare fundamental features of securities and calculate measures of uncertainty
IV	<ul style="list-style-type: none"> Models that need a considerable number of additional inputs to make business decisions Serve the firm's non-key business areas Are easily understood

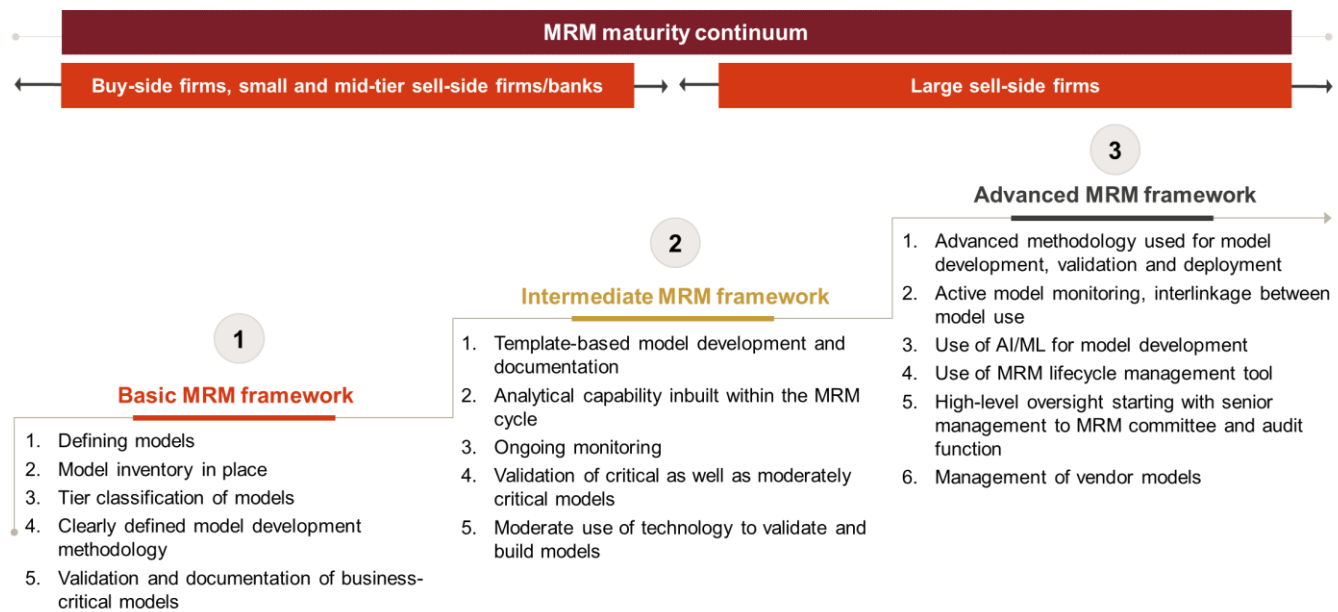
These models could be further categorised into the following:

Model type	Tier I	Tier II	Tier II	Tier IV
Investment models				
1. Economic models	✗	✗	✓	✓
2. Quantitative models				
3. Fundamental business models				
Risk models	✗	✓	✓	✗
Valuation models	✓	✓	✗	✗

3.3 Buy-side firms and the MRM maturity continuum

MRM cannot follow the one-size-fits-all approach. For buy-side firms, their location in the MRM continuum has to be decided by the model-use environment and risk appetite as well as degree of regulatory and stakeholder focus.

The following chart acts as a guiding framework for buy-side firms to determine where they lie on the MRM maturity continuum.



While the MRM function at sell-side firms has evolved over time and changes have been brought in following expensive lessons. It is only a matter of time that regulatory scrutiny tightens or global/local regulators come up with specific standards for buy-side firms. The EBA consultation is a move in this direction.

A well-thought-out MRM framework will involve – as well as benefit – the board, senior management, MRM committee, business units, IT teams and clients of the firm. Moving from model audit to a fully integrated MRM framework is a culture change that needs to be embraced, and soon. While we see large buy-side firms are getting into the act, most of the industry is way behind. It's time to change the status quo.

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4 CRISIL | GR&RS | Model governance

CRISIL's Global Research & Risk Solutions (GR&RS) division assists buy-side firms shift from model audit to a full-blown MRM framework. We bring best practices to the model governance implementation journey, enabling investment firms to become regulatory compliant and improve risk oversight.

Our teams have expertise spanning the MRM lifecycle, from model development, validation, documentation to ongoing monitoring. We have built accelerators and tools to achieve strategic model governance objectives at optimal costs. Our award-winning [Model Infinity™ platform](#) helps industry to address model inventory and MRM governance needs comprehensively.

CRISIL's MRM practices are led by experienced industry professionals



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