



WHITEPAPER

*Getting IMA Approval –
How Important is the Choice of System?*

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Opting for the internal model approach (IMA) to market risk modeling is becoming a necessity for banks. George Mutema explains how choosing the right system is vital to gaining regulatory approval for an IMA-based model.

The standardised method for calculating market risk is based on a pre-specified 'building-block' approach. Market risk is computed for each portfolio exposed to interest rate risk, exchange rate risk, equity risk and commodity risk. This method is highly conservative as it adds up the capital charge for each risk category and assumes that the 'worst loss' will hit all portfolios at the same time.

However, the standardised method, which is prescriptively defined in regulation, often does not accurately reflect the true risk profile and risk diversification benefits of an institution. In order to address the weaknesses of the standardised method, banks are moving towards the use of internal models. However, in order to use such models the bank must apply for IMA approval from their local regulator.

The benefits of the internal model approach should be obvious. It allows banks to use more advanced risk management techniques, from parametric models to historical or Monte Carlo simulation-based Value at Risk (VaR). The greater sophistication enables banks to better understand and control their exposures and to apportion risk to specific areas of their business.

This in turn creates more diversification benefits for the bank, instills a greater sense of risk discipline and generates a risk-weighted approach to assets. Ultimately it is a far more forensic way to look at market risk and in most if not all cases, opting for the IMA rather than standardised method will result in a lower capital charge.

As would be expected, the decision to introduce an IMA was originally aimed at the more advanced top tier banks in the developed markets that had a capability and resources, and also greater trading activities far beyond the majority of small and mid-sized institutions. However, over time, the IMA has become more widely adopted by mid-tier institutions and encouraged by regulators across the world.

In the post-financial crisis era, the IMA has now become the preferred option for regulators who recognise that a more forensic and discriminatory approach to credit and market risk is essential for institutions of any significance to the financial system.

REGULATORY REQUIREMENTS:

There are a number of regulatory requirements that have to be met to qualify for the IMA approach, both qualitative and quantitative. On the quantitative side, firms must have a credible VaR methodology to underpin their market risk. Firms must also be able to calculate stressed VaR in order to address the weaknesses of conventional VaR that emerged in the volatile market conditions that prevailed during the financial crisis.

The ability to calculate an Incremental Risk Charge (IRC) is another requirement. Regulators have recognised that there are a number of idiosyncrasies in the risk attached to certain instruments, notably credit-driven vehicles like credit default swaps. Traditional market risk methodologies will only capture the short-term market risk in banks' trading books even though longer-term credit or counterparty risk, whilst low probability, is inherent and could have a high impact. Therefore regulators are encouraging greater integration of credit and market risk methodology.

On the qualitative side, there are basic requirements that regulators want demonstrated when they come to make their inspections. The bank must have an independent risk control unit that is responsible for the design and implementation of the market risk management system. Furthermore an independent review of the risk measurement and overall risk management process must be carried out as part of internal audit process. Another requirement concerns comprehensive stress testing which mandates that any test must go beyond what was in place before the crisis and involve extreme yet plausible events.

Regulators also require that models be back-tested so that they can verify the accuracy of its calculations and penalise any institutions that fall short in this regard. Model validation is another requirement. Regulators are increasingly stringent in their checks on the quality of the underlying data. The data flows and processes associated with the risk measurement system should be transparent, well documented and accessible.

Regulators are also insisting on a use-test requirement. In order for a VaR number to be credible, it must be used as the basis for the banks' daily risk management actions. After all, there is no better way to ensure that a VaR number has been produced in good faith and it prevents banks from merely paying lip-service to the regulatory requirements.

SYSTEM CHALLENGES:

The regulators' insistence on complete transparency is understandable. In order to approve the bank's internally developed risk models, they must be able to see all the underlying data, trace its origins and understand how the risk models work with other systems within the bank. However the need to be open creates a number of system and operational challenges for banks.

To produce a VaR number is no longer enough. Banks must be able to explain how they got there by reproducing each and every data flow and then drilling down into these flows to extract the fine detail. This is an intensive task that involves significant investment in systems.

The demand for documentation may seem straight-forward but many of the models that lie at the core of banks' risk management operations were not designed to operate in today's transparent markets. Many are simply black boxes that are able to produce a VaR number on request but are not able to produce the necessary diagnostics. Some models are so old that their inner workings have never been properly explained.

In order to adequately manage a bank's daily risk exposures, the analysis needs to be far more complex than conventional VaR – this includes calculations such as stressed VaR, IRC and CVA. Coupled with the extra data demands, this can lead to performance issues.

Given this extra complexity and technological challenges that institutions face, the implementation period for a fully compliant internal model approach is lengthy and it can take between two and four years for full regulatory approval to be granted.

And once approval is granted, banks are then unable to make any significant changes to the system without undergoing a similar inspection process. Therefore it is easy to see why banks are so keen to find risk models and systems that will earn them regulatory approval in as short a time as possible.

The systems that will meet this requirement for rapid approval will be the ones predicated on regulatory readiness. This means that the latest calculation methods such as IRC, stressed VaR and CVA will need to be built into the system.

It should also be a data consistent system that ensures data integrity with full visibility and drill-down capabilities. This consistency should make the validation process far more manageable.

Equally important is the provision of transparency. As market and credit risk become more tightly integrated, transparency will be the glue that holds a bank's risk management together, enabling risk managers to understand how the underlying risk calculations were made, to clearly and completely document all the models and to pull out any supporting data when needed.

Risk systems must also be flexible and ideally built on a component-based design. A component architecture addresses specific customer needs by building solutions from a combination of interoperable, functional components, built to common standards on a common platform, for example the ability to store the lowest level of detail and be able to perform ad-hoc drill down. It can also leverage new technologies to meet any future regulatory requirements.

CONCLUSION:

As integrated market and credit risk becomes an increasingly crucial part of financial institution's strategy and structure, there will be very few that can afford not to seek supervisory sanction for their internal risk models. Not only is there the very obvious reputational issues that could arise for any bank that opts for the standardised method, the main consequence is punitively high level of regulatory capital as the regulator will be telling a financial institution how to calculate their risk and setting highly conservative capital adequacy levels as a result.

The preparatory work is arduous and detailed data requirements are onerous but the regulators' demands are essentially simple – risk systems must be robust, credible, consistent, error-free, easily explicable and regularly reconciled. However, gaining regulatory approval for the IMA cannot be presumed and the choice of system will have a huge impact on how successful banks are when seeking the authority's assent and how quickly this can be obtained.

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