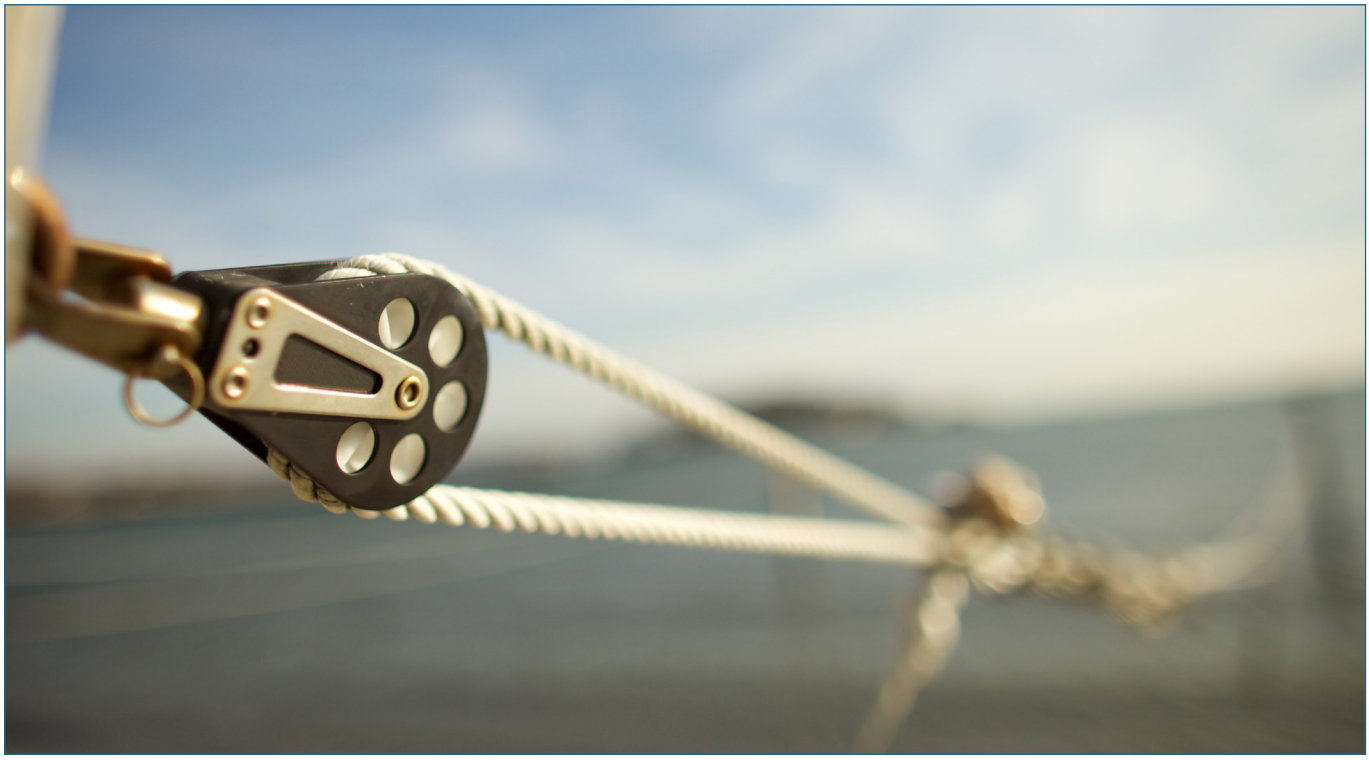
Pulling it all together

Challenges and opportunities for banks preparing for FRTB regulation



July 2017 marked the halfway point between the Basel Committee on Banking Supervision's finalised minimum capital requirements for market risk – more widely known as the Fundamental Review of the Trading Book – and the 2019 deadline for its implementation. IBM discusses the challenges and opportunities facing banks as they prepare to implement this new regulation and how data aggregation and reporting tools can aid compliance

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While many industry participants have planned their Fundamental Review of the Trading Book (FRTB) programmes, which by design are multifunctional and technology-heavy, the spectrum of current states for these programmes remains broad. This is, to some extent, because of uncertainty around regulatory requirements in some areas and regional differences over implementation timelines. It is also becoming clear that, to meet FRTB requirements, banks will need to undertake considerable design and development work on their target operating models for risk management, internal and external reporting, and technology infrastructures.

According to William Lang, managing director at Promontory Financial Group, an IBM company, "the sheer scale of the challenge – particularly for producing internal model estimates – threatens to overwhelm many banks. Nevertheless, developing a compliant FRTB internal model approach (IMA) is critical for banks given the substantial capital advantages of the IMA."

To adequately address the major design and development aspects of FRTB implementation, banks must have the capability to process large amounts of data with diverse sources and usage. They will then have to drill down to a granular, product-specific level to carry out comprehensive analysis on this data – including desk-level capital, profit and loss (P&L) numbers and 'what-if' analysis – as well as designing sandboxes for special case studies.

It is not unusual for banks to have many sources for generating FRTB sensitivities and inputs across their front-office systems – particularly for international banks with subsidiaries spread out around the world. Consequently, banks will immediately benefit from an intelligent aggregation tool for building business intelligence that will allow firms to perform impact and design analysis on real data at every level of their hierarchies, enterprise-wide and across geographies.

These analyses are then brought together at the bank's FRTB programme management level, building appreciation for the vast scope and complexity of FRTB implementation, and increasing understanding of the impacts and possible options. This enables FRTB programme teams to design the implementation phases of their FRTB programmes more comprehensively and accurately. In doing so, false starts and course corrections can be minimised, reducing both the costs of and risks to the FRTB programme.

As many banks have opted to work with the systems they already have in place – and it is rare for large multinational banks to be standardised on a single trading platform – it is vital that the aggregation tool is trading platform-agnostic in order for banks to quickly assemble an enterprise view of their FRTB capital using these diverse sources of data.

It is also widely accepted that FRTB programmes would benefit from an early start on the FRTB reporting requirements. These requirements are expected to be extensive and include increased technical content for internal management, regulatory reporting and public disclosure reporting. By starting early, banks can develop a view of what they will need to manage their business well in an FRTB world and for continued regulatory compliance.

Some FRTB programmes have working groups dedicated to understanding the Basel Committee on Banking Supervision's (BCBS) newly introduced requirements for Pillar 3 disclosures (BCBS d400), as well as compliance with BCBS 239. Reporting needs for FRTB are closely intertwined with the ability to aggregate and analyse data flexibly. When both the aggregation and reporting are done using the same platform, the steps needed for reconciliation and verification are minimised.

The amount of work required to meet these aggregation and reporting needs depends, in most cases, on the condition of a bank's infrastructures, and can range from a relatively light redesign to a complete overhaul.

This presents a significant challenge given the tight timelines, the number and scale of decisions banks must face, and issues with a material impact they must address within the regulatory timeframe of FRTB. In addition, the cost of a complete transformation can be prohibitively high at a time when firms are under pressure to minimise these costs. Therefore, more and more banks are considering working with technology and data vendors to find accelerators.

"One of the least desirable, but most probable, outcomes of the FRTB rules is the situation whereby banks have to manage capital adequacy of their trading operations using a mix of standardised and IMA desks. So, it is imperative for banks to be able to form a realistic picture of this mix as early in the FRTB programmes as possible – to inform decision-making on their target operating models post-implementation," says Hovik Tumasyan, FRTB specialist at IBM Watson Financial Services Solutions.

Consider the following examples of rapid deployment and the big data approach.

Rapid deployment allows getting straight to important impact studies

A large European bank – an IBM client – determined that it needed a wide range of detailed analyses to properly and quickly review its trading desk structure and determine the impact of FRTB capital charges on the newly designed desks, as soon as possible.

IBM personnel worked with the bank to set up an aggregation and reporting platform to run across multiple systems in the bank. It was operational across 90% of the business within three months; the IBM aggregation and reporting tool allowed the bank to load and analyse data from hundreds of portfolios in minutes.

This provided the client with enough real full-trading volume data to conduct the sort of on-the-fly analysis that enabled top management to make critical business decisions, consider various desk scenarios or to calculate stress impact using either a full or reduced set of risk factors, or by choosing different time horizons.

Similarly, the bank was able to identify which risk factors could be modelled and which were non-modellable, and thus explore their impact, while the depth of data also allowed it to better understand the default risk on complex structured derivatives that are linked to a host of underlying securities.

Having the IBM aggregation and reporting tool in place also gives the bank the chance to test the alignment of its data, models and reporting from the front office with that from the risk function, in line with FRTB requirements.

"This project reflects common issues for banks. For us to maintain internal model approval, regulators are demanding more granular risk measures, more rigorous modelling methodologies and stronger operational controls. It's an enormous technical challenge that demands co-ordinated work across several teams," says one client head of internal models.

Another client's head of trading noted that the regulations are changing the playing field for traders, and having analytics they can trust to quantify capital requirements is necessary to help the firm optimise its trading strategies.

A big data approach to FRTB and market risk management

Many banks have already embarked on big data projects and are creating reservoirs of data that will serve all areas of the firm. However, the key to FRTB compliance may lie in the use of the appropriate tool that can handle the volume and types of data required for analysis, to process the vast and rapidly growing supply of data generated by the banks' trading businesses, now and in the future.

Another large global bank has been building a big data lake across the business, but its existing market risk engine lacked the ability to efficiently and accurately produce the various sensitivities and P&L distributions, and could not aggregate the outputs into reporting that meets FRTB requirements for standardised and IMAs.

IBM designed and carried out proof-of-concept work with the bank using its aggregation and reporting platform to demonstrate how to pull the various data streams together into a big data cluster and carry out necessary aggregation and capital calculations. Reading in multiple days' worth of data with billions of P&L values – over one terabyte of data – the IBM Algo Aggregation for FRTB Reporting module calculated top-of-house capital reports in 1.5 seconds and 10 concurrent days in five seconds. This was acheived using around 20 cores of commodity hardware.

This approach is particularly useful for large international banks that often have multiple front-office systems and subsidiaries. The use of IBM's aggregation and reporting tool on big data allows banks to avoid large-scale and costly undertakings, consolidating all front-office systems in the main bank with the subsidiary systems.

Instead, a group-wide enterprise view of FRTB results can quickly be assembled using IBM's aggregation tool, whether running on-cloud or on a standalone server, using big data or relational databases. The platform can source granular-level data, regardless of the legacy system, from every part of a bank's trading operation and allows users to visualise it.

Early adopters will benefit

The transformative nature of the FRTB regulation for banks' market risk systems and infrastructure is significant. While the regulation may be delayed in some regions compared to the original 2019 deadline, early insight and planning into the wide ramifications is essential to help banks make the right longer-term strategic decisions with their risk systems and processes.

Banks with powerful aggregation and reporting capabilities will also be better positioned to prepare and justify their FRTB approval with the regulators. Given the extensive nature of FRTB requirements, national regulators will likely be hard-pressed to deal with all the applications in a timely manner. Banks that are well prepared for an early submission have a better chance of missing the rush and getting up and running with regulatory approval ahead of competitors.

"Despite regulatory uncertainly in some regions, the FRTB implementation deadline is still bearing down on banks, and delays may prove to be extremely costly in the longer run. By implementing a proven, rapidly deployable and big data-compatible FRTB aggregation and reporting solution now, banks can keep ahead of the regulation and turn their attention to completing the remaining elements of their risk management operating model," concludes Duncan Cryle, global head of Algo One Offering Management, IBM Watson Financial Services.

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