



Beyond FRTB: Risk Management and Enterprise Data Opportunities

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Over a decade on from the 2008 global financial crisis, compliance continues to dominate the board rooms of Asian sell-side and buy-side firms. Among the biggest compliance burdens is the challenge of managing and aggregating vast amounts of data for accurate reporting of financial positions, P&L and risk numbers to regulators. New regulations have meant firms have had to deal with a greater volume of increasingly complex sets of data than ever before, as well as new ways of exchanging data and documents.

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Currently, banks are grappling with implementing the Fundamental Review of the Trading Book (FRTB), the market risk framework under the Basel III reform package. Despite the Group of Central Bank Governors and Heads of Supervision (GHOS) – the Basel Committee's oversight body – pushing back the deadline for FRTB compliance by one year to January 2023, the need for banks to focus on the framework's data management groundwork has not waned.

While the current global economic crisis was triggered by the coronavirus pandemic, which is unlike the events of 2008, the regulations put in place to prevent the recurrence of similar crisis events are being tested now. A key lesson has been that the value and benefit of organised, efficient, and cost-effective data management now can serve as the foundation for future operational roll-outs and opportunities for enterprise management.

Regulatory interplay

Even though the deadlines for compliance with FRTB and other Basel regulations have been extended, this has only bought a bit of breathing space, not a pause button. The rules underpinning FRTB are designed to address issues related to under-capitalised trading books, capital arbitrage between banking and trading books, and internal risk transfers within banks.

Through the FRTB rulebook, the Basel Committee on Banking Supervision (BCBS) is seeking a more objective differentiation between the trading book and the banking book, and to eliminate capital arbitrage. It also features a revised internal models approach, characterised by a shift from Value-at-Risk (VAR) to the Expected Shortfall (ES) measure of risk, for a better reflection of tail risk and capital adequacy during periods of significant financial market stress.

These reforms are challenging for banks around the world, including those in Asia Pacific. ISDA noted in a report last year that FRTB presents particular implementation challenges for emerging markets, including “barriers to entry, a shortage of data, and concerns about the treatment of sovereign debt.” The report highlighted that the impacts of FRTB on emerging market banks and economies had not yet been assessed.

It is worth noting the relevance of other global regulations to FRTB compliance; many of these are being integrated into banks’ compliance programmes concurrently. For instance, the BCBS 239 framework, issued in 2013, entails requirements of timeliness, quality and accuracy in relation to risk data aggregation and reporting. FRTB programmes can leverage the standards established by BCBS 239, such as those for constructing golden data, maintaining strong data lineage documentation, and risk reporting. That said, studies show that although G-SIBs were the first banks to start on the BCBS 239 compliance journey, none are as yet fully compliant, despite years of effort.

There is also the BCBS-IOSCO bilateral margining regime for non-centrally cleared OTC derivatives, which requires initial margin (IM) calculations that have strong parallels with the sensitivity requirements and calculation mechanism used for FRTB. Much like other global regulations, the deadlines for the final two phases of implementation have also been extended by one year – to September 2021 (phase 5) and September 2022 (phase 6). Still, banks are advised to leverage their margining work in FRTB compliance programmes.

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Meanwhile, the deadline for transitioning away from LIBOR remains unchanged (end-2021), with ongoing preparations continuing to progress at most financial institutions. As LIBOR’s usage in financial contracts continues to diminish, the development of alternative risk-free rates will continue. However, the unavailability of historical data in these new rates may create new challenges for FRTB’s modelling requirements, compounded by transition-related impacts to capital and other operational considerations.

The history and interplay of various regulatory regimes reinforce the need to develop a data management strategy and associated architectures that can provide a holistic view of firm-wide data and can be matched to governance operations, in order to set up efficient compliance programmes.

Data challenges

With this background in mind, NeoXam has identified eight data challenges that banks` need to manage in the FRTB transition:

Risk sensitivity: Under the standardised approach, the main capital component is calculated using the sensitivity-based method (SBM), which aggregates three risk measures - Delta, Vega and Curvature - for seven risk classes. For each risk class, banks must map their instruments consistently and transparently to a set of prescribed risk factors, risk weight the sensitivities, and aggregate the resulting risk-weighted sensitivities separately for delta and vega risk.

Modellability of risk factors: The final standard clarifies the criteria banks must use to test the eligibility of risk factors used in internal models, which impacts the non-modellable risk factor (NMRF) capital charges calculated under stressed scenarios. Passing the FRTB Risk Factor Eligibility Test (RFET) requires real price observations derived from actual transactions or committed quotes, which relies on access to complete and high-quality data.

Adding a new instrument: Under the internal models approach, when new instruments lacking price history are added (e.g. IPOs, new issues), their risk factors need to be derived historically with backfilled data from a proxy, taking into account trading calendars and day count conventions. Likewise, under the standardised approach, new instruments require risk factors to be added and mapped to the appropriate risk buckets and sensitivity shocks. These operations require automation and involve large data sets.

Liquidity horizon: For capital calculations under FRTB, each risk factor is assigned a liquidity horizon, i.e. the time required to exit or hedge a risk position in stressed market conditions, to factor in the risk of market illiquidity. Both the internal models and standardised approaches require banks to source historical data for multiple liquidity horizons to perform simulations and calculate expected shortfalls.

Consistent data taxonomy: Under the SBM, banks must determine each sensitivity and curvature scenario based on instrument prices or pricing models that an independent risk control unit uses to report market risks or actual P&L. As such, front-office pricing models need to be aligned with the FRTB sensitivity models with a consistent data taxonomy.

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Default risk charge: Default risk charge calculations under FRTB require banks to recognise default correlations among obligors, calibrated over a period of at least 10 years, including a stress period and measured over a one-year liquidity horizon. To calibrate correlation matrices, an internal ratings-based (IRB) approach should be used to estimate probability of default (PD), which can present data availability challenges. Where such estimates do not exist, PDs must be computed based on historical data of publicly traded securities or they can be sourced externally.

P&L attribution: Under FRTB, banks must demonstrate they satisfy the P&L attribution (PLA) test in order to use the internal models approach. The PLA test compares the hypothetical P&L generated by a trading desk's pricing models and the daily risk-theoretical P&L generated by the bank's own risk models. The input data used in the two measures can vary due to different providers of market data sources or from time-fixing differences, highlighting a need for pre-transformation alignment of the market data.

Stress testing: Banks must undertake routine and rigorous stress-testing, covering supervisory scenarios, simulation scenarios based on current portfolios against previous stress periods, and self-developed hypothetical scenarios. The hypothetical scenarios should reflect shocks based on the characteristics of banks' portfolios, which rely on high-quality in-house data and supporting infrastructure. The infrastructure should allow for quick-to-implement ad hoc changes as might be prescribed in new or adjusted regulatory stress tests.

Data transparency

What each of these challenges has in common is the need for reliable data. Because trade and risk systems are largely unable to extract, transform and load (ETL) data, and lack data enrichment and quality control services, many of the above-mentioned processes tend to rely on a combination of Microsoft Excel-based calculations and in-house tactical solutions that are seen to operate as black boxes.

This lack of automation has drawbacks, including a high frequency of redundant acquisition, validation and mapping processes, a lack of process standardisation, and heightened operational risk. Additionally, the purpose-built nature of in-house solutions typically brings a lack of flexibility to adjust flows, models and rules to cope with new regulatory requirements, as well as a lack of transparency and scalability around data flow and configuration.

“These stop-gap measures are completely contrary to the aims of FRTB,” said Tim Versteeg, Managing Director for APAC at NeoXam, a data management and transaction software solutions specialist. “Banks have to move away from manual and black box approaches, and show transparently how their processes are performed and data lineage is governed.”



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***- Tim Versteeg
Managing Director, APAC
NeoXam***

According to Versteeg, banks need to strategically plan for and consistently manage data flows with a reliable data quality monitoring system based on a single, centralised source of data and a consistent data taxonomy. “A single repository of data with standardised and defined processes in place to govern the data – this provides you a single version of truth which you can then actually provide to the regulator in a speedy manner whenever needed,” he said.

A dedicated and robust enterprise data management system helps automate and scale banks’ compliance operations, while also reducing costs and speeding up time-to-market for new regulations that will continue to be introduced. Additionally, by rolling out such a solution throughout an enterprise, the repository of information a bank builds up becomes usable throughout the organisation’s operations.

Standardisation and automation of data flows, implemented in a way that enables timely acquisition, cross-referencing and integration of datasets from

external providers and internal sources, have clear utilities beyond FRTB. “Beyond FRTB, this can also be leveraged to help banks comply with BCBS 239, which itself emphasises principles of accuracy and integrity, completeness, timeliness and adaptability of data,” Versteeg said.

Unlocking efficiency

Banks that implement FRTB in the right way will also be able to leverage increased levels of transparency and data lineage for transparency, fairness and efficiency in cost allocation. While this is required to roll-out the implemented market data solution, it also allows the bank to on-board additional data users within a bank, and allocate costs to them proportionately.

“This means that not only is a bank able to achieve compliance with regulatory requirements, data costs can be directly attributed to different functions and business units, unlocking vast economies of scale,” Versteeg said.

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Throughout the bank, and often for little to no additional cost, processes that are standardised to comply with FRTB can also bring other efficiencies across a bank’s businesses. For example, banks that need to standardise their risk-factor and reference-data taxonomies will be able to draw upon the same golden sources of data without time-consuming mapping exercises.

Standardisation will additionally generally result in fewer redundant vendor licenses, less maintenance, and fewer manual processes, which will free up human and computational capacity. Further efficiencies can also be gained from automated data cleaning processes and automated report production – whether for reporting to management, shareholders, or regulators.

The aim of FRTB is to achieve better transparency, enhanced risk management and greater operational resilience. On the off chance that the collective industry memory of surviving the global financial crisis has receded, the world is experiencing anew the value of those three principles in the age of coronavirus.

In an exceedingly uncertain and volatile environment, capital efficiency, cost savings and balance sheet resilience become significant drivers of survival, with the long-term goal of return on equity. Both survival and profitability can be powered by a revamped trading-risk infrastructure predicated on transparent, standardised and accessible data.

FRTB’s implementation may be postponed for a year, but the principles underpinning the reforms are more pressing than ever.

About NeoXam

NeoXam is a leading financial software company, delivering solutions and services for 170+ customers in 25 countries worldwide. NeoXam is committed to its clients' success, delivering reliable and scalable solutions, processing more than USD 14 trillion worth of assets per day and serving over 10,000 users.

Through its combined talents and transparent approach, NeoXam helps buy- and sell-side players address the continuous business and regulatory changes in financial markets, enable growth, and better serve their clients. NeoXam relies on 500+ staff with offices in Paris, Frankfurt, Luxembourg, Zurich, Geneva, Milan, Singapore, Hong Kong, Shanghai, Beijing, New York, Boston, Tunis and Cape Town.

NeoXam is a leading player in Asia Pacific to address regulatory compliance issues. It has successfully implemented DataHub for major banks in Singapore and Malaysia. As regulatory demands increase, NeoXam with its data centric, white-box software solution is able to achieve an easy-to-govern and transparent way to manage the data supply chain for risk management.

www.neoxam.com

Get in touch

Tim Versteeg
Managing Director, APAC
NeoXam
tim.versteeg@neoxam.com

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