

Rewriting the Trading Book

Insight and Strategies for Entering the FRTB Era

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Introduction

Market risk moved front and center in 2017, as financial institutions started preparing for life under the Fundamental Review of the Trading Book (FRTB) requirements. The standards, approved in January 2016 by the Basel Committee on Banking Supervision (BCBS) and slated for compliance in January 2019, will fundamentally change the way firms calculate, plan for, and manage risk on the trading book.

Financial services organizations are anticipating a rocky ride. According to [Chartis Research](#), more than 50% of financial institutions surveyed in the firm's 2016 FRTB study said they are not certain their bank will meet the 2019 deadline. While some banks are moving forward aggressively with a strategy, others are choosing to wait for greater clarity from national regulators about how they intend to roll out the new requirements in their specific jurisdictions.

This mindset is a risky proposition as compliance is expected to require transformation that spans from data management to reporting as well as drive unprecedented, lock-step alignment between risk and finance – a goal that has proved elusive to many organizations.

Firms that begin planning today can reap the benefits of greater preparation, especially if they focus on foundational systems that will provide the visibility and flexibility required in the new world of FRTB. At the top of the list are a unified data foundation, expanded data modeling, next-generation model validation and governance, and extensive automated reporting capabilities.

Writing a New Book

The goal of the new FRTB standards is to “ensure that the standardised and internal model approaches to market risk deliver credible capital outcomes and promote consistent implementation of the standards across jurisdictions.”

FRTB sets forth several significant changes:



A revised boundary between the trading book and banking book. A nearly non-permeable boundary will serve to eliminate arbitrage between the regulatory banking and trading books, while still respecting banks' risk management practices.



A revised internal models approach for market risk. The new approach introduces a more rigorous model approval process that lets supervisors remove internal modeling approval for individual trading desks. It also allows a more consistent identification and capitalization of material risk factors across banks, and sets constraints on the capital-reducing effects of hedging and diversification.



A revised standardized approach (SA) for market risk. The standardized approach has been overhauled to make it sufficiently risk-sensitive to serve as a credible fallback as well as a floor to the internal models approach, while still providing an appropriate standard for banks that do not require a sophisticated treatment for market risk.



A shift from value-at-risk to an expected shortfall measure of risk under stress. Use of expected shortfall calibrated to stress conditions will help to ensure prudent capture of “tail risk” and so maintain capital adequacy during periods of significant market stress.



Incorporation of the risk of market illiquidity. Varying liquidity horizons are incorporated into the revised standardized and internal model approaches to mitigate the risk of a sudden and severe impairment of market liquidity across asset markets. These replace the static 10-day horizon assumed under Value at Risk (VaR) for all traded instruments in the current framework.

Source: Revised framework for market risk capital requirements issued by the Basel Committee, January 14, 2016, <http://www.bis.org/press/p160114.htm>.

Given the magnitude of these fundamental changes, the implications of FRTB will be far reaching.

First, the new SA is designed to be more risk sensitive. As such, it requires banks to structure pricing models to capture more granular and complex risk across different asset classes in the trading book. In addition, because of the increased burden of defending internal models moving forward, banks will be more likely to migrate toward extensive use of the new SA.

While internal models still will be permissible, they will be subjected to much greater regulatory scrutiny and approval as well as limitations, including more granular and longer liquidity horizons. Regulatory approval will require firms to verify model accuracy via rigorous profit-and-loss (P&L) attribution tests as well as back testing using daily results. It is anticipated that most banks will migrate toward a hybrid version—using the new SA for some trading desks and internal models for others—driving greater compliance complexity and costs.

The new FRTB requirements also replace VaR and Stressed VaR metrics for risk with a new expected shortfall (ES) measure for internal models—requiring additional data measurements and investment. As important, FRTB will significantly limit arbitrage by establishing a clear demarcation between a firm's trading book and banking book—sunsetting an era characterized by great flexibility in moving assets between books. FRTB removes nearly all of a firm's ability to move assets between the banking book and trading book—virtually eliminating the potential for arbitrage. Similarly, banks will be required to more carefully identify and defend which assets and data belong to each book of business—driving the need for extended enterprise visibility and new levels of data governance.



Regulators are also looking beyond the numbers, expanding their purview to include assessing the processes and systems that financial institutions use to calculate market risk. As such, metrics for and visibility into intraday liquidity and exposures against limits for the trading book portfolio are increasingly in play.

Under FRTB, market risk becomes a new daily activity as firms will be required to compute capital requirements each business day instead of monthly, as has been the norm. To monitor market risk daily and continuously monitor and evolve models, banks will require data infrastructures that deliver expansive quantitative capabilities, as well as next-gen traceability.

Hitting the Bottom Line

FRTB—because of its requirements to capture more granular and complex risk across different asset classes—is expected to significantly boost capital requirements. Estimates vary widely. The Basel Committee projects a median capital increase of 22% and a weighted average increase of 40%. A recent study conducted by the Global Financial Markets Association (GFMA), Institute for International Finance (IIF), and the International Swaps and Derivatives Association paints a much more ominous picture. The study of 21 large banks predicts that organizations using internal models would see capital requirements increase 1.5 times, and those using the new SA would see requirements jump 2.4 times.¹ The jumps are significant, especially when one considers that most banks will pursue a hybrid approach using the SA as well as internal models.

It is increasingly evident that portfolio optimization will be absolutely essential in this new regulatory paradigm to offset the bottom-line impact of more prescriptive capital requirements.

Immediate Action Required

Getting ready for FRTB is a big job, and there is little time to spare. For example, FRTB's extended data demands require unprecedented alignment between front-office and risk functions, especially for internal model approval. The industry has increasingly understood the growing need for this alignment in the years since the financial crisis, but progress in individual institutions has varied widely. Firms can no longer drag their feet as risk and finance alignment is essential to FRTB compliance.

A year after FRTB was finalized, however, uncertainty remains. Banks await important compliance details, including those related to internal model approval. In addition, individual nations have yet to finalize their specific flavor of FRTB. Therefore, as banks begin their planning process, they will need to consider strategies and solutions that are flexible, scalable, and complete to accommodate to a wide range of immediate and future needs.

A Challenge with Deep Roots

The market risk management challenges facing firms have deep roots. First, model accuracy often falls short. Calibration issues are a major factor. In addition, in many financial institutions data remains siloed across various point solutions for capital, trading book, and balance sheet data, preventing the enterprise visibility required to meet evolving market risk requirements and drive improved performance.

Under FRTB, the SA and internal model approaches both present formidable challenges, starting with determining which assets should be assigned to the trading book versus the banking book and tracking their respective lineages.

¹ Sherif, Nazneen. "FRTB Packs Bigger-than-Expected Capital Punch," Risk.net, April 13, 2016.

In addition, gaining proprietary model approval will require individual trading desks to pass rigorous P&L attribution and back-testing tests. The SA presents its own set of challenges. It is quite prescribed and represents a fundamental departure from the ways that banks have traditionally calculated risk and managed indices—which will now have to be broken down into individual components that can number in the hundreds or thousands. As a result, FRTB will require banks to introduce multiple new metrics and calculations—injecting new complexity and costs into already strained systems.

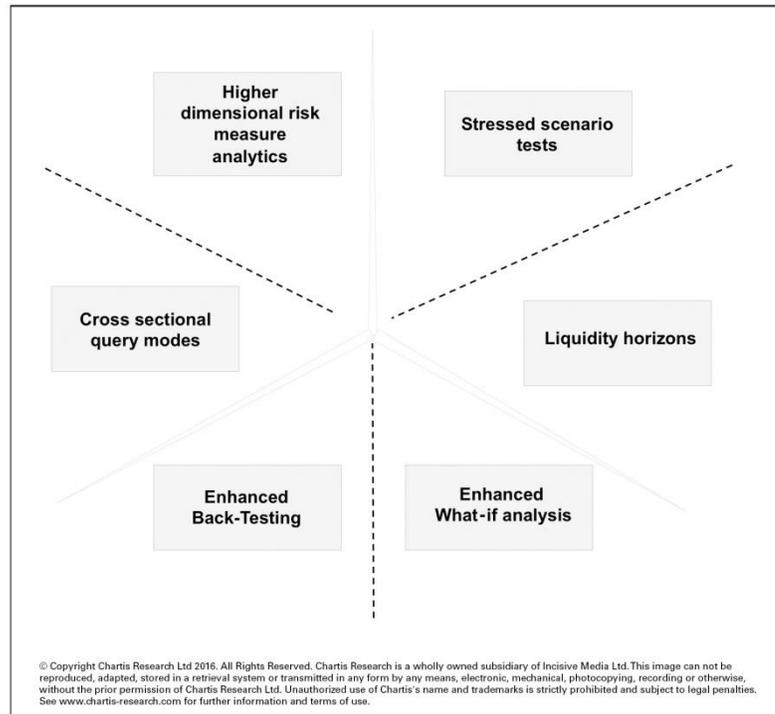


Figure 1 – Drivers for data volume are numerous and multi-dimensional.

Chartis Research's Forming FRTB Action Plans: Tactical vs. Transformational report clearly presents the expansive new data requirements that firms will face under FRTB. This list includes:

- ➔ Implementing P&L attribution as a desk-level performance metric
- ➔ Managing the increased volume of model outputs arising from both the internal model and revised standardized calculations (See Figure 1)
- ➔ Tracking and managing trading desk-level model approval and testing
- ➔ Sourcing data for “non-modelable” risk factors
- ➔ Calibrating correlations in the incremental default risk charge to price data
- ➔ Handling the massive increase in computation needed to run Expected Shortfall calculations with variable liquidity horizons
- ➔ Back-testing expected shortfall

Prepare for the Journey

Financial organizations are assessing their IT infrastructures to determine how they will fare in the face of FRTB's looming requirements and challenges. This analysis must include a focus on:

- » Core calculation capabilities – Do current systems and infrastructures have the capacity and scale to support the increased computational requirements needed to support extensive expected shortfall calculations with multiple liquidity horizons and intra-day monitoring? Cloud increasingly factors into these considerations as incremental scale and computing power can be secured on demand.
- » Data availability – FRTB will require firms to take a careful and thorough look at their data architectures. In the new world, it moves from a sideshow to front and center in the development and execution of risk methodology and strategy. A single source of data becomes imperative.
- » Data and model governance – Firms will likely have to implement and manage both SA models as well as internal models with a higher degree of scrutiny. Model development and management is a very iterative and continuous process requiring robust what-if modeling capabilities, validation and testing stages, updates, and approval—only to begin the process again. Automation of both data and model management becomes a priority as firms seek to achieve required process standardization and traceability as well as reduce the cost and resource burden of these new requirements.
- » Reporting – Under FRTB, firms experience greater need to manage and execute regulatory and risk reporting in a single integrated environment. It must automate end-to-end processes from data capture through submission, and include powerful governance capabilities that enable firms to elevate data integrity to new levels while streamlining and reducing the resource burden of compliance. This approach frees analysts to spend more time on gaining new insight from growing stores of data instead of simply preparing data and reports with the sole objective of meeting deadlines.

Under FRTB, managing market risk, and the capital requirements associated with the new rules, will be a continuously evolving process that necessitates new levels of precision and insight. Key requirements for the IT architecture needed to support this new paradigm include:

- » Pre-built applications that supports complex calculations across market risk , counterparty credit risk, and incremental default risk
- » Advanced valuation models across asset classes—equities, interest rates, commodities, currencies, and exotics
- » A single data foundation that enables consistent usage of data across all calculations
- » Powerful analytics that deliver real-time, actionable information directly to business managers
- » A single environment for creating and managing models to meet requirements for both SA and proprietary models
- » Unified data governance environment that facilitates compliance with continually changing regulatory requirements

As important, modern financial institutions increasingly seek risk management infrastructures that—in addition to enabling them to more accurately calculate market risk and associated capital requirements—actually empower them to manage these areas more effectively. Capabilities such as portfolio optimization and intra-day liquidity management are the new frontier. These solutions not only facilitate compliance but can give firms a competitive edge in managing risk and performance by providing real-time actionable information to front-line managers and traders that enable them to make optimal decisions about managing the trading and banking book.



Conclusion

As the 2019 FRTB deadline looms over financial institutions, firms must prepare today to create a foundational system for the future that gives them the visibility and flexibility required to comply with the FRTB standards. By seeking an architecture that encompasses a unified data foundation, expanded data modeling and governance capabilities, next-generation model validation and governance, advanced predictive analytics, and extensive automated reporting capabilities, financial institutions will be well positioned for the new world ahead.



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