How to approach FRTB implementation and risk data aggregation

Fresh insights and best practices from the 2018 Chartis Research survey report of global banks
Introduction

A new report offers insights and analysis from the results of a 2017 survey of the approaches that banks around the world are taking to enact FRTB-driven projects. In collaboration with IBM® Watson™ Financial Services, Chartis Research surveyed representatives from 30 leading global banks in order to determine how financial institutions (FIs) approach implementation of the required changes to the Fundamental Review of the Trading Book (FRTB). This quantitative survey—conducted between June 8 and August 6, 2017 and published in February 2018 by Chartis Research—asked about the bankers’ progress in meeting FRTB aggregation and reporting requirements, what they considered to be the most significant barriers to implementation, and their strategies and approaches to overcoming these challenges.

This ebook presents some of the key insights from this collaborative report, showing how banks—large and small, and throughout all regions—are currently addressing the challenges (and realizing the opportunities) of FRTB implementation.

In January 2016, the Basel Committee on Banking Supervision published its Standards for Minimum Capital Requirements for Market Risk; also known as the Fundamental Review of the Trading Book (FRTB). These new standards replace parts of the Basel 2.5 reforms, which were introduced in 2009 to address the material undercapitalization of trading book exposures during the 2007-08 financial crisis.

In late 2017, the Group of Central Bank Governors and Heads of Supervision endorsed the Basel Committee extension of the implementation date for the revised minimum capital requirements for market risk to January 1, 2022 (from the original date of 2019).

One of the key findings of the report is that many banks have already formalized their FRTB reporting requirements, even as the definitions and timescales of the FRTB regulation have shifted. For example, approximately one-third of survey respondents report that their banks are already implementing new systems and approaches.
Introduction

Certainly, the report revealed variance in the urgency with which banks are implementing new solutions for FRTB reporting. But in general, the four main barriers to banks’ implementation of effective solutions for FRTB aggregation and reporting are:

- Technology and infrastructure constraints
- Lack of clarity on requirements
- Lack of available data
- Lack of budget

There’s a distinct correlation between the size of a bank and the urgency for early implementation of an FRTB reporting infrastructure. For example, of the 30 percent of respondents who report that their bank is currently implementing FRTB reporting, almost all are working for banks with over USD 100 billion in assets. One of the most important findings of the report: while the FRTB regulation requires banks to be capable of processing dramatic increases in the volume and velocity of data, the current IT infrastructure in most banks is not prepared to handle it.

Bankers are keen to understand the impacts of FRTB so that they can make more informed decisions about implementation. Compliance deadlines loom in a number of regions—even in regions in which regulatory dates are not yet set. Bankers whose organizational efforts are still in progress (or yet to start) can derive lessons from their peers, following best practices that can help them implement FRTB projects at a faster pace.

Use this ebook to discover how to best manage implementation challenges and how to reduce lead times as you proceed with your FRTB efforts.
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1. Key impacts of FRTB implementation on banks

FRTB requirements push banks to meet new standards for data aggregation and reporting. But the most recent assessments (March 2017) by bank supervisors found that, in general, global banks’ level of compliance with FRTB regulation remains unsatisfactory.2

Best practice: Enhance RDAR capabilities

Chartis Research found that among the key impacts of FRTB implementation on banks are its operational, methodological and technological challenges—all of which can have significant implications for a bank’s IT infrastructure (Figure 1). Regardless of whether banks choose modeling methodologies that rely exclusively on standardized approaches, or whether they pursue approval for internal-model-based approaches and remodel their analytics, one thing is clear: they inevitably will require significantly enhanced Risk Data Aggregation and Reporting (RDAR) capabilities.

Risk measures

<table>
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<th>XVA</th>
<th>Expected shortfall</th>
<th>Greeks</th>
<th>P&amp;L</th>
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Common data and validation process

Model validation, P&L back testing, new risk measures (Expected Shortfall)

<table>
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<tr>
<th>Internal model approval</th>
<th>Standardized approach</th>
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<tr>
<td>Non-modelable riskfactors</td>
<td>Granular bucketing</td>
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<tr>
<td>Default risk charge</td>
<td>Lower diversification</td>
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<td>P&amp;L bucketing</td>
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<td>Liquidity horizons</td>
<td>Residual risk charge</td>
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<tr>
<td>Stress calibration</td>
<td>Default risk</td>
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<tr>
<td>Default-level eligibility</td>
<td>New sensitivity-based calculations and sensitive collection management</td>
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Punitive non-modelable risk factor treatment
Equity names in scope
P&L attribution and back-testing
Liquidity horizons ranging from 10 to 120 days (scaled from base 10-day horizon)
Stress calibration with reduced set of risk factors, resulting in greater computational loads
Defined tests with standardized method for failed desk

Figure 1: The broad impact of FRTB on banks.
Source: © Chartis Research
How to approach FRTB implementation and risk data aggregation

1. Key impacts of FRTB implementation on banks

FRTB will be a catalyst for new technologies for rigorous risk analytics and reporting. As well as adopting solid RDAR governance and technology, bankers must develop highly scalable and flexible FRTB reporting to cope with the increased complexity and volume of results.

Efficient FRTB reporting enables users to demonstrate transparency to regulators; you can help regulators to drill into regulatory reporting measures and can more easily expose the underlying data and intermediary analytics. This will be key to convince regulators of the consistency and accuracy of the desk-level analysis that’s used by the front and middle office. In the words of the FRTB program manager at one Italian bank: “This is one of our key success factors; this function is very visible to our senior management.”

Fresh insight: FRTB is driving business transformation

One interesting finding of the Chartis report relates to the impact of changing FRTB deadlines on banks’ restructuring of FRTB implementation programs. FRTB is a trigger for banks to review their infrastructure and to adopt new technologies in an efficient manner.

When FRTB proposals were introduced, the forecasts led many banks to assemble teams that were dedicated to FRTB-specific development. However, over the last 18 months, delays in FRTB deadlines throughout regions (and ongoing uncertainty about FRTB requirements) have led many banks to reassess their strategies. Bankers began to investigate how they might distribute FRTB-dedicated resources to also address other high-priority projects.

In general, findings reveal that for the banks that made early advances with FRTB deliverables and prototypes, these redistribution efforts proved useful. These banks have gained a better understanding of how their FRTB requirements might drive demands for new data-handling infrastructure. Teams explore how they might employ additional computational power to model pricing and risk analytics.

Several bankers reported that they’d altered their FRTB implementation strategy. They realized that extending various aspects of their existing IT infrastructure would be impractical; they had to decide which components would need to be replaced with new technologies.
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2. Barriers to banks achieving data-driven FRTB insight

In general, banks face four main barriers when they seek to implement effective solutions for data aggregation and FRTB reporting (Figure 2):

- 56 percent cited technology and infrastructure constraints
- 53 percent cited a lack of clarity of FRTB requirements
- 50 percent cited a lack of available data
- 25 percent cited budgetary constraints

Figure 2: Survey responses to which issues are significant barriers to an institution’s ability to successfully implement FRTB aggregation and reporting solutions, by total assets in USD billions.

Source: © Chartis Research
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2. Barriers to banks achieving data-driven FRTB insight

The challenges of technology change
Technological challenges rank as the most significant barrier to FRTB implementation, survey respondents reported. In general, banks with more-mature FRTB programs—such as large banks in Europe, the Middle East and Africa (EMEA), and the Americas—report that they have a clear idea of the scope of the technology and of the infrastructure constraints they will face. Many respondents reported being generally positive about the investments they have made to date; they’re confident that they can use insights to inform upcoming technology implementations in the organization, especially in risk management.

Lack of clarity on FRTB regulations
More than half of the survey respondents reported that one of the major barriers to effective FRTB implementation is the lack of clarity they find with regard to FRTB regulations. This being said, it is important to note that most respondents felt nonetheless confident that FRTB requirements will become clearer as implementation deadlines approach. As a result, over the long term, respondents feel that this current lack of clarity will not be a significant threat to their FRTB projects.

Lack of available data
For some asset classes, desks and jurisdictions, a lack of available observable market data is a real barrier to FRTB implementations. In Asia-Pacific, 67 percent of respondents identified a lack of data as a serious constraint for non-modelable risk factors, due to the illiquidity of some instruments and—in some jurisdictions—on some desks.

Lack of budget
More than a quarter of respondents raised budget challenges. Representatives explained that where infrastructure overhaul plans had been put in place, their bank had yet to formally confirm that the required funding and resources would be allocated.
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3. Banks’ plans to redesign infrastructure for FRTB

How bankers approach infrastructure redesign
The survey results indicated that a bank’s approach to redesigning its infrastructure for new FRTB-required analytics was a function of:

- The proportion of existing systems that would be reused
- The sophistication of available financial risk-reporting solutions to meet front-office requirements

Best practice: Determine which systems are worth reusing in the FRTB ecosystem
Banks selected the approaches included in plans to implement FRTB risk aggregation (Figure 3). Only 16 percent of banks reported that their plans would address aggregation using an existing risk system, and 23 percent planned to include aggregation in an existing front-office system. Forty percent will integrate new commercial aggregation solutions. One-third of respondents planned to build new aggregation solutions on a big data lake.

Figure 3: Responses to how an institution plans to implement FRTB risk aggregation. Source: © Chartis Research
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3. Banks’ plans to redesign infrastructure for FRTB

The most common business drivers for pursuing new technologies and approach are the potential to lower infrastructure maintenance costs and to increase the availability and reliability of risk data. Many respondents said that current systems were too siloed by asset class—or were too fragmented throughout and within different countries. It’s widely believed that the latest technologies that support big data lakes (and related commercial software) will deliver the most efficient aggregation, irrespective of asset class or region.

To meet FRTB reporting requirements, 61 percent of respondents expected to extend a portion of their existing risk-calculation infrastructure. Fifty percent said they were developing their own custom-built internal reporting solutions, and forty percent planned to include commercially available off-the-shelf software (Figure 4).

![Figure 4: Survey responses to what approach institutions are taking to implement FRTB reporting requirements. Source: © Chartis Research](image-url)
3. Banks’ plans to redesign infrastructure for FRTB

If bankers want to meet demands to deliver a breadth of FRTB requirements under constrained budgets and time, they will have to knit together existing infrastructure and new systems and technologies.

**Fresh insight: The needs of front-office desks could trigger systems upgrades**

New FRTB requirements will severely impact front-office operations and will determine the insights that front-office desks demand from the systems they use. Eighty-seven percent of respondents want to be able to analyze FRTB capital at the desk level on an intra-day basis (Figure 5). For many medium-sized banks, intraday capabilities represent a significant business and functional improvement over their current systems. An important trigger for upgrading systems (and adopting new ones) is the need for results that are based on more-timely and more-accurate data.

- Ability to view and analyze FRTB capital at the desk level on a regularly updated intra-day basis
- Ability to use the tool for P&L explain functionality to drill into any P&L attribution breaches
- Ability to run pre-deal check on impact on FRTB Capital
- Governance and review of P&L attribution and back-testing breaches
- Others

![Figure 5: Responses to which capabilities will be key to front office desks in interacting effectively with FRTB aggregation and reporting solutions.](© Chartis Research)
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One big driver for improving front office systems: more-sophisticated tools for examining P&L attribution. To test the reliability of risk models, FRTB requires the comparison of P&Ls from different systems. Sixty-one percent of respondents cited demand for new FRTB capabilities involving pre-deal checks. They want an FRTB aggregation and reporting solution to include pre-deal assessments of capital charges on potential trades. Back-testing requirements under FRTB put additional pressure on desk-level administration. Sixty-one percent of respondents wanted to identify the causes of outlier results in individual models, where outliers that skew P&L could be the result of data errors, modeling assumptions or extreme events.

Conclusion

It’s clear that FRTB implementation will impact process and technology throughout the entire bank. For example, the implementation of FRTB will increase the level of risk-management awareness in each financial institution, and will impact everything from modeling to reporting to data management and governance. It is also evident that, in order to meet this challenge, banks will have to install faster, more-flexible and more-efficient computational architectures. Leaders must find ways to align data between different departments using an enterprise data-management platform approach, governance and best-practice processes. If you accomplish these goals successfully, you can ensure full data lineage for accurate and timely regulatory reporting, and your bank can provide full transparency. Bankers will also have to address other system requirements—for example, plans to enhance their analytics infrastructure. Bankers should put their attention toward a focus on the validation, suitability and robustness of their models, and, where appropriate, upgrading or refreshing the models.

The implications of FRTB challenges for a bank’s technology strategy are profound, with:

“Several key structural impacts, including redefining their trading desk structures and hierarchies, implementing P&L attribution as a desk-level performance metric, sourcing data for Non-Modelable Risk Factors (NMRF), and tracking and managing model approval and testing at the level of the trading desk.”
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In general, the Chartis survey found no single, universal response to the requirement for FRTB aggregation and reporting. Instead, global banks seem to be adopting a variety of approaches (often hybrid approaches) depending upon their size, geography and supervisory jurisdiction, and depending upon the legacy systems they have in place already.

One of the most compelling conclusions lies in how banks can realize FRTB implementation as a valuable opportunity:

“There does seem to be a compelling need for many FIs to transform their market RDAR infrastructure, if not for compliance purposes, then as a potential source of value.”

IBM offers fully featured FRTB solutions designed to help bankers with the major challenges posed by FRTB.

For reporting and aggregation, IBM Algo Aggregation for FRTB Reporting is a flexible, highly scalable and pre-configured FRTB reporting and analysis solution. It is designed to be integrated with a bank’s existing infrastructure for both speed and lower costs of implementation. A quick setup time enables a bank to start early analysis and impact studies on real production data. This helps accelerate the overall FRTB implementation process by highlighting any infrastructure gaps which need to be addressed and providing a better understanding of the impact of FRTB on their business, profitability and capital.

For more information visit: ibm.biz/FinancialRisk

For more details and insights into the impact of FRTB on global banking, download the full Chartis Research report FRTB: Delivering on the promise of data-driven insights (developed in collaboration with IBM) at: ibm.biz/ChartisFRTB
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For more information
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Footnotes

1. All charts and data published in this ebook are, unless otherwise noted, the property of Chartis Research and are reproduced by permission.
