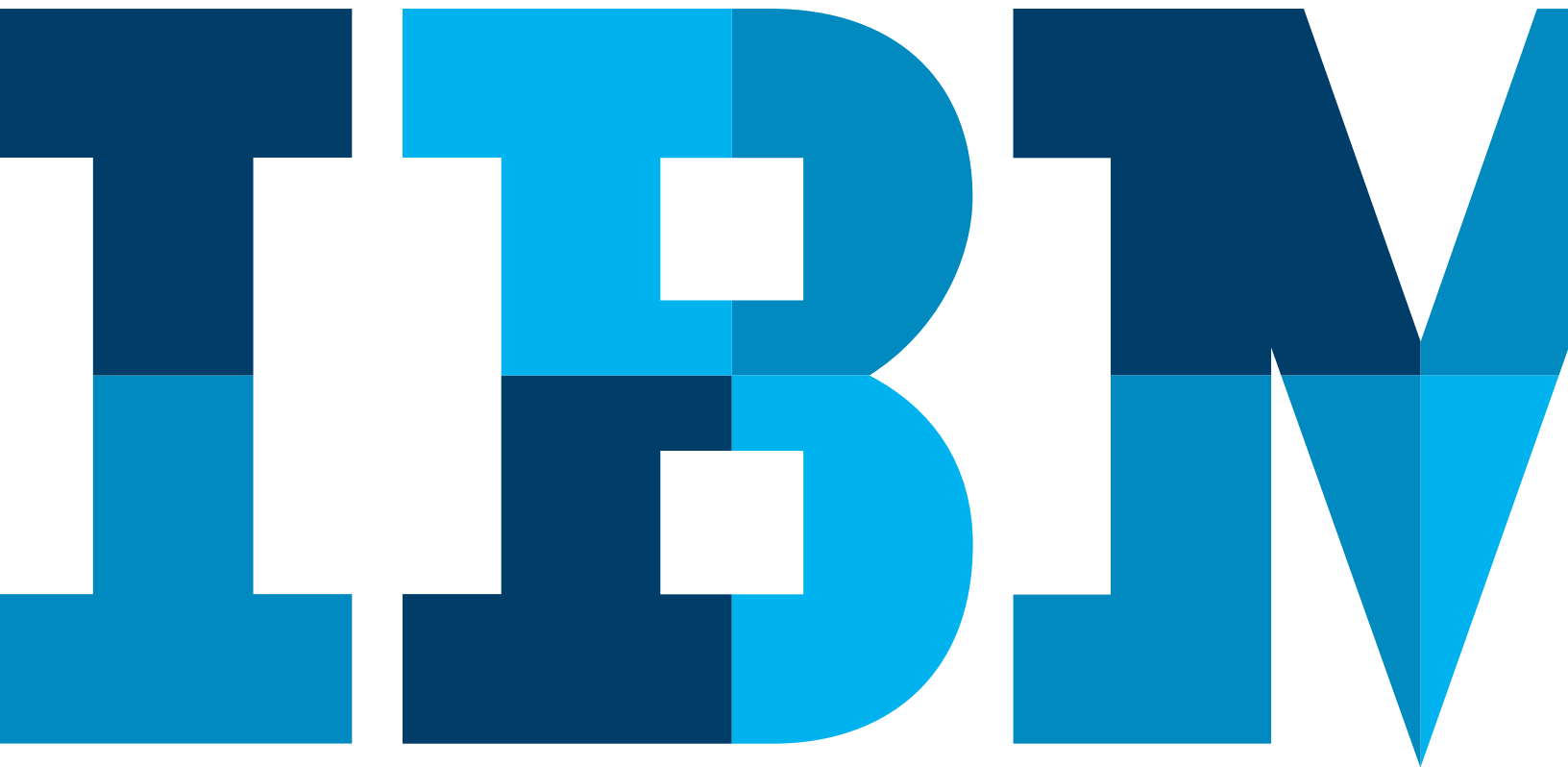


Speaking as one—Convergence in Basel standards will require banks to rethink their risk infrastructures



Contents

- 3 Constructing universal approaches
- 4 Number of hours required to learn a second language
- 5 Building upon layers
- 5 Building from the ground up
- 6 Complicating principles
- 7 Learning to fly
- 7 About IBM Analytics

From an operational perspective, banks could benefit from a universal financial model where all data took the same form. The compliance process would simplify, as regulators would be able to compare operations within and between firms, and banks could quickly get a clear picture of their entire business.

However, in the real world, banks employ a range of financial models to accommodate different approaches and insights. Data, by its nature, comes in many forms. During the financial crisis, the diversity of financial models made it difficult to quickly disseminate information. Confidence was lost in firms that could not clearly communicate their own stability, and regulators were unable to distinguish solvent firms from insolvent firms.

The crisis revealed that the framework to capitalize trade activities produced insufficient levels of capital to absorb losses. The Basel Committee response began with Basel 2.5, a quickly assembled package of reforms to the market risk framework. Even at the time, the Committee recognized that the reforms did not fully address the framework's shortcomings. The process of undertaking a fundamental overhaul of the framework began in May 2012, when the Committee published the *Fundamental Review of the Trading Book* (FRTB). The Committee has since refined their proposals through rounds of comments and testing, seeking a framework that could be implemented consistently by supervisors across jurisdictions. The attempt to minimize inconsistencies between firms and regions is reflected by the emphasis on the new standardized approach to calculate capital requirements.

The FRTB proposals require the revised standardized approach be mandatory, which can present significant operational challenges to banks. Larger banks struggle with assigning resources to support revisions to both the standardized and internal model approaches, while many small and medium-sized banks scramble to adapt their systems to calculate the revised, standardized approach. Smaller banks are likely to accept the higher capital charges that come with the standardized approach, given the additional sophistication required to acquire internal model approval.

Banks of all sizes will benefit from adopting approaches that address FRTB requirements in a more holistic way. Larger banks need an enterprise system capable of efficiently supporting the revised standardized and internal model approaches in parallel, along with enhancements to their risk governance and reporting. Small and medium-sized banks need a solution that can support the standardized approach today, and which has the capacity to help them work towards gaining internal model approvals that will reduce their regulatory capital requirements.

The complete set of FRTB proposals represent an ambitious desire from regulators to get it correct and go beyond revisions to the standardized and the models-based approaches. When the impacts of the various FRTB proposals are analyzed together, it could present scenarios that would place an overwhelming burden on the current infrastructures of many banks. For example, proposed new requirements to incorporate varying liquidity horizons in the Expected Shortfall (ES) calculation, when combined with the requirement to minimize correlation benefits between asset classes, could potentially require a staggering 63 ES simulations per trading desk; and the FRTB also proposes that banks conduct additional desk-level model assessments to attain and maintain internal models approval.

Meeting the demands from the *Fundamental Review of the Trading Book* requires redesigning risk systems at a fundamental level. Rethinking their risk infrastructure can help banks address forthcoming requirements from Basel's BCBS 239 Principles for effective risk data aggregation and risk reporting (RDA).

Many of the Basel RDA principles would be violated if firms responded to the FRTB requirements by attempting to integrate new solutions without significant reforms to their existing web of data and analytics. In the pursuit of improving operational efficiency, focusing on revising operations for risk modeling is a good place for banks to start.

Constructing universal approaches

In the published FRTB consultative document, the Basel Committee notes, "*the current regulatory capital framework for the trading book had become too reliant on banks' internal models that reflect a private view of risk*". Other problems were attributed to a disconnect between internal models-based and standardized approaches, where further divergence in risk sensitivity could exacerbate the disparity and relative burden of the regulatory capital requirements placed on large banks versus smaller banks.

The revised standardized approach under the FRTB is an attempt by the Committee to correct past oversights, and converge toward a more consistent view of risk across banks of all sizes. To achieve this goal, the Committee has worked to establish links between how the revised standardized and internal model approaches are calibrated. The notion to mandate a standardized calculation that is universal across banks of all sizes is in some ways similar to asking the banking industry to adopt a new, standardized language.

Consider *Esperanto*, a constructed language created in the late 19th century by Ludovic Zamenhof, a Polish physician. Zamenhof's goal was to foster peace and understanding between people who speak different languages by creating an easy-to-learn and politically neutral language. Early on, Esperanto enjoyed enthusiastic support from the scientific and business communities, but it failed to achieve widespread worldwide adoption over other native languages, likely because "A proposed standard, no matter how simple, logical, and well designed, may have difficulty displacing an imperfect but functional "real life" system."¹ Esperanto is however the most widely spoken constructed language in the world, with hundreds of thousands of active speakers. We can attribute this success to the fact that as a constructed standard, Esperanto is far easier to learn than any other native language. One study which examined the process of adopting foreign languages showed that French-speaking high school students achieved proficiency in speaking Esperanto ten times faster than English.

Number of hours required to learn a second language:²

- 150 Hours studying Esperanto
- 1000 hours studying Italian
- 1500 hours studying English
- 2000 hours studying German

Given the demands for greater transparency, regulators are following in the spirit of Zamenhof's footsteps by requiring that banks adopt a new, standardized language for communicating their risk exposures to the external world. Regulators face the considerable challenge of designing a standardized approach that strikes a balance between being simple enough that it can be efficiently adopted into the IT infrastructure of banks, but nuanced and risk sensitive enough to effectively articulate regulatory capital requirements.

However, the unfortunate reality for banks is that their IT infrastructures are far less malleable than the human brain when it comes to acquiring new skills. While it may be tempting for banks to consider acquiring new 'skills' by building on top of their existing risk infrastructure, it is likely that the current infrastructure was not designed to handle the multifaceted requirements introduced by the FRTB. Taking such a 'bolt-on' approach to infrastructure enhancements could dangerously raise the operational complexity of the banks' overall IT system. Increasing operational complexity could work against the principles of Basel RDA that aims for banks to redesign their existing infrastructure toward achieving more trustworthy and consistent results.

Building upon layers

To make sound strategic decisions, banks depend on the results of their risk models, and the data that feeds these models. Larger banks who have built their internal operations around their native language of internal models are likely to continue with this approach well after they have implemented system redesigns to execute the standardized approach. Smaller banks who have yet to adopt internal models need to determine if they have a business case for working towards Internal Model Approach (IMA) approval, or if their long-term plan is to stick with the standardized approach alone. In both cases, banks seek to invest in technology that will help them to most efficiently reform their risk systems and yield a tangible return on investment.

Large banks have long faced the challenge of complying with multiple demands from within their business and from outside regulatory standards that require integrating multiple systems across many regions. Legacy systems, systems adopted through acquisition and solutions layered upon existing platforms, are common features across the financial industry. These patchwork systems can be inefficient, costly to maintain, and duplicate tasks and responsibilities—all examples of the sort of fragile systems criticized by Basel RDA.

The inefficiencies of these systems come at a substantial cost. An industry report submitted to the SEC (Security and Exchange Commission) estimated that each large US bank spends between \$250 million and \$1.25 billion per year to process faulty, duplicated, or non-standardized data.³ This is a subset of the \$215 billion banks were expected to spend as their total IT cost in 2014.⁴

A smarter enterprise risk management system that can efficiently support internal models, the standardized approach, and can reliably deliver consistent data to these models through appropriate governance of risk models and risk data, will help banks to improve overall efficiency in the long term and realize tangible gains in the short term.

Building from the ground up

Given the level of risk modeling sophistication required to gain internal model approval from regulators, most small and medium-sized banks may feel they have no choice but to accept the prescribed standardized approach, and the higher capital requirements—relative to the internal models approach—that come with it. Since a healthy market aims to establish incentives that could benefit all players, some organizations have urged the Basel Committee to ensure that smaller banks are protected from overly excessive burdens tied to mandatory calculation of the standardized approach under the FRTB. The German Banking Industry Committee's comments in response to the FRTB consultative draft represented these concerns:

As long as there is only one standardised approach, this approach should not de facto require establishing and maintaining an infrastructure (with all the associated major costs that this incurs) which otherwise would only be necessary for a model approval (e.g. regarding pricing tools, market data supply, estimation of loss distributions, etc.) should therefore absolutely be avoided. We therefore very much welcome the fact that the Basel Committee has signalled that the limited capabilities of smaller banks will explicitly be taken into account.⁵

Despite such “signals” from the Basel Committee, for smaller banks that compute capital calculations based solely on a standardized approach, the potential for unintended consequences exists if the proposed changes are maintained. In “A Fundamental Review of the Trading Book,” Paw B.B. Christensen and Jonas Munch Hansen analyze the evolution of the standardized approach. They note that through the consultative process on the FRTB, the Sensitivity Based Approach (SBA) has been gaining support as an alternative to the Cash Flow Approach for calculating General Interest Rate Risk and Credit Spread Risk. SBA could pose a problem for small banks:

While large banks already calculate these sensitivities for risk management purposes, small banks do not necessarily do this. It therefore will make the approach difficult to implement for small banks even though it is developed specifically for these banks. It is also in contrast with the principle of the SA (standardized approach), which is meant to not require inputs from banks’ internal models. Since these sensitivities are to be estimated by the banks’ own models, the line between the SA and internal models will become blurred.⁶

Even if such a change is not pursued under the FRTB, this scenario adds to the business case for smaller banks to invest now in a risk analytics infrastructure that is sophisticated enough to fully address the new requirements of the FRTB and the principles of Basel RDA. Firms can protect themselves from an uncertain future by rebuilding a foundation that can easily support the standardized approach and is also capable of

helping banks qualify for internal model approval. Rebuilding a modern infrastructure from the ground up can enable smaller banks to match the capabilities and accompanying advantages of larger banks at a fraction of the cost, with the added benefit of being able to bypass the disparate and ad hoc systems that many larger banks are currently maintaining.

Complicating principles

A system that quickly aggregates data across the organization, with support for standardized and internal model-based approaches, will help prevent firms of all sizes from falling further behind evolving standards for risk data management and reporting, and many G-SIBs (global systemically important banks) already have considerable catching up to do before the Basel RDA compliance deadline of January 1, 2016.

An interim paper reported on Basel RDA self-assessment ratings provided by 30 G-SIBs (global systemically important banks) revealed that when banks were asked to rate their compliance status from 4 (best) to 1 (worst), the average rating provided for all principles ranged from 2.5 to 3.2, indicating compliance status between largely compliant and materially non-compliant. The principles with the lowest reported compliance ratings dealt with data architecture/IT infrastructure, adaptability, and accuracy/integrity. The report noted that “many banks are facing difficulties in establishing strong data aggregation governance, architecture and processes, which are the initial stages of implementation. Instead they resort to extensive manual workarounds which are likely to impair risk data aggregation and reporting.”⁷

Learning to fly

Banks preparing a solution to meet the demands of Basel's FRTB will be subject to the operational burdens of additional reporting, the financial burdens of increased capital requirements, and in some cases, both. Mark Zelmer, Deputy Superintendent of Canada's Office of the Superintendent of Financial Institutions, reminded banks that for all its potential benefits, the standardized approach is just one arbitrary model, and not a substitute for insights that can be generated through their own approaches:

While (the standardized approach) may result in capital ratios that are computed on the basis of the same formulae across banks, the resulting ratios would likely be less informative about the risks actually being carried by individual banks.

... (i)t is also important to bear in mind that when it comes to models, you can run but you cannot hide. There is no getting around the fact that discussions of bank capital requirements need to be grounded in the information provided by well-designed and properly used risk models. Simplifying the rule book will not change the game. It simply moves more of the conversation into the realm of private discussions between individual banks and their supervisors.⁸

Many larger banks know their risk system infrastructure is in need of an overhaul, and smaller banks are looking for ways to separate themselves from the rest of the pack. Banks of all sizes can benefit from maintaining their own internal model approaches, which provides them with a better understanding of their exposures as articulated through their own risk language. Adopting the standardized approach will enable firms to reliably share a more simplified external view of their exposures among supervisors, regulators, and other stakeholders.

With the intention of introducing consistency in reporting and disclosure, the mandatory standardized approach under the FRTB introduces a new language for banks to learn. The complexity of the SBA standardized approach, and the diverse changes to internal models combined with the RDA principals should be motivating banks towards undertaking a strategic rethink of their risk infrastructure. Now is the time for banks to make a bold move toward smarter analytics that will yield competitive advantages for years to come.

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