KPMG

FRTB

(fundamental review of the trading book)

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Business impacts and challenges around the implementation of FRTB

South African major Banks have started rather timidly their journey toward implementing FRTB, the most significant transformation of the trading market risk framework for the last 20 years. Are these banks fully aware of the main challenges ahead, and how can they use this complex regulation to redefine their business model and move ahead of their competitors?

Auguste Claude-Nguetsop, Head of Quantitative Risk Services at KPMG in SA

FRTB represents a significant and revolutionary change to the existing framework for calculating market risk capital. Following the 2007-08 financial market crisis which exposed the weaknesses of the Basel II and VaR-based framework, the Basel Committee introduced a set of incremental revisions to the Basel II market risk framework to address the most pressing deficiencies which were issued under the Basel II.5 directive.

At the same time, a fundamental review of the trading book was also initiated to tackle a number of structural flaws that were not addressed by those incremental revisions, with the main purpose being 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 initial paper was issued in 2013, followed by various iterations until issuance of the final version in January 2016. The new rules are set to come into force globally by December 2019, although some jurisdictions like the EU are already mentioning a three year phase-in period.

Banks are allowed to implement FRTB under the Standardised Approach (SA) or the Internal Model Approach (IMA).

FRTB - Internal Model Approach (IMA)

The results of various quantitative impact studies conducted by banks showed that FRTB IMA will represent an increase of 150% to the current Market Risk Capital charge, still less punitive that the whopping 240% increas for banks operating under the standardised approach.

The most visible changes brought by FRTB are the replacement of Value-at-Risk with Expected shortfall as the basic risk measure for internal model approach, the redefinition of the boundaries between trading books and banking books, and the creation of a new desk level and Profit and Loss attribution testing regime for internal model approval.

Furthermore, a bank under IMA must apply a separate capital add-on for risk factors that it has insufficient data to model, and that separate capital is represented under the label NMRF for Non Modellable Risk Factors. NMRF identification and their treatment is creating significant operational challenges to banks currently going through the design and implementation of the IMA. Finally, there is a consensus across industry groups that NMRF will account for 30 percent of total market risk capital under IMA.

FRTB - Standardised Model (SA)

The standardised approach or sensitivity-based rules stand on using sensitivity of the instruments to underlying risk factors such as Delta, Vega or Curvature to calculate the market risk capital. Those sensitivities are further bucketed based on metrics such as tenor or credit quality.

The bucketing prescribed by FRTB are not similar to the ones used currently by most banks in their current risk framework, hence banks will have to re-implement large area of their trading and risk platforms to meet FRTB SA requirements.

Although FRTB SA appears far less expensive and time consuming to implement compared to the IMA, there are still major challenges such as the treatment of sensitivities on indexes, where the rule require to break down the index into individual components and calculate the sensitivity on those.

Overall, the SA rules will save banks considerable time and efforts, but will come at a heavy cost on capital charges. The challenge for most banks at this early stage is to decide whether or not they should even consider the IMA rules, and under which business strategy and for which desks.

FRTB Implementation Challenges

Data

It is not surprising the data is emerging as the source of many worries that banks are facing in their FRTB programme. Under the SA rules, the mapping and bucketing of data to the specified requirements, or the transformation of sensitivities calculated under the current regime to match FRTB rules is a daunting task, even for smaller banks. The sourcing of data for less liquid products and avoid them falling into the residual-risk add-on highly punitive capital charge is also driving significant efforts from banks.

For those implementing IMA, the data requirements to classify risks as NMRF as well the sourcing of relevant amount of historical data for the multiples liquidity horizons are the main challenges. Given the serious risk faced by desks under IMA to fail Backtesting or Profit and Loss attribution testing, banks have extra incentive to ensure data required to ensure success on those testing are readily available and accurate.

Analytics

For banks considering the SA model and looking to leverage its existing sensitivity-based VaR model, there is a complexity to consider given the difference between most banks sensitivity calculation and the prescribed FRTB formula.

In that respect, some banks might have to duplicate their analytics at a significant cost, with a set of calculation for FRTB and another set of sensitivities calculation for internal risk management, unless the results discrepancies between the two set of formulas are minor.

There are also banks considering the option to build complex transformation rules to convert their current sensitivities into FRTB compliant ones, with already major model validation questions potentially raised by the regulator for those following that approach.

Computational

The current market risk framework under Basel II.5/III requires calculation of VaR and Stressed VaR using a single methodology and liquidity horizon. The new framework under IMA, require multiple liquidity horizon per risk categories, which will basically increase by more than a ten factor the computational requirement to calculate internal model market risk capital.

The challenges are forcing banks to re-assess their trading and risk architecture, with techniques to accelerate processing time such as adjoint algorithmic differentiation (AAD), In-Memory aggregation, grids technology with graphic processing unit (GPUs) considered in isolation or in tandem to tackle the massive computational challenge of FRTB.

FRTB Business Impacts

CRO Level & Data Architecture

Basel II.5/III and BCBS239 regulations have increased the role of the CRO in areas related to data sourcing, governance, and aggregation for the purpose of risk management. FRTB increases that trend, with the CRO taking on additional responsibilities to ensure alignment between Risk and Finance.

In order to ensure alignment between Risk and Finance under FRTB, data sourcing, management and validation must be controlled from the Front Office, with policies for data ownership/custodian amended to fit that purpose.

A key interrogation and concern for many banks is the role and ownership of producing risk metrics and capital calculation. In the current framework for most banks, the CRO is in charge of defining the risk framework, operationalising and running the production of risk and capital calculation, hence they are ultimately the owner of data used for risk and capital calculation.

Given the changing role of the desk heads in the FRTB universe, there is a clear trend to transfer the responsibility of data for risk and capital under the ownership of the Front Office, with the CRO in charge of risk framework definition and implementation while sharing responsibility of daily production with Front Office.

Finally, the BCBS239 or risk data aggregation principles will require banks to opt for the option where data are owned by the Front Office in this instance, keeping data where it originated and not disseminating it across the organisation. Under the FRTB, this change will trigger a move to a decentralised risk model and data architecture, which will be at the opposite of the direction taken by banks designing and implementing centralised data architecture to comply with BCBS239.

Finance/Product Control

In the current framework, most Bank's finance function are responsible for Capital and Profit and Loss reporting, while the risk function looks after the risk and capital models definition and operationalisation. Given the FRTB requirements, the finance function is unlikely to have the skill based and the analytics to continue carrying out the final capital calculation and reporting. As a result, some banks might move their capital and profit and loss reporting function to the risk team. That change will trigger a tighter alignment between Risk and Finance, as the data sets, analytics and valuation models will have to be identical to ensure consistency of results.

Front Office/Desk Level

Under the FRTB regime, desk heads will be required to be more autonomous in the process of Profit and Loss Calculation and attribution, and not rely as usual on Finance and Product Control department. They also have an additional incentive to understand at a granular level trading risk capital charges for each position as well as the impacts of going SA or IMA for their trading strategy. As a result, the profit and loss attribution and testing will likely move to the Risk team, with some shared responsibilities with front office and desk heads.

The desk head will need to have total control of the data used in the Profit and Loss attribution, capital calculation and back testing. This trend will drive a re-alignment of responsibilities between Risk, Finance and Front Office.

Basis Risk Trading

FRTB is likely to increase significantly the cost of hedging for banks or corporate treasuries e.g. when a single stock is hedged with indexes, or when a four-and-half year swap is hedged with a five-year swap. Under the FRTB regime, the current accepted flexibility to hedge Sonia with Libor will come with an extra cost, as it punishes with extra capital anything that does not offset perfectly.

A direct consequence will be a crowding of the market, with all dealers focusing their liquidity position around commonly used benchmark to the detriment of less traded products of benchmarks. That will naturally increase the cost paid by clients to obtain perfect hedges or support an increase in basis risk charges.

How KPMG can help:

Our Financial Risk Management Practice in Southern Africa has more than 120 professionals with experience as Risk Managers, Quantitative Analysts, Risk Architect and Programme Managers.

KPMG has a team of Risk Business Analysts with a detailed understanding and experience of Risk, Finance, P/L Attribution and Product Control who can assist with the FRTB prototyping and testing activities.

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KPMG has designed FRTB workshops for clients in EMEA, APAC and North America, with the most relevant experts covering areas of FRTB for Risk Managers, Front Office Traders, Treasurers and C-Levels executives.

Finally, KPMG has developed a FRTB delivery framework covering data sourcing/ mapping activities to model validation, supported by a full approach to define a multiyear implementation roadmap of the FRTB programme.

Conclusion

The challenges for banks in the years ahead will be to reconcile conflicting priorities between BCBS239/Risk Data Aggregation principles and FRTB, the empowerment of Front Office desk heads without losing sight of the need to keep a central role for the Finance department in producing and reporting daily profit and loss analysis, the overlap between the CRO and the COO attribution around ownership of analytics and infrastructure used to operationalise FRTB and finally the decision to opt for a centralised or decentralised FRTB-driven risk architecture platform without compromising the requirements for other regulatory initiatives.

Contacts

Gavin De Lange
Director, FRM
T: +27 83 287 2218
E: gavin.delange@kpmg.co.za

Alison Beck
Director, FRM
T: alison.beck@kpmg.co.za
E: +27 82 492 2709

Auguste Claude-Nguetsop
Associate Director, FRM
T: +27 82 719 2842
E: auguste.claude-nguetsop@kpmg.co.za

Jana Mentz
Manager, FRM
T: +27 60 997 6335
E: jana.mentz@kpmg.co.za