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Financial Services Risk and Regulation

Hot topic

What does the revised FRTB framework mean for firms?

Highlights

The Basel Committee on Banking Supervision (BCBS) published its finalised minimum capital requirements for market risk on 14 January. The framework known as the Fundamental Review of the Trading Book (FRTB) replaces the earlier version published in January 2016.

The framework which is expected to come into effect on 1 January 2022 introduces a number of revisions including clarifications on the scope of exposures, model eligibility criteria, aggregation for non-modellable risk factors NMRF, a simplified standardised approach (SSA) and revised standardised approach (SA) risk weights.

As part of its post-crisis reforms, the BCBS released the FRTB rules in January 2016 as the Minimum Capital Requirements for Market Risk for banks with trading books. Aiming to address a number of identified shortcomings in the existing Basel II.5 framework, the initial FRTB framework introduced more onerous processes for firms in scope. Although the framework was initially scheduled to be implemented by 1 January 2019, the BCBS decided to delay its implementation until 2022 to enhance its design and calibration in line with the results of its Quantitative Impact Studies (QIS) and to ensure consistency in implementation across regions to prevent capital arbitrage.

Following a consultation in March 2018, the BCBS published the revised FRTB framework on 14 January 2019, with revisions to multiple sections such as NMRF requirements under Internal Models Approach (IMA), the P&L attribution test (PLA), revised SA risk weights, a simplified SA and capital aggregation at bank level, among others changes. For instance, the final framework changes PLA test from the parametric tests proposed in January 2016 to non-parametric tests. While most of the changes were proposed in the March 2018 consultation document, the changes in NMRF are completely new and in line with the advocacy by banks participating in the QIS process. The most significant change on the NMRF concerns revised requirements for identifying risk factors that are eligible for internal modelling.

The final framework will come into effect on 1 January 2022. Its global implementation will depend on how quickly regulators transpose it into their respective domestic regulations.

While the changes introduced to the January 2016 framework are set to have important implications for firms' risk modelling, data processing and IT frameworks, they generally make it easier for banks to implement the IMA. In addition to these operational and infrastructure-related implications, the final framework will also have an impact on their broader capital planning strategies by leading to a reduction in the market risk capital requirements compared to the January 2016 framework.

In this Hot Topic we summarise the key revisions to the FRTB, discuss the potential impact for firms and steps they should be taking.

General requirements

The final FRTB framework further clarifies the scope of exposures that are subject to market risk capital requirements for firms with a trading book and market risk exposure. For instance, it now allows funds where daily prices are available and the bank has access to the funds mandate to be classified as trading book exposures.

While firms will have limited ability to move illiquid positions between banking and trading books, which may potentially lead to increased operational costs, they will now be able to book certain positions with respect to mutual funds and fund of funds in their trading books. But Global firms will need to take into account any potential divergence in national implementation of presumptive lists of trading book-eligible assets.

The final framework also allows banks to cap the aggregated bank capital requirements at an all SA charge to prevent penalising banks for the loss in diversification benefit between IMA and SA portfolio due to aggregating them at bank level using simple sum approach.

Standardised Approach

The final FRTB framework revised the SA to address issues that the BCBS identified in the course of monitoring the implementation and impact of the framework. The revised SA has been calibrated to serve as a credible fall back to the internal models approach in case the desk fails the model eligibility criteria. Reporting SA based capital would be mandatory irrespective of the model approval status for all levels of the bank. This means that all firms should be ready to implement the SA model even if these have an approved internal model.

As summarised in Table 1, revisions to the January 2016 framework include a number of important features. For instance, it has revised risk weights for interest rate risk, foreign exchange (FX) risk and selected credit spread risk (CSR) exposures. This calibration has implications for IMA firms as well, given the output from SA will now act as a floor to IMA.

The new rules also allow for banks to not decompose multi underlying provided they meet the conditions in the regulations and provide for two index buckets each for equity (EQ) and non-securitised CSR.

The Simplified standardised approach (SSA)

Recognising the potential challenges of the implementation of the revised SA for some banks that have relatively small or non-complex trading portfolios, revisions to the January 2016 framework retain the simplified alternative to the SA for those firms.

As summarised in Table 1, the use of this approach will be subject to supervisory approval and oversight based on a number of criteria. For instance, it will not be applicable to global systemically important banks (G-SIBs) or banks that hold correlation trading positions or use the IMA for any of their trading desks.

This means that implementation of FRTB by firms with smaller trading books will be less onerous. While the SSA may reduce operational complexity, it may also increase capital charges for smaller banks. Firms that meet the eligibility criteria should also take into account that the supervisors may still mandate them to apply the full standardised approach instead of the simplified alternative if they have material risks in particular risk classes.

Internal Models Approach (IMA)

IMA relies on the use of expected shortfall models and sets out separate capital requirements for risk factors that are deemed non-modellable. The most spoken about aspect of the approach is the new PLA test requirements for firms to be able to use the IMA.

As mentioned in Table 1, BCBS has given reprieve to banks by changing the frequency of the PLA test to quarterly and widening the amber zone to make the transition from IMA to SA smoother in case of a failure to pass model eligibility.

Non-Modellable Risk Factors (NMRFs)

As summarised in Table 1, the finalised text has widened the eligibility for modelisation of risk factors. For instance, the BCBS has formalised the qualitative criteria that it had introduced in the March 2018 consultation paper and introduced an alternate quantitative risk factor eligibility criteria, which will allow banks to model seasonal risk factors. Also, the aggregation now allows using a 60% correlation while aggregating risk factors instead of the earlier simple sum approach, which allows banks to recognise diversification in NMRF.

It has also introduced certain criteria for those firms which will use third party vendor data for risk factor eligibility, allowing banks to model more risk factors. Another positive revision is the introduction of a common window for all NMRFs within an asset class instead of the requirement to calculate different stressed window for different NMRFs. This will reduces the complexity around NMRF for banks.

Table 1

Component	Change from January 2016 version	Impact of Change	Implementation Complexity	Capital Impact
General Requirements				
Go live/ implementation	Go live for capital charge (Pillar 1) confirmed as 1 January 2022 PLA implementation to start from 1 January 2022 (Pillar 2) PLA to be used in calculation of capital requirements (Pillar 1) from 1 January 2023	Individual regulators will have to decide go live dates for their respective jurisdictions. There might be a period of regulatory divergence across jurisdictions.	↑	N/A
Trading Book-Banking Book boundary	Further clarification provided on product classification including treatment of repos based on their use Criteria for treating equity fund investments as trading book products expanded to include funds where bank obtains daily price quotes and has access to the funds mandate Clarification provided for underwriting commitment whereby the clause only relates to securities that are expected to be purchased on settlement date Hedge Funds are to be treated as banking book products	Further clarity provided allowing banks to classify instruments such as mutual funds and fund of funds as Trading Book instruments without the necessity of look through	↓	N/A
Trading desk requirements	A trading desk can have two head traders as long as roles and responsibilities are clearly demarcated A trader can be assigned to multiple desks as long as this does not circumvent any other requirements for the trading desk	Trading desk requirements give banks flexibility to allocate manpower more optimally	↓	N/A
Stressed period calibration	Stressed period can now be calibrated on a quarterly basis rather than a monthly basis	Stressed period calibration substantially reduces operational burden	↓	N/A
Bank aggregated capital	Bank capital capped at a full SA capital charge	Capital cap gives banks time to improve their infrastructure to be able to satisfy model eligibility requirements and use IMA	↓	↓
Standardised Approach				
Low correlation scenario	Low correlation formula modified to account for positions that are highly correlated so that basis risk correlation does not drop dramatically	This will prevent the high capital charges observed in interest rate and commodity risk where there are a large number of basis risk positions	N/A	↓↓
Commodity risk factors	Commodity grade removed as a risk factor for commodity vega	This allows for greater hedging benefits	↓	↓
Look through for multi underlying Options	The new rules allow for not looking through instruments referencing listed and widely recognised equity and credit indices	This allows banks to strategically choose to not decompose to avail capital benefits	↓	↓
Classification of undecomposed multi underlying	In cases where multi underlying are not decomposed two options are given: 1. If more than 75% of constituents can be mapped to a specific sector, the sensitivity can be mapped to that bucket 2. Two "index" buckets for EQ and CSR each for multi underlying that are allowed to be undecomposed but do not meet the criteria in (1)	This allows banks to not decompose and still avail hedging benefits	↑	↓
Risk weights	Risk weight for general interest rate risk (GIRR), FX risk and non-securitised CSR reduced as follows: GIRR (reduced by 30%), FX (reduced by 50%), CSR risk weight for Bucket 8 covered bonds reduced to 2.5% (1.5% for bonds rated AA- or higher) and CSR risk weight for Bucket 9 high-yield government bonds reduced to 2% from 3%	The reduction in equity risk weights that was proposed in March 2018 consultation has been removed	N/A	↓
Curvature bucket level aggregation	Bucket level capital aggregation has been amended to adopt Kb+/Kb- approach which allows to calculate based on consistent (upside/downside) shocks for each position	This will make hedging easier and cheaper for banks	N/A	↓↓
Curvature capital aggregation	Capital formula has been amended to get rid of alternate formula in case of negative under square root. This has instead been floored at zero	This addresses the cliff effects in capital calculation	N/A	↓↓
Simplified standardised approach	Basel 2.5 SA has been retained as a simpler alternative for banks that have small or non-complex trading portfolios.	While this may reduce operational complexity it may also increase capital charges for banks that have small or non-complex trading portfolios.	↓	↑↑

Table 1 – continued

Component	Change from January 2016 version	Impact of Change	Implementation Complexity	Capital Impact
Standardised Approach - *continued*				
FX Risk	1st order crosses of liquid FX pairs are deemed liquid	This will help banks who do not report in USD	N/A	↓↓
	Firms may use a currency other than their reporting currency to calculate FX risk if they manage their trading business in the same currency	This will help banks that have substantial business in a region but are reporting in another region.	↓	–
	Curvature charges can be divided by 1.5 for cross currency exposure so as to avoid double counting	Banks will have to develop a methodology to be consistent with the regulations in terms of applying shocks for cross currency exposure and then use this factor to reduce the charge	↑	↓
Curvature risk scope	Banks can include non-option products like bonds. This treatment has to be either universally adopted or not adopted at all. Banks cannot choose which areas to apply this to	This provides for a more realistic scenario where the natural curvature of bonds is hedged by using option products	↓	↓
Model Eligibility – P&L Attribution Test				
Revised test metrics	The PLA test has been changed from the parametric tests proposed in Jan 2016 to non-parametric tests based on checking for correlation (Spearman Correlation – 'SC') and assessing similarity of distribution (Kolmogorov–Smirnov – 'KS Test') between Risk Theoretical P&L and Hypothetical P&L	Banks will not have to completely overhaul back office risk infrastructure and more desks will be able to pass PLA and use IMA	↓	↓↓
Test thresholds	The traffic light approach proposed in the March consultation has been with a wider amber zone. Amber: SC = 80%, KS = 0.09; Red: SC = 70%, KS = 0.12	New thresholds allow for a smoother transition from IMA to SA avoiding cliff effects	–	↓↓
Risk-theoretical and Hypothetical P&Ls	Banks to align data inputs that go into Risk Theoretical P&L and Hypothetical P&L calculations	Market data alignment will enhance the ability to pass PLA but may require new operational processes	↑	↑
NMRF				
Quantitative risk factor eligibility criteria	An alternate risk factor eligibility criteria has been added and the existing criteria has been modified (a) Risk factor should have at least 24 real price observations with at least 4 real price observations in any 90 day window; or (b) There should be at least 100 real price observations over the last 12 months	(a) In case where banks would have passed the previous criteria by having 1 data point in a month they will now fail this test (b) This allows banks to model seasonal risk factors	–	–
Qualitative risk factor eligibility criteria	Qualitative criteria introduced in the March 2018 consultation have been formalised	This provides further clarification on the qualitative criteria	↓	–
Factor bucketing	Banks can use two options for bucket risk factors: (a) As per the bucketing used in the internal models of the bank. In this case the risk factor granularity should align between NMRF and risk-theoretical P&L (b) Using prescribed regulatory buckets	Factor bucketing will allow banks to use internal bucketing approach but creates complications due to alignment with risk-theoretical P&L	↑	↑
Stress window	Banks to use a common stress window for all NMRFs with an asset class	This reduces the complexity in calculating different stressed window for different NMRFs	↓	–
Liquidity horizon	Banks have to apply shocks based on the higher of 20 days and corresponding Expected Shortfall liquidity horizon	This is less conservative than in the 2016 framework		↓
Equity idiosyncratic risk	Equity can now be aggregated using zero correlation similar to credit idiosyncratic risk	This will lead to consistent treatment with credit spread idiosyncratic risk	↓	↓
External vendor data	Criteria defined for using third party vendor data for risk factor eligibility: (1) Vendor should communicate real price information with date (2) Vendor provides set of identifiers for banks to map data to risk factors (3) The vendor is subject to audit regarding validity of its pricing information	Criteria defined for using third party vendor data allows banks to model more risk factors without the added liability	↓	↓
NMRF aggregation	Banks can use a 60% correlation while aggregating risk factors instead of simple summation except idiosyncratic risk (Gaussian Copula method)	This will allow banks to recognise diversification in NMRF	–	↓↓

Next Steps

The 2016 EU-level package of reforms comprising the revised Capital Requirements Directive (CRD V) and Capital Requirements Regulation (CRR II), as well as the revised Bank Recovery and Resolution Directive (BRRD 2) and Single Resolution Mechanism Regulation (SRMR), which are referred to as 'the banking package', has introduced the FRTB only for reporting purposes.

This means that firms in the EU with large trading books will have to begin reporting FRTB market risk capital using the new SA, although their market risk capital requirements would still be based on the 2016 regulations until CRR III legislation makes FRTB fully binding.

The Commission is expected to submit a legislative proposal in 2020 as part of new CRD and CRR to transpose the final version FRTB, with a view to entering into force on 1 January 2022. While this may give firms some comfort, they would be well advised to ramp up their readiness plans as the reporting requirement will mean firms should be able to calculate the different components accurately.

The FRTB carries a number of challenges. In particular, banks will need a solid infrastructure to satisfy the data quality requirements for FRTB, otherwise a higher capital charge might be applied. So firms should begin preparing for implementation as soon as possible.

What do firms need to do?

High Priority

- Categorise for Trading Book-Banking Book boundary
- Assess Risk Systems & Models (Booking, aggregation, pipeline etc.) to identify and categorise them into the following:
    1) Sophisticated: These are ones that will pass PLA easily with little additional effort and cost
    2) Intermediate: These are ones that will require effort but can be upgraded to pass PLA at some cost
    3) Legacy: These are systems that will need to be completely over hauled at significant cost
- Based on the above assessment, design trading desk structure and SA-IMA portfolio split that might be applicable at the beginning of FRTB. Analysis will be required to make sure maximum hedge benefit is recognised.
- Ramp up NMRF to Value-at-Risk projects to assist in passing model eligibility

Medium Priority

- Build robust tactical tools to actively participate in QIS, industry studies, regulatory studies and provide draft numbers to regulators. PRA has already requested banks to submit SA based numbers on a hypothetical portfolio and other regulators are likely to follow suit.
- Perform gap analysis for data requirements for SA (sensitivity definitions, risk factor requirements, market data etc.) and start upgrading methodology as SA will likely go live before IMA.
- Based on the Risk Systems & Model assessment, firms should upgrade systems where capital benefit outweighs upgrade costs
- Map & validate internally available data to optimise the requirement of sourcing data externally
- Classify products for Residual Risk Add On including drafting documentation and audit

Low Priority

- Reconcile front office & back office models to align them
- Build pipeline from front office to back office for back to back and hedge trade identification
- Build reporting templates, processes and procedures
- Build capability to validate SA models
- Systematically start moving desks to IMA based on upgrading models and systems
- Carry out capital optimisation by taking macro hedges relevant to the FRTB capital structure
- Upgrade IT infrastructure to build capability for complex models like full revaluation
- Optimise trading strategy to maximise return on capital

Contacts

Shazia Azim
Partner
E: shazia.azim@pwc.com
Tel: +44 (0) 7803 455 549

Olivier Vincens
Director
E: olivier.vincens@pwc.com
Tel: +44 (0) 7841 071 937

Ashutosh Nawani
Director
E: ashutosh.navani@pwc.com
Tel: +44 (0) 7703 563 615

Hortense Huez
Director
E: hortense.huez@pwc.com
Tel: +44 (0) 7738 844 840

Mete Feridun
Manager
E: mete.feridun@pwc.com
Tel: +44 (0) 7483 362 070

Chirag Shah
Senior Associate
E: chirag.s.shah@pwc.com
Tel: +91 9867 642 457

With thanks to contributing authors: Surajit Dasgupta, Stefano Tolomeo and Gianluca Messina

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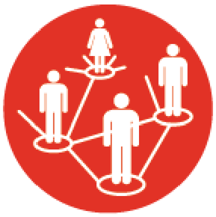

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