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Fundamental Review of the Trading Book

Front-to-back Advisory

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Fundamental Review of The Trading Book

The impact of the Fundamental Review of The Trading Book (FRTB) will be felt well beyond risk, with front office, finance and IT being heavily affected. There are three key impacts:

1. **Capital impact and business strategy**
Banks must respond to the capital changes caused by the FRTB – the impact must be fully understood and used to shape future business strategy.

2. **Processes and controls**
The FRTB introduces major front-to-back office framework changes, such as enhanced disclosure and increased requirements for risk-finance alignment. A robust governance framework is imperative.

3. **IT, data, and implementation**
Systems across risk, finance, and front office will require development work, and early documentation of requirements is essential to ensure nothing is missed.

The Deloitte Difference

- Value beyond Scope of Work
- Proven Competence
- Tools and Accelerators
- Hands-on Experience
- Global Resources
- Road-tested Approach

Gap Identification

An independent review of the bank's current state against the future requirements of FRTB:

Basel II.5 Traded Market Risk and CVA framework **VS.** **FRTB-compliant landscape** → **Identify gaps and provide remedial recommendations**

Deloitte can help gain insights on peer practices, pitfalls, effort and prioritization, based on our extensive FRTB experience. We have supported regional regulators adopt BCBS's guidelines locally. We will analyze gaps between current market risk and business framework vs. that of FRTB. We will also define and track events that would lead to an acceleration/deceleration of FRTB transition.

Business gap analysis

- Gaps in policies, procedures, and processes
- Gaps in the overall operating model

Data gap analysis

- Overall data gaps with required enhancements
- Product-level data gaps

System gaps analysis

- Recommended enhancements, including required modifications to source and support systems

Skills gaps analysis

- Team skills gap analysis
- Recommended training, learning and development

Capital Charge – Revised Standardized Approach

Under FRTB, capital charge can be calculated using two different approaches – the Standardized Approach (SA) and Internal Models Approach (IMA). The guideline also allows for a Simplified Standardized Approach (SSA), which is a light version of SA and can be used by smaller local banks without a significant trading book. An overview of the SA for capital charge calculation under FRTB is given below.

FRTB capital charge components—Standardized approach (SA)

- Value beyond Scope of Work
- Default risk charge (DRC)
- Residual Risk Add-On

The sensitivities of financial instruments to a prescribed list of risk factors are used to calculate the delta, vega, and curvature risk capital requirements. These sensitivities are risk-weighted and then aggregated within risk buckets and risk classes.

Risk Class

- General Interest Rate Risk (GIRR)
- Credit Spread Risk (CSR)
- Equity risk
- Commodity risk
- FX risk

Risk Factor

Variables (e.g., an equity price or a tenor of an interest rate curve) that affect the value of an instrument.

Buckets

The portion of the risk of an instrument that relates to a specific risk factor.

Risk Position

A set of risk factors that are grouped together by common characteristics (e.g., geography, market capitalization size and sector).

Risk Capital Requirement

The amount of capital that a bank should hold as a consequence of the risks it takes.

Non-Linear Risk

Curvature Risk

A risk measure capturing incremental risks for price changes in an option that is not covered by the delta and vega measures. Curvature risk is based on two stress scenarios involving an upward shock and a downward shock to each regulatory risk factor.

Overview of the computational procedure for the linear risk charge

For each risk class, banks must calculate applicable sensitivities for every instrument, arrive at weighted sensitivities. Aggregated results of the following steps reflect delta and vega risks.

1. Assignment of positions to risk classes, buckets and risk factors
2. Calculation of the risk factor's sensitivities
3. Weight sensitivity by risk weights per bucket
4. Aggregation of weighted sensitivities per bucket
5. Aggregation of capital charge on risk class level

Overview of the computational procedure for the non-linear risk charge

For each risk class, to calculate curvature risk capital requirements a bank must apply an upward shock and a downward shock to each prescribed risk factor and calculate the incremental loss for instruments sensitive to that risk factor above that already captured by the delta risk capital requirement using the following step-by-step approach:

1. For each instrument sensitive to curvature risk factor, an upward shock and a downward shock must be applied to k
2. Aggregation of curvature risk exposure within each bucket using the corresponding prescribed correlation
3. Aggregation of curvature risk positions across buckets within each risk class

Our accelerators and tools – expediting the engagement

We will utilize our tried and tested tools and accelerators to expedite this engagement and ensure we spend the maximum possible time on value adding and insightful work. The tools and accelerators that we propose using include:

- **FRTB rules vs. deliverables map**, which enables us to efficiently assess your current state vs. the list of FRTB requirements, and ensure that your implementation plan is based on the full, comprehensive list of FRTB requirements.
- Our **Four Lenses Methodology** and **Operating Model Architecture** supplement our FRTB rules vs. deliverables map, by not only ensuring that we check for completeness of deliverables, but also highlight opportunities for efficiency and provide practical insights (Four Lenses) as well as taking business, information, data and architecture considerations (Operating Model Architecture) into account.
- **Authoritative data list**: Our data dictionary contains all required data fields, their format and validation rules to serve as an efficient completeness check on your available data.

The Deloitte FRTB Capital Calculator – We also have our own utility that can calculate capital as per FRTB SA.
The tool is briefly described below.

Key Functionalities

Calculation

The tool performs a full calculation of the FRTB capital charge under the standardized approach. It includes all three components of FRTB with the national discretion agreement:

- Sensitivity-Based Method (SBM) where for each position in the trading book, the delta, vega, and curvature-based risk charge is calculated and mapped into the appropriate risk charge.
- Default Risk Charge (DRC) where the risk of loss from default in a default event is captured.
- Residual Risk Add-on (RRAO) where the risk charge for instruments not captured in the SBM and the DRC are quantified, like risk for instruments with optionality, gap risk, correlation risk and behavioral risk.

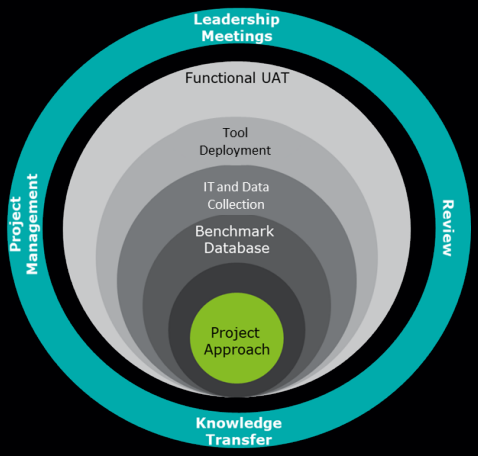
Analytics

The tool presents the opportunity to perform a number of analytical tests in order to gain insights into the capital attribution. It is equipped with the following analytical features:

- Ability to filter portfolio by geography, currency and instrument, and run calculations
- Presentation of intermediate calculations at every step for testing, validation and auditability
- Interactive charts with breakdown of capital charge by asset class, risk, currency and desk

Reporting

The tool has the option to download the results in the Basel format on spreadsheet and pdf. A SAMA template will be available once published. Additional downloadable reports customized for a bank's internal reporting can also be built.



Our experience in international engagements allows us to provide you with insight into international best practices and ensures that you avoid common pitfalls.
To assist our clients, Deloitte offers:

- Tool deployment: A tool for FRTB SA calculation on the client's local system with interactive dashboard
- Trainings: Interactive training sessions covering FRTB methodology, changes from previous requirements and key considerations
- UAT test case development and execution support: UAT test cases ensuring that the theoretical UAT and the system UAT are in line, along with support across the UAT testing activities of the bank

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