The final text of the Fundamental Review of the Trading Book (FRTB) has been published, and the implementation date of January 2019 is looming in the not-so-distant future as the rules create many challenges for compliance in terms of quantitative innovation and technological advancement.

A recent Basel Committee on Banking Supervision Quantitative Impact Study estimated that when the rule is phased in, capital requirements will raise between 3 to 7 times current levels, depending on the desk. Moreover, the new calculation not only have be run more frequently, but are also increasingly more complex. Market estimates suggest 3 to 5x more compute power necessary to run these calculations. The end result - banks are forced re-think their current risk architectures.

NUMERIX ONEVIEW FRTB

Numerix Oneview platform helps organizations transform their current business process by integrating and aligning front office analytics, with risk modelling. Through the Oneview Enterprise platform institutions can enable the front office to conduct capital efficient trading decisions while providing a unified view of risk across the trading booking – aligning front office trading operations and regulatory reporting, on a consistent model and risk platform.

Oneview offers a comprehensive set of analytics for the FRTB Standardized approach including the calculation of sensitivity-based risk charges and default risk charges. Oneview also has been architectured to allow institutions’ an easier path for Internal Model Approach approvals with the introduction of Expected Shortfall and the ability to dynamically calculate the impact of Non-modellable risk factors. This approach, along with Numerix’s methodologies for calculating P&L attribution, make Oneview a key component in satisfying regulatory demands and providing institutions better actionable insight to the trading operations.

“The regulatory picture has become a lot clearer over the past year, and firms want to get their data and analytics under control at an institutional level, reducing the overall number of platforms and databases they operate. OneView brings everything together to manage XVA, market risk, collateral and FRTB requirements in one place,” says Satyam Kancharla, chief strategy officer at Numerix.

Feb. 2, 2016 – Risk Magazine Awards

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A CHECKLIST OF FRTB PRIORITIES

Changes to Market Risk Capital Charges
- Potential changes are anticipated to be significant1
- How could this impact your derivative business strategy going forward?

Methodology
- Trading/Banking book boundary changes—presumptive lists and qualification criterion ("intended purpose") for being in Trading Book

Support for Standardized Approach
- SA is mandatory and must be used as fallback/benchmark

Expected Shortfall vs. VaR
- VaR becomes Expected Shortfall (ES) for Modellable Risk Factors
- Move from Stressed VaR to Stressed ES for Non-Modellable Risk Factors
- Additional scenarios potentially required

Changes to Liquidity Horizons (As Set by the Regulator)
- Integration of Market Liquidity Risk
- Incorporate Liquidity horizons from 10d to 250d

Support for Residual Risk Add-On2
- Required for Standardized Approach
- Defined as simple sum of gross notional amounts of instruments bearing residual risks multiplied by 0.1% as of today and 1% for “exotic” instruments

Model Validation
- P&L Attribution
- Backtesting
- Validation of Internal Model Method (IMM) at desk level

Default Risk Charge
- Measures capital requirements for default
- To be calculated in Standardized Approach [SA] and Internal Model Approach [IMA]

CVA Framework: Industry Recommendations Still Under Consideration3

Can your organization’s IT Infrastructure Support these changes?

1 http://www.bis.org/bcbs/publ/d346.pdf, Section 2.1
3 Industry response to BCBS Consultative Paper on the Review of the CVA Risk Framework from ISDA, GPFMA and IIF recommends at least one more Quantitative Impact Study (QIS) is carried out prior to finalization. http://www.bis.org/bcbs/publ/d525/pdf

For more information on FRTB visit our dedicated web page: www.numerix.com/frtb.
ONEVIEW RISK

Numerix Oneview Risk includes pre-trade decision support; XVA pricing adjustments; market risk analytics such as VaR/expected shortfall and scenario analysis, stressed VaR and back allocated VaR; profit-and-loss (P&L) attribution/explanation; and real-time limits management, as well as exposure measures for risk management.

**PRE-TRADE PRICING & XVA ADJUSTMENTS**

- Calculate trade-level profitability (EVA or Economic Value Added) in real-time for pre-trade decision-making
- Incorporate counterparty credit risk (CVA/DVA), funding costs (FVA), capital costs (KVA), margin (MVA) and other XVA pricing adjustments into pre-trade prices
- Price extremely large derivative portfolios (millions of trades) across all asset classes and instrument types, including vanillas, exotics and structured products
- Optimize capital allocation, funding costs, collateral usage, and margining while minimizing market risk and counterparty risk
- Perform “what if” analysis to determine optimal counterparty to trade with based on counterparty risk limit utilization, capital charges (e.g. bilateral vs. CCP), collateral agreements, and netting
- Forecast capital requirements over time, allocate capital to desks and trades/portfolios, and choose between a Standardized Approach or Internal Model Method (IMM) approach for regulatory capital calculations
- Replicate or approximate CCP margin, and calculate bilateral Initial Margin and Variation Margin based on the Standardized Initial Margin Model (SIMM)
- Evaluate and optimize collateral agreements and collateral usage
- Perform PnL prediction, attribution and back-testing to understand PnL and risk drivers
- Understand incremental and marginal measures for each XVA as a trade is transacted
- Calculate XVA sensitivities for dynamic hedging purposes

**MARKET RISK**

- Pre- and post-trade risk analysis: Dynamic in-memory cube enables ‘Slicing & Dicing,’ aggregation and drill-down of PnL and market risk measures, including non-linear measures such as VaR and Expected Shortfall, in real-time.
- Greeks & risk sensitivities: Utilize out-of-the-box Greeks, or apply user-specified scenarios to calculate custom risk sensitivities.
- VaR: Calculate intraday historical VaR, Monte Carlo VaR, stressed VaR, and Expected Shortfall as the markets move. Change variables such as confidence levels or liquidity horizons in real-time to see the effect and match.
- Incremental & marginal VaR: Calculate Incremental & Marginal VaR
- Stress testing & scenario analysis: Conduct a wide range of stress-testing and scenario analysis.
- Customizable views of risk: View risk at the enterprise, portfolio or trade level, by desk, type, sector, region, currency or other custom groupings.
- “What-if” trade analysis: Perform ‘what-if’ trade analysis, available pre-and post-trade, at the enterprise or desk level.

**COUNTERPARTY CREDIT RISK**

Calculate all counterparty exposure measures and pricing adjustments

- Calculate PFE, EE, EPE, ENE as well as unilateral and bilateral CVA/DVA

Analyze counterparty risk in real-time, for fast trading and risk decisions

- Risk-adjusted pre-trade pricing
- “What-if” trades with pre-trade incremental CVA/DVA

**REGULATORY REPORTING**

- Coverage and reporting for Basel III CVA, SA-CCR and FRTB
- Counterparty Credit Risk capital, CVA charges and CVA-VaR for Basel III
- Utilizing historical VaR (HS-VaR) and stressed HS-VaR, as well as Expected Shortfall and backtesting capabilities
- Automated model validation and verification for derivative pricing models
- Support for SA and IMA
- Standardized monthly reporting and management dashboards

For more information, contact: sales@numerix.com

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