

Oracle Financial Services Market Risk Measurement and Management

ORACLE[®] Financial Services

Effectively evaluate of market risk across the enterprise through robust computations and address FRTB compliance out-of-the-box with Oracle Financial Services Market Risk Measurement and Management.

“At Numerix we're proud of the diverse and dynamic ways that the Numerix model library and pricing architecture is integrated into other systems, such as Oracle's. Combined expertise across the financial services industry ensures end users have the most comprehensive suite of capabilities at their fingertips. As one of the industry's most sophisticated model and pricing library, Numerix technology can easily be used in a wide range of solutions including for FRTB compliance. We're proud to support Oracle with our world class analytics as they expand their capital markets applications and risk reporting solutions for FRTB.”

STEVE O'HANLON
CEO
NUMERIX

Banks deploy highly sophisticated mathematical and statistical techniques to manage market risk prominent among these is VaR analysis. However, in the last decade shortcomings of VaR and other risk models have been exposed, driving the emergence of innovative products in the industry. It has led to regulators coming up with new methods to manage market risk, the latest being Fundamental Review of the Trading Book (FRTB). Oracle Financial Services Market Risk Measurement and Management ensures effective evaluation of market risk across the enterprise through robust computations. Backed by Numerix, a provider of innovative capital markets technology, the Oracle application comes out-of-the-box ready to address FRTB compliance.

Comprehensively Addressing Market Risk

Assess Risk at Any Level of Granularity

Oracle Financial Services Market Risk Measurement and Management enables institutions to estimate the risk for multiple, user-defined portfolios. Portfolios are defined based on a combination of one or more dimensions such as counterparty, line of business, legal entity, asset class and instrument type, that enable risk assessment at any required level of granularity in the organization. This provides institutions with a holistic view of risk on their trading book and enables them to regulate risk at the level of each dimension; thereby developing effective risk management strategies.

Estimate Portfolio Risk Across Multiple Models

The Oracle Financial Services Market Risk solution offers the flexibility of estimating the risk of the portfolios based on user specified parameters such as time horizon, confidence level and supports seasonality adjustments, which are critical in the case of commodity exposures. The parameterization process is driven by a business user-friendly GUI and is configured in a manner that allows for estimation of risk of a portfolio across multiple models.

Incorporate Robust Risk Computations

Valuation: Oracle Financial Services Market Risk Measurement and Management has integrated pricing models that enable valuation of a wide range of instruments, including exotic derivatives such as caps, quantos and basket structures. Instruments are priced based on underlying risk factors; pricing functions enable the assessment of the sensitivity of option instruments to multiple parameters by estimating the Greeks, such as Delta, Gamma, and Rho.

KEY BUSINESS BENEFITS

- Out-of-the-box support of FRTB calculations
- Pre-configured models to compute price and other instrument granularity outputs like sensitivities
- Out-of-the-box support of CVA calculation using Monte Carlo simulation method.
- Out-of-the-box support of FRTB calculation for back testing and P&L attribution
- Allows user to set rules to identify Modellable and Non Modellable Risk Factor

KEY FEATURES

- Fully comply with the Internal Models Approach for the Fundamental Review of the Trading Book
- Reassurance of robust pricing delivered by market leading Numerix engines
- An unrivalled data management and governance framework
- Agility to keep FRTB programs on track and ensure compliance

Comprehensive reporting with extensive drill-through

Risk Factor Modeling: Underlying risk factors for each instrument are modeled using a variety of pricing models covering all asset classes. The parameters are estimated using standard statistical techniques that are based on generalized linear models and are used for calibration of the parameters of each of these processes.

Risk Calculation

Risk Measure Estimation: This solution enables banks to accurately measure, evaluate, monitor and manage the risk of loss in their trading books and to proactively comply with regulatory requirements of capital calculation for the Internal Models Approach. The solution gives financial institutions flexibility for pricing and managing complex derivatives and structured products while providing robust risk computations and in-depth attribution analysis. Organizations can use it to compute Market Value, Greeks, sensitivities and both Market Risk (VaR, ES) and Counterparty Risk (CVA, DVA, PFE, EE).

Historical Simulation: Oracle Financial Services Market Risk Measurement and Management comes with pre-configured calculation logic for FRTB Internal Models Approach metrics using historical simulation method. The calculations take into account liquidity horizon at risk factor granularity, reduced set of risk factor, identification of stress period, IMCC computation based on risk factor types, continuously validating reduce set with each execution.

Model Validation: Oracle Financial Services Market Risk Measurement and Management supports FRTB calculation for back-testing and P&L attribution. It takes into account exceptions based on Risk Theoretical P&L and Hypothetical P&L, First Ratio and Second Ratio computation, Type I and Type II ratio, RAG classification.

Modellable and Non Modellable Risk Factors: Oracle Financial Services Market Risk Measurement and Management enables user to identify whether risk factor's data is continually available or not. The solution allows user to set rules to identify Modellable and Non Modellable Risk Factor and ascertain if risk factor is "Real" in nature or not.

Comprehensively Address the FRTB Internal Models Approach

Data Management Challenges

Major challenges within FRTB are data management and intensive computation; those financial institutions that specifically implement the Internal Models (IMA) approach will have to face the complicated challenge of managing market data and supporting the memory intensive computations. The Oracle Financial Services Analytical Applications (OFSAA) suite of products, including Oracle Financial Services Market Risk Measurement and Management, comprehensively addresses all data related challenges including data governance, data storage, and data cleansing. The Oracle Financial Services Data Model enables sourcing of a variety of data at multiple granularities. Generic structures ensure that the bank can obtain market data from any provider and manage risk factors while the data quality framework can be used to setup functional and technical validations with an automated correction process.

Full IMA Capabilities

The application supports multiple model validation definitions with respect to internal and regulatory requirements in order to qualify the desk for IMA approach. Full capabilities of the IMA Approach include:

- Classify risk factors into prescribed regulatory categories
- Identification of modellable and non-modellable risk factors using user defined criteria
- Determine reduced set of risk factors based on variance, co-variance and correlation techniques
- Identify 12-month stress period over observation time
- Default risk charge calculation: Banks can use OFSAA model or plug-in their own
- Liquidity adjusted expected shortfall calculation for current and stress period using full and reduced set of risk factors
- Stressed capital add-on calculation for non-modellable risk factors
- Model Validation
- Back testing of VaR model and P&L attribution
- Three zone (R-A-G) approach to interpret back testing results
- Determine eligibility of trading desks to follow IMA
- Reporting
- Pre-configured analytical reports using Oracle Business Intelligence

Leverage a Scalable Architecture

The managerial and regulatory requirements within any department of the bank are overwhelming, and FRTB is no exception. By implementing OFSAA, the organization is able to leverage a scalable architecture with desk-level analysis to efficiently satisfy management and regulators. With the Numerix CrossAsset Server Solution embedded in the Oracle solution, a unified pricing and risk solution can be deployed to enable multiple pricing policies that can be shared across different units of the bank.

- » Flexibility for pricing and managing complex derivatives and structured products while providing robust risk computations and in-depth attribution analysis
- » Track all results through an automated system, including exceptions and underlying market data, in line with the bank's policies and procedures

Integrate Risk Systems Across the Organization

Eliminating the Gaps

Integration of risk systems across the front and middle offices with enhanced data management and model validation is what makes OFSAA's solution stand out amongst the competition. Traditionally, financial institutions work in silos and have no streamlined information across the enterprise; the Oracle Financial Services Market Risk Measurement and Management application is just one-step in eliminating the silos and bridging the gaps between data and models.

Incorporating the Standardized Approach

Oracle Financial Services Basel Regulatory Capital addresses the Standardized Approach for FRTB. With both applications, the organization can seamlessly send data including sensitivities by risk factor, shocked and normal prices for curvature risk, and vega for instruments with optionality to meet the Standardized Approach for a full end-to-end FRTB Solution.

About Oracle Financial Services Enterprise Risk Management

Oracle Financial Services Analytical Applications bring financial institutions best of breed capabilities to proactively manage Risk, Treasury, and Finance. The applications are built upon a commonly available analytical infrastructure consisting of a unified financial services data model, analytical computations, a Metadata driven "R" modeling platform, and the industry-leading Oracle Business Intelligence platform. This provides one version of the analytical "truth" throughout the enterprise.





Oracle Financial Services Enterprise Risk Management spans all areas of risk, including credit, market, operational, liquidity, fixed asset, business, and reputational risk. This solution enables financial institutions to establish a single measure of risk across the organization and obtain a comprehensive and consistent view of risk and performance. Oracle Financial Services Enterprise Risk Management helps manage all risk and provides necessary feeds for compliance-based reporting. The capabilities of Oracle Financial Services Analytical Applications for finance and risk help institutions address compliance issues that demand a close operational synergy between finance and risk functions.



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