

Risk.net

Market Technology

Awards

2018

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Murex

Market risk management product

Murex's MX.3 for Market Risk has three core components – a value-at-risk engine, a stress-testing component and a more recent module for compliance with the Fundamental Review of the Trading Book (FRTB).

The MX.3 Market Risk Engine Core VaR creates scenarios, and computes profit and loss and sensitivities for all VaR methodologies, leveraging the market data and the pricing models in the MX.3 platform as well as clients' own models. It computes incremental contribution of trades as they are booked, and monitors limits against market risk metrics. All market risk inputs and outputs can be viewed in a single risk dashboard.

The Market Risk Engine Core Stress Testing estimates potential losses in abnormal markets or extreme-yet-plausible scenarios. The company says it will stress any relevant market parameter, including prices, curves, smile surfaces and user-definable parameters.

In April, Murex released an FRTB module that handles the process of calculating the minimum capital requirements for market risk for both the internal model and the standard approaches. The firm says it covers aspects from the generation of scenarios, and the measurement of the impact of the

scenarios on full trading book positions across all asset classes, to the calculation of the required statistics for both approaches, as well as validation via backtesting and the profit-and-loss attribution test. An FRTB standard approach version offers pre-packaged business rules and data mappings for a number of regulatory jurisdictions aimed at reducing implementation time and costs.

Judges said:

"Comprehensive, well documented."

"Solid functionally, a rich offering."

Murex says:

Marwan Tabet, head of product evolution for enterprise risk management, Murex: "Winning the market risk management product of the year award acknowledges our extensive investment in our platform. By combining cutting-edge technologies for high-performance computing and fit-for-purpose engines for complex requirements such as FRTB or derivatives valuation adjustments, we are empowering clients and giving them the means to transform their operations across the trading value chain." ■

Trading systems: structured products/cross-asset

Murex's MX.3 capital markets trading, risk and back-office platform covers a comprehensive range of cash and derivatives asset classes, including inflation, securities financing, commodities and emerging market products, and has a catalogue of 350 payoffs for structured products. It provides real-time monitoring of positions, liquidity and profit and loss. Its distributed architecture is scalable for high-volume products and complex analytics will run on grids of conventional or graphics processing units for high performance.

MX.3's structured trade builder module has a trade repository for historic representations of transactions, including detailed representations of deals and market events they can undergo, and a flexible market and static data repository. Structured products can be built 'on the fly' for one-off use, or configured as new payoffs.

The firm says its e-Tradepad pricer supports the pricing of a wide range of



Stéphane Remille

payoffs and the creation of pricing matrices, as well as enabling legs of deals to be combined into strategies and potential trades to be checked for contribution to aggregated limits. A structured bond module is available from e-Trader, and encapsulates exotic payoffs within a security. By creating a structured note automatically from an exotic swap leg, the bond and the hedging swap share the same pricing representation.

Judges said:

"Murex has been winning decisions where banks want to consolidate assets on a single system."

"Competitive, stable system with loyal clients."

Murex says:

Stéphane Remille, head of trading and financial engineering, Murex: "With structured products, customers expect wide product coverage and, most importantly, seamless integration of instruments along the value chain. This is fundamental to overcoming new challenges and increasing competitiveness, and encompasses the ability to optimise regulatory compliance, vary distribution channels, leverage fast and accurate analytics to make right and timely decisions, and manage higher-volume straight-through processing." ■



Maximising effectiveness with tech

Marwan Tabet, head of product evolution for enterprise risk management at **Murex**, discusses how technology has evolved the organisation's offering, and how its analytics expertise can help clients implement a cost-effective model risk management framework in a changing landscape

Model risk management has changed greatly over the past 10 years – how has Murex helped customers deal efficiently with this change?

Marwan Tabet, Murex: The number and complexity of models has grown dramatically over the past few years – utilisation of models across a wide scope coupled with higher automation has increased model risk. Banks must implement tight processes to mitigate risk, comply with regulation and – more importantly – avoid substantial losses.

Murex's answer is to help clients implement a cost-effective model risk management framework – particularly in areas of model validation where we observe a significant market appetite. In those areas, we leverage our deep analytics expertise across asset classes, as well as our comprehensive grasp of the entire end-to-end valuation chain. The challenge is to go beyond validating a pricing library to achieve integrated validation through the entire valuation chain.

Specifically, we deliver automated testing through a pre-packaged and customisable framework that covers calibration fit and stability, sensitivities replication and smoothness, payout and model degeneration, profit-and-loss attribution and stress testing. Our tools offer full transparency over all intermediate calculation steps covering, for example, statistical testing of Monte Carlo random numbers, risk factor diffusion models, or collateral long-term simulation in the context of derivatives valuation adjustments (XVA).

It is important to mention that a shortage of quant resources is becoming an impediment to model validation, as banks are dealing with a large number of new regulations with aggressive timelines. To help them, we work closely with third-party partners who can accelerate the model validation process by leveraging our tools and complementing them with their quantitative expertise.

What role does technology play in developing Murex's products and solutions?

Marwan Tabet: Technology is a key enabler for delivering high added-value capabilities within our solutions. We aim to embrace new technologies early to build expertise and prepare to utilise them for solving complex problems. For example, we developed an expertise in graphics processing units (GPUs) more than 10 years ago – long before they entered the mainstream. With GPUs, we delivered high-performance computing for XVA and XVA sensitivities, giving central desks powerful tools to price and hedge their risk.

We are continuously adapting our architecture so clients can benefit from cloud computing, which is another example of technology bringing significant benefits to banks – particularly with 'elastic compute' for managing peaks in calculations at a substantially lower cost. Machine learning is presenting opportunities and broadening horizons, and has the potential to break new ground in tackling tricky problems in quite novel ways. In general, expectations are always increasing, and what was a remote possibility a few years ago is now becoming very achievable. Adopting new technologies is crucial, but it is also extremely important to make the right choices in a continuously changing and evolving environment.

How does Murex's MX.3 platform adapt to rapidly evolving regulatory changes?

Marwan Tabet: We have chosen to invest massively in the platform throughout the crisis years. More than €1 billion was invested in enabling cutting-edge technology and risk tools that are now proving vital to our clients, as they must be able to rapidly adapt packaged solutions for emerging regulations. We have also invested in interpreting rules of key regulations and pre-packaging business rules and system configuration. This has accelerated clients' implementations and solution testing.

For the Fundamental Review of the Trading Book (FRTB), we analysed the finest details of the regulations and built a highly optimised solution, which we released earlier this year. Several clients have



Marwan Tabet

been able to perform end-to-end calculations of the regulation's capital impact across their trading desks, with many having already begun implementation. In general, we look at regulation holistically and try to identify whether there are strong synergies across regulations. For example, the standardised approach to FRTB, standard initial margin model and the standardised approach for measuring counterparty credit risk will share the same calculations and data layers. In such cases, we systematically leverage our tools and expertise to reduce the time taken to market and deliver a consistent framework.

What opportunities and challenges does Murex expect to face in 2018?

Marwan Tabet: After several years of investment to meet regulatory requirements, we see a unique opportunity for enterprise risk management to transform its operations and take a central role in organisations. By embracing new technologies – and thanks to closer integration with various business processes across banking activities – risk management will have the means to lead organisations to appropriate strategic decisions in a highly regulated and competitive environment. Of course, there are still several challenges ahead, including culture, a lack of resources and a very heavy regulatory agenda.



An award-winning enterprise risk management solution

Regulation has redefined risk, margining and collateral management; risk must now be embedded in front office and collateral processes. Our Enterprise Risk Management solution, MX.3 for ERM, is a cross-asset, cross-function platform that enables intra-day monitoring of risk at every step of the value chain and comprehensive regulatory compliance across market, credit and liquidity risk.



Control risk, consolidate processes and comply with changing regulations with our award-winning technology solution.

Discover more at murex.com

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