



Eurex Clearing offers more ways to rein-in risk

In 2009 while the industry was still reeling from the financial crisis, Eurex Clearing was busy developing additional solutions to help customers rein-in risk. In fact, the leading European clearing house has been performing real-time risk monitoring since June 2009, as Eurex Clearing's Head of Risk Design, Thomas Laux, reports in this article

The leading European clearing house, Eurex Clearing, has been performing real-time risk monitoring since June 2009. In the first phase, it was introduced in order to enable more timely risk management calculations on the part of the clearing house to monitor clearing members' risk exposure. In March this year, Eurex Clearing led the industry in introducing the same real-time risk management for clearing members and their associated trading members. The clearing house provided a brand-new way of keeping a handle on intraday risk levels via its risk interface *Enhanced Risk Solution*. With the introduction of that feed, Eurex Clearing became the first clearing house to offer members real-time risk monitoring data for derivatives.¹ Delivering risk data to members via the *Enhanced Risk Solution* replicates the granularity of the clearing house's risk calculations on the member side so that members have better oversight and control of their own risk.

Real-time risk monitoring is a cornerstone

Provision of real-time risk data represents a real step forward because it allows members to monitor developments in risk as they happen. And quicker delivery of risk data promotes more active risk management, which protects the integrity of the markets as a whole – especially during volatile markets. It also enables very efficient use of collateral, and can provide indications of intra-day margin calls as risk managers can monitor margin surpluses/shortfalls in real time.

Introducing real-time pre-trade risk protection

Thomas Laux, head of Risk Design at Eurex Clearing, adds that Eurex Clearing hasn't been resting on its laurels since introducing its risk interface in March. He states: "Our risk tools certainly aren't limited to passively monitoring positions. We also give customers the tools that they need to proactively set risk limits in advance so they can protect themselves before disaster strikes. With the rise in algorithmic trading², clearing houses must keep up. Limits like

these are a must for a globally operating multi-asset-class clearing house like Eurex Clearing, which serves approximately 120 clearing members in the derivatives, securities and energy markets. When the financial world is operating with enormous data volume and at such high speeds, real-time safeguards that have negligible impacts on performance are a necessity."

Eurex Clearing is building out its pre-trade risk tools in a big way with the annual Eurex® software release, *Eurex Release 13.0*, which goes live in November 2010. Now members have even more pre-trade risk tools at their disposal to limit market risk. The clearing house introduces an advanced pre-trade risk management service that enables clearing members to define individual risk limits for themselves or their associated trading members. These limits are based on actual calculations and result in various pre-trade actions, which were designed especially to avoid latency impacts.

Laux stresses that Eurex Clearing designed the new risk limits to be simultaneously sophisticated in design yet relatively simple to use. "We've closely co-operated with market participants to ensure that our new limits have maximum value and we have invested a lot in both awareness raising and member training in the run-up to *Eurex Release 13.0*. We've made sure that market participants have been closely involved in the pre-launch phase to ensure that our new limits have maximum value."

With *Eurex Release 13.0*, clearing members can define configurable risk limits according a variety of criteria. Eurex Clearing introduced four different risk metric types to give members greater choice to find limits that adequately reflect their risk management approaches:

- Total exposure, i.e. total margin requirement
- Profit and loss, i.e. additional margin + futures spread margin + premium margin modification
- Cash flow, i.e. variation margin + option premium
- Market risk, i.e. additional margin + futures spread margin.

When these member-defined limits are breached, pre-defined safety measures will be activated automatically. This customisation encourages members to set risk limits in advance

¹ *Eurex Clearing also currently offers near-time risk monitoring for other markets for which it provides clearing services.*

² *In the case of derivatives traded at Eurex, by autumn 2010, between 60% and 70% of all options orders and quotes and between 80% and 90% of all futures orders entered were using the Enhanced Transaction Solution high-frequency trading interface.*

to proactively safeguard trading activities. Members specify which of three actions will occur when a breach of an individual level (risk metric) happens:

- **Level 1:** An alert message is broadcast by the clearing house to both the non-clearing member and its respective clearing member.
- **Level 2:** The system automatically slows down a member's order/quote entry and order/quote modification by enforcing a minimum delay between non-delete transactions in any single product.
- **Level 3:** The member's trading state is set to 'halt', all open orders and quotes are deleted and all trading and clearing functions are automatically prevented.

Additional measures on the horizon

While these pre-trade risk tools are a major step forward, Eurex Clearing continues to develop new and innovative measures to help customers to proactively manage risk. Yet another enhancement is already scheduled for a spring 2011 introduction. According to Laux, Eurex Clearing's next step is to further increase the precision of its risk calculation procedures for options positions. As of April 2011, Eurex Clearing will amend the way it uses implied volatility in its risk-based margining process.

In the future, the risk of changes in implied volatility will be calculated in two-dimensional scenarios. This means that the clearing house will consider simultaneous shifts in the underlying price and the implied volatility. With this enhancement, Eurex Clearing will increase the accuracy of additional margin calculations for options positions. Spring 2011 will also see the introduction of a 'margining by contract and maturity' methodology. This will allow the clearing house to deliver greater accuracy and precision in risk management for relevant futures, thus further streamlining risk and collateral management.

With its newest introductions, Eurex Clearing highlights its commitment to market safety and integrity.³ And greater confidence in the safety of the marketplace means that Eurex Clearing's customers are clear to trade.

³ For additional insights into the Deutsche Börse Group's proposals for enhanced safety and integrity in the financial industry, view the Group's white paper, The Global Derivatives Market: A Blueprint for Market Safety and Integrity, which can be downloaded from: [http://deutscheboerse.com/mr/binary/166673D45AFB04C3C125762E004F6B02/\\$File/DtB_WP_2009_RZ4_090904_e.pdf?OpenElement](http://deutscheboerse.com/mr/binary/166673D45AFB04C3C125762E004F6B02/$File/DtB_WP_2009_RZ4_090904_e.pdf?OpenElement)



Thomas Laux heads the Risk Design section of Eurex Clearing, Europe's leading clearing house for securities and derivatives transactions, where he is responsible for design and development of all risk management models and services.

Prior to joining Eurex Clearing in 2006, Laux spent six years at Deutsche Börse Systems, working in a variety of positions on group-wide strategic projects.

Laux holds a dual MBA from the Fuqua School of Business, Duke University, and the Goethe Business School, Frankfurt, where he was recognised as Fuqua & Goethe Scholar. He also received a degree in mathematics and computer science from the Technical University of Darmstadt.



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but by improving
market safety,
we've improved
market opportunity.

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