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numerix

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Market risk technology product of the year (sell side)

Risk Awards 2016

Risk Awards 2016 Winner

Full-service vs focus

What if regulators had broken up Citi after the financial crisis, as some argued they should? There would be one less too-big-to-fail bank to worry about, but the financial services industry would now lack a leading light.

At a time when most of its peers are scaling back their ambitions – choosing to concentrate on asset management and the few bits of investment banking that are still appealing, such as foreign exchange and equities trading – Citi continues to offer full-service investment banking.

The bank is active across the full range of asset classes, including credit and commodities, and still sees derivatives as a core offering – with an appetite not only for the flow business but also advisory and solutions work, as well as derivatives clearing.

The strategy appears to be working: Citi reported profits of $17.2 billion in 2015, the most since 2006.

"We've come through the hard times with a franchise that is strong in all the core products," says Paco Ybarra, head of global markets at Citi. "We are profitable in all the core businesses, including commodities and equities. That is not a given, it's not easy to achieve, but we had the strategic determination, the right tactics – and a bit of luck. Our returns are above our cost of capital and we're ready to do significantly better."

Citi wins this year's derivatives house of the year award and also gets the nod in the credit, over-the-counter client clearing and single-dealer platform categories.

Elsewhere, the bifurcation between full-service investment banks and more specialised players is clear to see. Citadel Securities was named Interest rate derivatives house of the year – the first time a non-bank has claimed this award.

Citadel's approach to rates trading contrasts sharply with Citi's full-service model. In the over-the-counter derivatives markets, the Chicago-based non-bank market-maker only trades US dollar and euro-denominated swaps – it doesn't quote non-cleared products, and doesn't offer research or advisory services.

But what it does, it does extremely well. Citadel's swaps trading operation was ranked first on Bloomberg's swap execution facility (Sef) by volume, response time, hit ratio, client enquires and risk traded at the end of 2015 – a remarkable feat considering it only opened for business on October 27, 2014.

More importantly, the firm's diverse and enthusiastic client base believe it is forcing incumbent dealers to change for the better: "Citadel has improved the market structure, in terms of people quoting sharp prices and coming back faster. It's really forced the dealers to move – I really like that aspect. Even when they don't win, they've done a good service to the industry, making sure others compete on the same terms," says a senior trader at one large US asset manager.

In other awards, Alexandre Antonov of Numerix was named quant of the year for his work on negative rates modelling; Citadel's investment arm was named hedge fund of the year; Vanguard claimed the award for best asset manager; LCH.Clearnet wins clearing house of the year; while trueEx takes the award for Sefs.

As always, picking the winners was extremely difficult. *Risk* asked candidates to submit detailed information on their businesses, and shortlisted firms underwent face-to-face and telephone interviews. *Risk* then gathered feedback from clients and other market participants.

The final decisions were made by *Risk*'s editors and journalists, weighing a number of factors, including risk management, creativity and innovation, liquidity provision, quality of service and customer satisfaction, and engagement with regulatory issues.

Where decisions were tight, client feedback often helped settle the issue. The *Risk* editorial team thanks all this year's participants for their time and help. ■

Market risk technology product of the year (sell side)

Numerix

If there was a single moment when Numerix could be said to have proved its mettle, it was during one of the most infamous episodes in financial history – the unwinding of Lehman Brothers. Competing against 20 others, the vendor was chosen in 2009 to represent the creditors of the defunct bank in valuing more than a million terminated trades.

"We showed we were capable of what would be one of the most complex derivatives valuations in history when they asked us to value 100 exotic trades, and the other vendors all came back with 100 trades priced, but we only priced 90," recalls Steven O'Hanlon, chief executive and president of Numerix. "That wasn't because those last 10 trades were too complex, but because they weren't actually real deals. We were the only vendor with the quantitative expertise to work that out."

Fast-forward seven years, and derivatives pricing has changed almost beyond recognition, as a suite of add-ons has gradually been added to the mix. What started with the credit valuation adjustment (CVA) to account for the risk of counterparty default has now extended to capital, debit, funding and margin valuation adjustments, collectively known as XVAs.

The computational power and quantitative skills required to calculate the XVAs in real time is such that many banks have looked to technology vendors for assistance. Numerix has moved with the industry, and just as it outpaced its rivals in 2009, clients say its XVA platform continues to lead the field.

"From a trader's perspective, speed is of the essence, and waiting several seconds for a Monte Carlo simulation can be painful, but we have been very impressed by the speed of Numerix relative to its competitors. It's also very flexible and can be integrated with our front-office trading system, while allowing us to build our own pricing models independently," says Frederick Shen, head of global treasury business management at OCBC.

"In many banks, regulation is strangling businesses because of the increased costs associated with both manpower and systems, so there is a growing focus on transformation projects"

Steven O'Hanlon, Numerix

Since launching a CVA platform in 2011, Numerix has evolved its offering through several iterations as market demands have changed. Forthcoming regulatory changes, including margin requirements for uncleared derivatives and the Fundamental review of the trading book (FRTB) will affect pricing, so the firm has had to adapt and tweak the platform accordingly.

The latest version, dubbed OneView, brings together multiple strands of functionality so firms can monitor and manage their market risk and counterparty risk from a single point, accessible to the chief risk officer as well as to individual trading desks and other functions across the enterprise. Of Numerix's 700 clients, 20 are using OneView today, but the company expects that number to rise to more than 100 within three years.

"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.

Institutions can choose to adopt individual components and Numerix finds itself tailoring its technology to the needs of individual clients, which can naturally vary from one region to the next. Implementation time varies, but often is driven by regulators' deadlines.

"The platform is designed to be very open and configurable and we typically have financial engineers working with clients to ensure efficient and effective implementation. In some cases, the pressure to meet deadlines has been very high, and we have had to get clients from start to finish within three months to avoid penalties from regulators," says Kancharla.

Reflecting on the journey Numerix has taken since the financial crisis and its work on the Lehman Brothers portfolio, O'Hanlon says the company has managed to bring multiple risk types together by combining quantitative expertise with flexible technology that can scale to different parts of an organisation.

"In many banks, regulation is strangling businesses because of the increased costs associated with both manpower and systems, so there is a growing focus on transformation projects that will reduce the number of systems and allow them to grow in the future. OneView is perfectly suited to that transformation agenda," says O'Hanlon. ■

Are XVAs Impacting Your Trade Profitability?

XVA's DEFINED: THE PROFITABILITY PUZZLE

CVA – Credit Valuation Adjustment

Valuation adjustment to a derivative price due to risk of a counterparty default

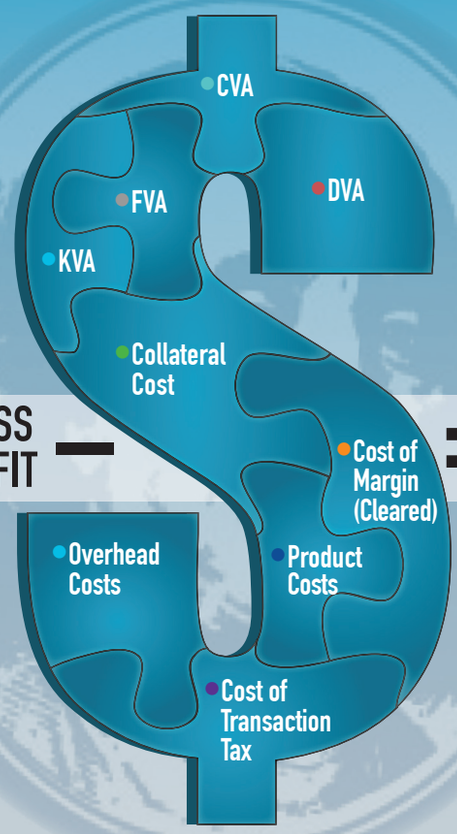
KVA – Capital Valuation Adjustment (a.k.a. Cost of Regulatory Capital)

Derivative valuation adjustment due to the cost of regulatory capital though the life of the contract

DID YOU KNOW:

XVAs reflect the capital a trade consumes over its lifetime, which is an obvious source of cost or benefit, and large dealers are increasingly incorporating it in their prices.

–Nazneen Sherif, *Risk Magazine*[1]



GROSS PROFIT – = EVA ECONOMIC VALUE ADDED

DVA– Debit Valuation Adjustment

Valuation adjustment to the price of a derivative contract due to one's own risk of default

FVA - Funding Valuation Adjustment

Valuation adjustment due to the funding cost implications of a trade not under perfect CSA

"XVA and risk are two sides of the same coin. The end goal is of course 'risk informed' pricing for trading decisions and mark-to-market".

–Satyam Kancharla, Chief Strategy Officer, Numerix

Collateral Cost (Bilateral)

Costs specific to non-centrally-cleared bilateral derivative transactions made between counterparties, including cost of collateral and Initial Margin

Cost of Margin (Cleared)

Costs specific to centrally cleared transactions, including adjustments for Initial Margin & Variation Margin

Overhead Costs

Necessary costs not directly attributable to a product (non-recoverable costs) including i.e. Legal, Advertising and Administrative costs

Cost of Transaction Tax

Includes the cost of transaction taxes on certain derivative-related financial transactions, which may increase in scope due to changing regulations

Product Costs

Initial and ongoing costs specific and attributable to the transaction, including hedging and other trade-specific costs

[1]Sherif, Nazneen. "KVA: banks wrestle with the cost of capital." *Risk*, 02 Mar 2015 http://www.risk.net/risk-magazine/feature/2395869/kva-banks-wrestle-with-the-cost-of-capital; [2]Numerix

Empower your decision making with Numerix

Risk Technology Rankings 2015 WINNER

Managing trade profitability with a complete understanding of the costs associated with the trade lifecycle is critical. Learn more about the XVAs and how market participants are empowering their decision making with Numerix. Read our whitepaper, "Integrating Risk into Pre-Trade Analysis." Go to **www.numerix.com/risktechrank2015/xvapuzzle**.

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