Risk publications

Structured products AMERICAS AWARDS 2016

Technology Vendor of the Year

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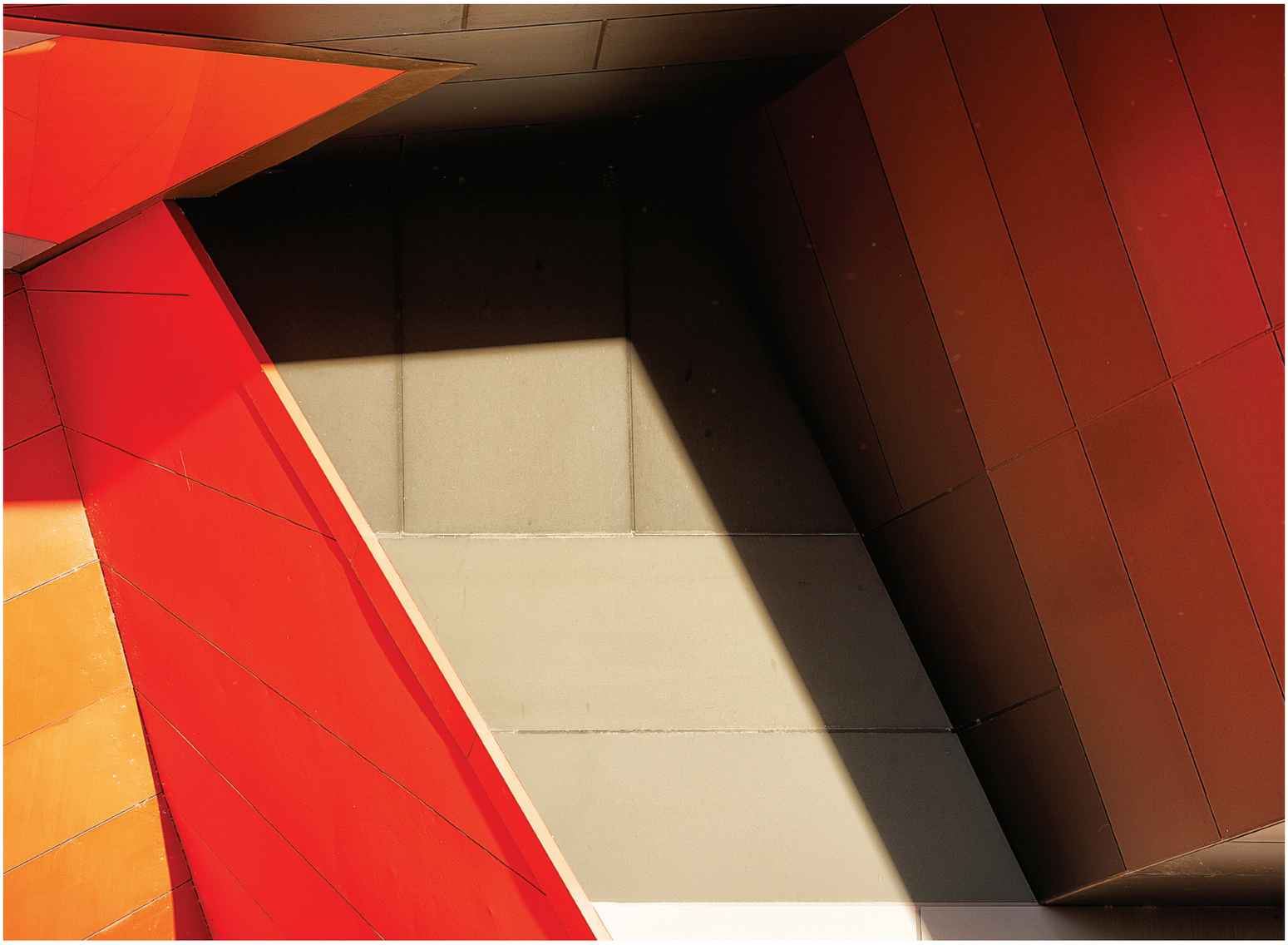

numerix

Show of strength

Structured product issuers in North and Latin America are used to dealing with uncertainty. But even by these markets' standards, 2015 proved a roller-coaster year.

In the US, manufacturers scrambled to adapt to sweeping regulatory reforms while facing the challenges of an unpredictable rates environment and resurgent volatility. Latin American markets, meanwhile, had to cope with wild currency swings and tepid economic growth – a climate rarely favourable to structured products sales.

Firms that proved their mettle in the face of adversity were the big winners in this year's *Structured Products* Americas Awards. Credit Suisse was crowned North America house of the year for scoring a number of successes in the tricky environment. It managed this while simultaneously winding down its US private bank, which cut off a crucial distribution channel for the Swiss issuer's paper. Last year, the bank increased structured note issuance by 4% and secured a 20% growth in exchange-traded note assets under management, despite the market as a whole declining by roughly the same amount.

Credit Suisse also reaped the rewards of years of patient work forging new partnerships with registered investment advisers and external wealth managers. This year saw it complete its onboarding of every major private bank in the US, and strike a deal with Wells Fargo to distribute certificates of deposit linked to one of its proprietary indexes, filling a troublesome hole in its issuance roster.

In Latin America, BNP Paribas is named house of the year, thanks to its efforts developing the Brazilian market for structured certificates, known locally as certificado de operacoes estruturadas (COEs). The French bank pioneered a pricing system for third-party distributors of its COEs in the hopes of presiding over an issuance boom in the near future. It is also selling COEs referencing multiple underlyings through its own local private bank in order to stoke the market.

The shifting investment trends of the US's lucrative baby boomers offer ripe opportunities for issuers to expand their product ranges. Sales of fixed indexed annuities (FIAs) are soaring as US retirees search for alternatives to the once all-conquering variable annuity, which has seen its reputation tarnished by reports of high fees and poor performance.

Every issuer hopes to ride the FIA wave, but it is JP Morgan that scooped the plaudits, thanks to the launch of Nationwide's New Heights annuity, which credits investors with returns linked to the US bank's proprietary Mozaic index. This product's success earned the US firm the deal of the year award and also helped it land retail structurer of the year.

Elsewhere, Societe Generale Corporate & Investment Banking scooped the institutional structurer award for its strong capabilities in collateralised financing. A host of clients testified to the bank's prowess in building credit lines, loan facilities and letters of credit underpinned by a variety of atypical assets.

The risk manager of the year award was claimed by Barclays. A responsive attitude to incoming legislation and supervisory initiatives led to a number of divestitures and restructurings in 2015 that place the UK bank in a stronger position to navigate the regulatory minefield to come.

This year also saw Richard Maile of JP Morgan awarded *Structured Products*' inaugural outstanding contribution prize. This is due to his tireless efforts honing new US tax laws relating to equity-linked investments included in Section 871(m) of the Internal Revenue Code. Sources close to the drafting process say he was "enormously helpful" in developing the so-called substantial equivalence test that will help sweep a host of equity-linked structured notes out of scope of the new rules.

Congratulations to these and all our winners. We look forward to receiving nominations for next year's awards process in January 2017. ■

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Numerix has proven itself adept at getting tools in place before customers need them. This has come in handy as the structured products market came to grips with the phenomenon of negative rates, which began in some parts of Europe in 2014.

This was a particular problem for structured products with embedded interest rate options, as the most widely used lognormal model for valuing the derivatives assumes rates cannot go below zero.

Banks have therefore looked to two modelling options. First, they can shift the strike, by taking the negative interest rate and adding a buffer that takes it into positive territory, in a process called shifted lognormal. Second, they can use a normal or Gaussian model, which allows rates to move from the positive to negative side with the same probability.

Numerix helps clients by providing a plug-and-play solution that allows them to switch to a shifted lognormal or normal model. This is made possible by a separation of the model from the scripting. Firms with international operations also find they can be supported by the same platform they use domestically without impacting their modelling capabilities.

"Numerix has been at the forefront of accommodating a negative rate environment," says one user at a US insurer.

The technology vendor also helped clients manage exposures resulting from fixed indexed annuities (FIAs) – which pay the retiree a capped return tied to a proprietary or public index with some downside protections. Sales to retirees have grown consistently since 2012, according to the Limra Secure Retirement Institute, reaching $104 billion in 2015, up from $72 billion in 2012, while the variable annuity sales have fallen to $133 billion from $147 billion over the same period.

This drove up demand for enhanced modelling capabilities, as the way interest is treated in FIAs tends to be more sensitive to model choice than for variable annuities, which can be run on relatively simple models such as Black-Scholes.

"Numerix fits into this area very naturally because we have sophisticated models which capture the dynamics and the pricing much more accurately," says Pawel Konieczny, vice-president of product management for insurance at Numerix in New York. "If you use a simple model such as Black-Scholes, your pricing of those instruments may be 50% or more off."

The firm is continuing to invest in research and development to provide efficient solutions to ever more intensive processes. A good example of this is the firm's work around nested stochastic simulations, which are required by many regulatory regimes – particularly in the US under Actuarial Guideline 43 and C3 Phase 2. This process requires heavy modelling resources, presenting problems from a technology standpoint.

"We are actively conducting more research and developing new advanced quantitative techniques, while staying on top of new developments in the industry," says Dan Schobel, an actuary at Numerix in Princeton, New Jersey.

Dan Schobel, Numerix

Nested stochastic modelling involve brute force Monte Carlo simulations, which requires enormous computing power to support. To speed up the calculation process and save computing resources, Numerix is turning to an emerging mathematical approach called adjoint algorithmic differentiation (AAD).

"Our quantitative research and our quants have been investigating AAD as a method of speedily computing greeks, for example with vanilla instruments, and seeing if we can extend it to more complicated types of instrument to cut down on computation time and the complexity of the nested stochastic problem," says Schobel.

Applying its technology across industries and instruments is not a case of reinvention; the firm has a reputation for being able to work with the specific needs of clients and to offer access to expertise where that gets its clients where they need to go, then use the lessons it has learned to support the rest of its client base.

"They have gone beyond the expectations you would have of a vendor," said one client.

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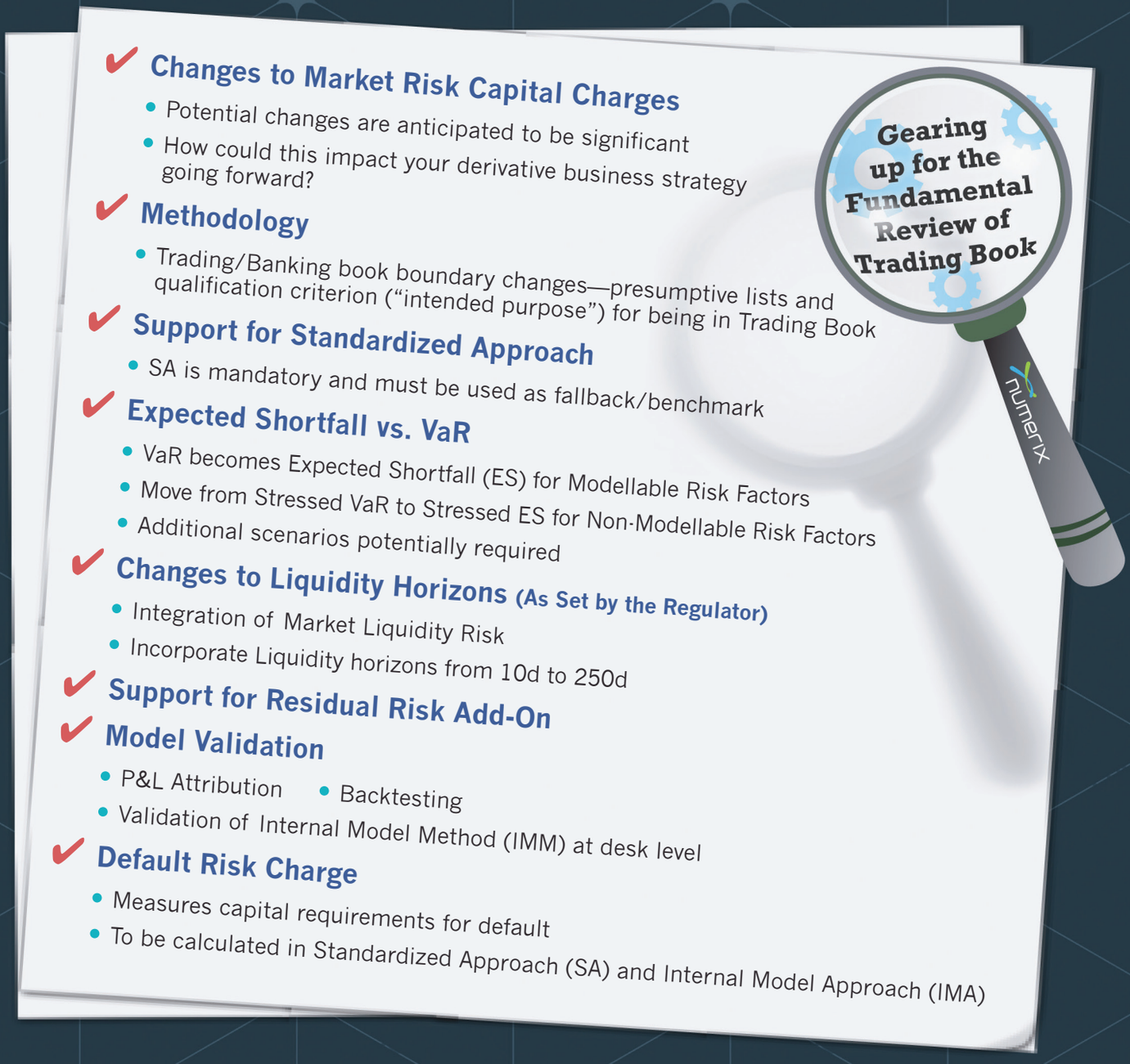
US firms tackling international markets report that the firm's comprehensive offering allows them to work in a range of environments with the minimum of disruption. In some cases, the value is in the relationship.

"We can access quants directly," said one user. "In some overseas markets where there are a lot of bespoke swaps, we are able to put one of our traders directly in touch with Numerix's quant team and talk about local practices." ■

Can your Organization's IT Infrastructure Support FRTB?

A Checklist of FRTB Priorities in Focus:



✔ Changes to Market Risk Capital Charges

- Potential changes are anticipated to be significant
- 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-On

✔ 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)

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Numerix can help. Learn more about how your organization can prepare for the IT, computational and data challenges ahead.

www.numerix.com/frtb/spjunejuly16

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