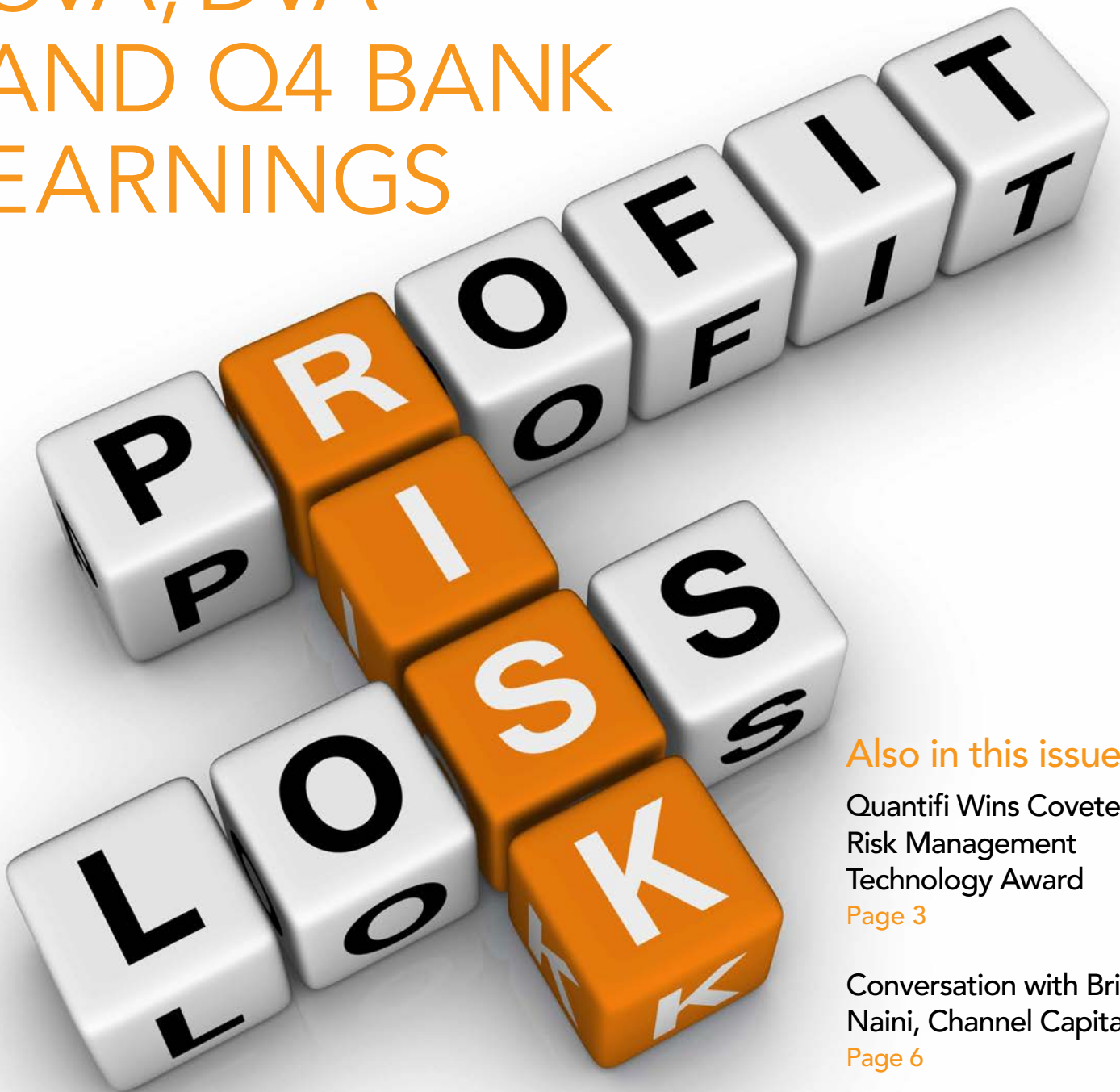


## CVA, DVA AND Q4 BANK EARNINGS



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# MESSAGE FROM THE CEO



Quantifi has had a great start to 2012, having recently won Risk Magazine's 'Risk Management Technology of the Year' award. This is Risk's premier vendor award and one that we feel is a significant accomplishment given the competition, which includes the largest, most established vendors in this space. We received this award with accolades for our first-to-market support for OIS discounting, and CVA/DVA, ease of implementation and customer satisfaction. This is a strong testament to the strength of our ongoing research and our close partnership with clients, who ultimately are the final judges of what we do. Particularly rewarding was the feedback from clients including Jan-Alexander Posth, Head of Fund Derivatives at LBBW who said "Quantifi Risk was quickly installed on our front desk." and "Important benefits the technology has brought are accuracy of results, speed of calculation and an intuitive interface" while Varden Pacific's co-founder, Shawn Stoval said "Their analytics are superb. And our risk system runs fluidly each night — just like it is supposed to". Our support also received top ratings with Shawn describing Quantifi's support as "top notch," while Alex Posth, LBBW, says it is "outstanding."

As we progress into 2012 we see many of the same challenges which are familiar from 2011. Regulator, political and market uncertainties make for a challenging environment. For many market participants this has meant deferring key strategic decisions until uncertainty reduces. 2012 may be the year that this reaches a tipping point and where strategic decisions are made and implemented based on an increasingly clear new market paradigm. This will be an environment where investments in trading and risk management infrastructure will help determine the winners. Effective management and allocation of capital based on risk and return along with a cost-effective, flexible infrastructure will be key competitive advantages.

This month we also roll out our next major release – version 10.2. This release increases asset coverage, enhances existing support particularly for FX and hybrids, improves support for intra-day risk and provides additional out-of-the box data interfaces. This release is just three months after our last major release and demonstrates our unique pace of innovation and our ability to respond rapidly to client needs.

We look forward to 2012 as a year of potential as well as risks and one where we continue to make a difference to our clients' competitiveness and bottom line.

  
ROHAN DOUGLAS, Founder and CEO

# NEWS

## Quantifi Release Version 10.2

Version 10.2 is Quantifi's next major release. This release comprises of several major enhancements including increased asset coverage, enhanced existing support for FX and hybrids, improved support for intra-day risk and additional out-of-the box data interfaces.

## Quantifi Wins Coveted Risk Management Technology Award

The Risk Management Technology Product of the Year award recognises excellence and innovation of technology firms in the fast-changing risk management and OTC derivatives businesses. "We are delighted that Quantifi continues to receive a high level of industry recognition. This award means a great deal to us, especially considering our size compared to other firms operating in our space," comments Rohan Douglas, CEO of Quantifi.

## VTB Capital, Selects Quantifi for OTC Analytics, Pricing and Portfolio Valuation

"We looked to implement a portfolio valuation solution that increased accuracy and flexibility while at the same time minimised operational risk," said Stathis Margonis, Head of Credit Derivatives and Hybrids Trading of VTB Capital, "Quantifi's expertise and ability to deliver a robust tool set for OTC analytics and client pricing were key factors in our decision. Quantifi has already reduced our operational costs and increased our business flexibility by allowing us to focus internal development on other strategic projects."

# EVENTS

## Quantifi Seminar: Counterparty Risk and CVA, What's New? New York City, February 15th

Quantifi & PRMIA have teamed up to present an interactive seminar on Counterparty Risk & CVA, with experienced practitioners offering their opinion on all matters related to this hot topic.

# Quantifi Wins Coveted Risk Management Technology Award



## Risk Management Technology Product of the Year: **Quantifi Risk**

Over the past few years, pricing practices have changed dramatically, in particular to capture the credit value adjustment (CVA) that reflects the chance a counterparty will collapse while owing money on a trade, and to discount collateralised trades at an overnight indexed swap (OIS) rate determined by the currency of the collateral — a simple enough shift in theory, but one that has forced the industry to draw up a standardised collateral agreement in an attempt to remove some of the complexities involved.

With industry practice changing so rapidly, technology providers also have to be nimble when creating or updating pricing and risk management tools that reflect the new reality. Gone are the days when a bank could acquire front-office or risk management systems and allow a couple of years for implementation — the need for accurate pricing and valuation is urgent. Making matters worse, banks have also reined in their spending, so a primary criterion for new technology is cost-effectiveness.

New Jersey-based Quantifi scores highly on all the above, the firm's clients say. It was among the first technology suppliers to support OIS discounting, CVA — and the latter's more controversial twin, debit value adjustment (DVA). Founded in 2002, it cemented its reputation for accurate pricing with its initial credit pricing library in 2006, and has maintained the quality while branching out across other asset classes such as interest rates and foreign exchange. Its technology is relatively light and slots into a bank's infrastructure quickly. And, while a number of banks have implemented Quantifi Risk on an enterprise level, it also offers a cost-effective option for individual business units or smaller institutions.

"CVA, DVA and OIS discounting is the way the market trades nowadays. They permeate everything — not just interest rates, but also foreign exchange, credit and other products. Whether trades are collateralised or uncollateralised, it's the same story — what is your funding cost and what is your credit exposure? Whether you translate that into OIS discounting, CVA or funding value adjustment — it's all very much part of what you need to price on the desk today," says Rohan Douglas, Quantifi's New Jersey-based chief executive officer. As of December last year, the firm had more than 120 clients across the sell and buy sides.

One of those is the Stuttgart-based Landesbank Baden-Württemberg (LBBW), which went looking for a technology framework that would provide consistent valuations for its

portfolio of credit products in 2007 — it says Quantifi was the only supplier that could meet its requirements. The bank licensed the software in early 2008 and was able to install it quickly on its front desk, although full integration with back-office systems and the addition of a high-performance computing grid took some months longer.

"In the specialised area of credit valuation, Quantifi had no real competitors at the time," says Jan-Alexander Posth, head of fund derivatives at LBBW. The bank has since extended its use of Quantifi across other business lines and to risk management. The most important benefits the technology has brought are accuracy of results, speed of calculation and an intuitive interface, says Posth.

Much smaller institutions have also turned to Quantifi for help, including San Francisco-based Varden Pacific — a hedge fund start-up focused on fixed income, particularly opportunities in corporate-backed structured credit. Launched in early 2011, the firm says it needed sophisticated pricing and risk analytics that would match those used at large banks, but from a system that did not require the support of a large bank's IT team. It chose Quantifi, and the implementation took just 18 hours over three days. The fund uses the system for pricing, booking trades, daily risk reports, what-if analysis, profit and loss calculations, historical analysis and tracking jump-to-default numbers.

**"The most important benefit the technology has brought are accuracy of results, speed of calculation and an intuitive interface"**

"After using the software for the better part of a year, I can confirm their analytics are superb. And our risk system runs fluidly each night — just like it is supposed to," says Varden Pacific co-founder Shawn Stoval.

Finally, given the complexity and changeability of today's markets, institutions want more than just software products from their suppliers — they want ongoing guidance and support. Quantifi clients praise the company's balance of business and technological expertise. Overall, Stoval describes Quantifi's support as "top notch", while Posth of LBBW says it is "outstanding".

*First appeared in 'Risk Magazine' January 2012*

# CVA, DVA AND Q4 BANK EARNINGS



DAVID KELLY, Director of Credit and  
 DMITRY PUGACHEVSKY,  
 Director of Research, at Quantifi

**Credit Value Adjustment (CVA) is the amount subtracted from the mark-to-market (MTM) value of derivative positions to account for the expected loss due to counterparty defaults. Debt Value Adjustment (DVA) is basically CVA from the counterparty’s perspective. If one party incurs a CVA loss, the other party records a corresponding DVA gain.**

DVA is the amount added back to the MTM value to account for the expected gain from an institution’s own default. Including DVA (in addition to CVA) is intuitively pleasing because both parties theoretically report the same credit-adjusted MTM value. DVA is also controversial because institutions record gains when their credit quality deteriorates, creating perverse incentives, and the gains can only be realised on default.

Accounting rules mandate the inclusion of CVA in MTM reporting, which means bank earnings are subject to CVA volatility. DVA is also accepted under the accounting rules and banks that include it, and by doing so must continue to include it going forward, add their own credit spread as a source of earnings volatility. To mitigate CVA volatility, as well as hedge default risk, many banks buy CDS protection on their counterparties. Hedging DVA is not as straightforward. Since DVA increases as the bank’s credit spread widens, it is equivalent to the bank being short its own debt. Therefore, hedging involves buying the bank’s own bonds or selling protection on highly correlated institutions, i.e., other banks, since they can’t sell protection on themselves.

DVA became a hot topic when banks announced 2011 Q3 earnings, due to the magnitude and direction of the amounts. Ironically, where large DVA gains substantially impacted earnings, the bank’s outlook improved, thereby tightening its credit spread and generating DVA losses. This article is a sequel to a previous report

entitled ‘CVA, DVA and Bank Earnings’, which attempted to dissect the Q3 DVA results and make some predictions about Q4. Here, we will analyze the recently reported Q4 DVA results.

### Q3 DVA Review

Most banks reported large DVA gains for the third quarter due to significantly wider credit spreads. The following table displays Q3 DVA results reported by the five largest U.S. banks:

Bank	Jun CDS (bps)	Sep CDS	Δ CDS	DVA Gain (bln)
BAC	158	426	268	1.700
C	137	319	182	1.888
GS	137	330	193	0.450
JPM	79	163	84	1.900
MS	162	492	330	3.400

### Q4 DVA Results

We used the reported Q3 DVA results above to estimate Q4 DVAs. These estimates, along with the actual change in CDS spreads during Q4 are provided in the following table:

Bank	Sep CDS	Dec CDS	Δ CDS	Est. DVA Gain (mm)
BAC	426	413	-13	(82)
C	319	285	-34	(353)
GS	330	332	2	5
JPM	163	147	-16	(339)
MS	492	421	-71	(732)

The estimated DVA in the last column is based on a simple ratio of the change in CDS spread for Q4 divided by the change in CDS spread for Q3 times Q3 DVA. For example, Bank of America's \$1.7bln DVA gain in Q3 came from its credit spread widening 268bps, so 13bps tightening in Q4 should roughly equate to a \$82.5mln loss ( $13/268 * 1.7\text{bln}$ ). Of course, these crude estimates ignore changes in portfolio composition and changes in risk factors other than the bank's CDS spread, such as interest rates, FX, commodity & equity prices, volatilities and correlations.

Since the CDS spreads for all banks except Goldman Sachs tightened, we would expect to see DVA losses for the quarter. The next table shows actual DVA results reported by the banks and differences from the above estimates:

Bank	Est. DVA Gain (mm)	Actual DVA Gain	Difference
BAC	(82)	(474)	392
C	(353)	(40)	(313)
GS	5	-	5
JPM	(339)	(567)	228
MS	(732)	216	(948)

Aside from JPMorgan, the estimated DVAs appear significantly off, although the differences are less than 4% of implied expected exposure for each bank. Certainly, simplifying assumptions about constant portfolios and static underlying market risk factors are responsible for some of the differences but the choice of using CDS spreads, as opposed to bond prices, as the key input to the DVA calculation is a critical issue.

In reality, banks use credit spreads derived from their bonds (or some combination of bonds and CDS) to calculate DVA. The table below shows recalculated DVA estimates using the change in 5-year credit spreads implied from bonds.

Bank	Sep 5Yr Bond	Dec 5Yr Bond	$\Delta$ Bond	Est. DVA Gain (mm)
BAC	495	480	-15	(95)
C	305	310	5	52
GS	330	330	0	-
JPM	233	220	-13	(294)
MS	485	505	20	206

The DVA estimates using bond spreads are generally much closer. Notice that there is significant basis between the bond and CDS spreads in most cases. We will outline why banks use bond spreads and implications of the bond-CDS basis next.

## Commentary

Using bond spreads instead of CDS would seem to compromise a key benefit of including DVA in the valuation of derivative positions. Including DVA along with CVA, also called 'Bilateral CVA', results in both parties reporting the same credit-adjusted value for the position. Using bond spreads compromises that because each party typically uses the other party's CDS spread, not the bond spread, to price CVA. The reason is that CDS is a more effective means to 'replicate' (hedge) credit risk. On the flip side, DVA is more efficiently replicated by buying the firm's own bonds since the firm cannot sell protection on itself. In fact, Morgan Stanley reported that they did buy back some debt during Q4 on their earnings call.

To compound the problem, the basis between bond and CDS spreads, generally wide at the end of Q3, dramatically widened for Citigroup and Morgan Stanley during Q4. The bond-CDS basis is a measure of liquidity risk, as reflected in the diverging bid-offer spreads for bank-issued bonds during Q4. Due to the widening basis, there has been increased interest in pricing liquidity risk through a Liquidity Valuation Adjustment (LVA). Roughly speaking, LVA is the difference between DVA calculated with CDS spreads and DVA calculated with bond spreads.

**“Although Q4 DVA results were relatively small, there could be substantial losses in the future given the relatively high spreads.”**

Even with LVA, the asymmetric pricing problem persists unless LVAs for both parties are exactly the same. There is also research challenging the efficacy of buying one's bonds to hedge DVA. The bottom line is that a standard or 'best practice' for pricing and hedging DVA has not yet been established and we should continue to see swings in this component of bank earnings.

Although Q4 DVA results were relatively small, there could be substantial losses in the future given the relatively high spreads. For example, if the increases in spreads that occurred during Q3 of 2011 were reversed, those large DVA gains would turn into roughly equivalent losses. In a tougher regulatory environment it is reasonable to expect that bank earnings will remain constrained and it is possible that future DVA losses could entirely offset earnings even as credit quality improves. ■



# Conversation with **Brian Naini** Chief Risk Officer

## What is the history and background of your company?

“Channel Capital Advisors LLP (CCA) is a UK based investment manager focusing on credit risk and structured finance transactions. CCA was established in 2006 by its founders and a consortium of European commercial banks. In 2007, CCA launched Channel Capital PLC (CC PLC), an Irish based operating company. CC PLC raised capital by issuing long dated junior and senior rated notes, and secured counterparty ratings from S&P and Moody’s. Despite difficult market conditions from mid 2007 onwards, CC PLC was successful in originating and managing over USD 10 billion of portfolio credit transactions and has generated attractive returns for its investors. More recently, CCA has been exploring opportunities in the regulatory capital space as well as loan portfolio intermediation and structuring term liquidity transactions.”

## Over the course of the past 12 months what do you consider to be the most significant development in the credit markets?

“Markets have become increasingly concerned with the health of peripheral European government finances and governments’ progress in this regard. Lack of market confidence has led to higher interest on government bonds, which has made the task of reducing the debt/GDP ratio amid sluggish economic growth more difficult.

ECB’s response has been to provide increasing amounts of liquidity in the market.

Given the banking sectors reliance on governments since 2008 and the extent of the government bond holdings by the banks, an unstable negative feedback loop has developed that needs to be dealt with.

Long term solutions would require a combination of deleveraging the economy, debt writedowns, austerity measures and painful structural reforms to stimulate growth and reduce fiscal deficits. These solutions take time and would require political will and public support neither of which is guaranteed.”

## What key challenges and/or opportunities does the current environment bring to your business and how do you intend to manage them?

“The banking sector will have to deleverage to comply with the new capital requirements. This would be done through sale of non-core businesses, asset roll offs, asset sales, raising additional capital or risk transfer to other parts of the financial system.

CCA can offer solutions to efficiently transfer credit and or liquidity risk from bank balance sheets to investors. Long term investors can benefit from the increasing demand for capital to earn equity type returns by assuming credit risk of good quality portfolios.

CCA has also been active in intermediating loan portfolios between banks and end investors and has also provided long term funding solutions. We expect to be able to do more of these types of transactions as the underlying rationale from the banks' perspective will persist."

**Q What is your reaction to the changing regulatory landscape. How will it impact the buy-side?**

"Cost of implementing the regulations will put pressure on buy side profit margins especially for the small to medium size funds. Operational and business risks of starting a new fund or running an existing fund below a sizeable threshold will increase. This will allow larger investment managers with better economies of scale to capture a larger market share of assets under management. Some of the costs of the new regulations will most likely be passed on to the investors, putting further pressure on investment returns in an already difficult and uncertain environment."

**Q Do you see a world where investors should seek safety, or a world where investors should look to take on risk to capitalise on significant medium/long-term opportunity?**

"The choice ultimately depends on each individual's risk profile, objectives and financial position. The environment is unusual in that persuasive arguments in favour of diagonally opposite outcomes can be made. References to bi-modal distributions are becoming more common. For example, there is not much of a consensus whether we will have very high or very low inflation in the coming years. Similarly, it can be argued that bonds are expensive but they could also conceivably stay at current low yields for an extended period as it is the case with Japan. Similar points can be made for commodities, equities, real estate etc. The collective impact of fiscal and monetary policy, protracted deleveraging in the economy, new regulations across various jurisdictions, political considerations in Europe and the possibility of Euro break up is highly unpredictable.

"Operational and business risks of starting a new fund or running an existing fund below a sizeable threshold will increase."

"Cost of implementing the regulations will put pressure on buy side profit margins especially for the small to medium size funds."

This has led to a risk on/risk off investment environment where short term tactical positions are taken by investors without much of a long term conviction. Given the prevailing uncertainty, this tactical approach with close monitoring of risk is prudent and I expect that it will continue for a while longer. However, the valuations are cheap in some markets, at least relative to historical measures. Investors with longer horizons and appetite for some volatility might be able to take advantage of these opportunities."

**Q Looking ahead, what market development do you anticipate?**

"I think the deleveraging of the financial sector, government and households balance sheets will continue. Governments will try to, at least partially, inflate their way out of the debt load. The Eurozone will continue to experience stress. Default of one or more countries is widely expected. I would not rule out the case where one or more peripheral countries, faced with unpopular austerity measures, try to exit Euro.

Finally, I am going to go on a limb and think it possible that some basic, unleveraged forms of credit products, such as simple tranching corporate portfolios, will make a comeback in a few years time once central clearing platforms are more developed, the risk management infra-structure of the banks and investors are more sophisticated and banks start switching from survival mode to business expansion mode. These products could serve an economic purpose if properly integrated in a truly diversified portfolio. A parallel could be drawn with interest rate derivatives in mid 1990s when after some market disruptions and well publicised end user losses, the products made a strong comeback albeit with some never to be seen again casualties such as Libor squared and cubed based products." ■

# Quantifi Launches Counterparty Risk and CVA Portal

[CounterpartyRiskManagement.org](http://CounterpartyRiskManagement.org) is a free online information source for professionals active in counterparty risk management and credit valuation adjustment (CVA). It is designed to provide timely industry news, research and information on important issues surrounding counterparty risk.



## Main features include:

- The latest news and data related to counterparty risk and CVA
- Access to information from leading analysts, such as Aite, Celent and Tabb Group
- Interactive blogs and commentary for exchanging ideas and information
- Overview of key regulatory themes, such as Basel III, EMIR, Dodd-Frank, etc.
- Insightful videos from leading financial reporters and market practitioners, paired with a YouTube channel
- A comprehensive list of 'Who's Who' in the industry
- Regular e-newsletter sent to subscribers

# Quantifi Releases Version 10.2

Version 10.2 is Quantifi's next major release. This release comprises of several major enhancements including increased asset coverage, enhanced existing support for FX and hybrids, improved support for intra-day risk and additional out-of-the box data interfaces. A sample of new features:

- New support for money market securities, global bond futures and credit notes with defaultable funding
- Significant improvements to counterparty risk management including fast CVA VaR, AMC pricing of exotics, and improved marginal pricing tools
- Product enhancements for FX option modelling, hybrids modelling, and customised cashflow support
- Improved and simplified intra-day risk generation and reporting
- Expanded data management capabilities to simplify data integration

## Whitepapers

- CVA, DVA and Bank Earnings
- How the Credit Crisis has Changed Counterparty Risk Management
- OIS & CSA Discounting
- Challenges in Implementing a Counterparty Risk Management Process
- Evolution of Counterparty Credit Risk

Request a copy:

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## ABOUT QUANTIFI

Quantifi is a leading provider of analytics, trading and risk management software for the global OTC markets. Our suite of integrated pre and post-trade solutions allow market participants to better value, trade and risk manage their exposures and respond more effectively to changing market conditions.

Founded in 2002, Quantifi is trusted by the world's most sophisticated financial institutions including five of the six largest global banks, two of the three largest asset managers, leading hedge funds, insurance companies, pension funds and other financial institutions across 15 countries.

Renowned for our client focus, depth of experience and commitment to innovation, Quantifi is consistently first-to-market with intuitive, award-winning solutions.

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