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Newsletter | Autumn 2016

IN SIGHT

Technology Trends in Asset Management

Bunge Selects Quantifi

Identifying LIQUIDITY RISK for Financial Stability

Message from the CEO

The title from the recent McKinsey annual report about banks "Wall Street banks need fundamental business model shift" says a lot. They comment that Wall Street firms continue to suffer from weak profits, high costs and strategic uncertainty. These challenges permeate through the financial markets and impact not just the large Wall Street banks but also regional sell side banks and their clients on the buy side.

An increasing cost of business is technology. How all market participants manage their technology costs will be an important determinant of longer term viability and success. Building systems internally that provide no strategic value not only incurs an up-front cost, but more importantly creates a higher longer term support cost that will put a permanent drag on the business. For systems that do not provide any competitive advantage, it makes sense to look objectively at the total cost of ownership and make decisions that are best aligned with the long term goals of the business.

The elements of the McKinsey equation - profits, costs and strategy are not getting easier. Technology is becoming more important, becoming more complex and more expensive, and changing rapidly. The impact of FinTech on the capital markets has been lagging but many think we are at a tipping point. Strategic uncertainty is also now increasingly impacted by political uncertainty with the US elections and Brexit. All these elements point to the importance of making the right decisions around technology.

This issue of Quantifi Insight reflects the diversity of Quantifi's clients. The cover story summarises a recent whitepaper on the important subject of liquidity risk written jointly with Sol Steinberg from OTC Partners. Liquidity is often a primary cause of failure for capital market firms and managing liquidity risk will be increasingly important - particularly as quantitative easing programs decline over time. Also in this issue, James Lowry from State Street shares his insights on how big data, regulation and technology are creating a pivotal point in our industry. The final article is a summary of our work with Bunge. Bunge is one of the world's largest agribusinesses. They are rolling out Quantifi's counterparty risk solution across over 40 countries.

In the coming weeks, Quantifi will be hosting its Fall series of conferences in London and New York.
I hope you can join us.

Rohan Douglas, CEO, Quantifi

Cover Story

Identifying Liquidity Risk for Financial Stability

The global financial crisis highlighted the importance of liquidity in functioning financial markets. Pre-2008, market participants received easy access to readily available funding and were ill-prepared for events that transpired during the credit crisis. Failure to adequately assess and manage liquidity underpinned major market turmoil triggering unprecedented liquidity events and the ultimate demise of financial institutions previously thought too big to fail. Looking ahead, effective risk management strategies and frameworks must address the major issues that compromised firms during the drawdown. Liquidity should not be viewed as a short-term operational issue, but as a central component of long-term business strategies.

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Bunge – A Leading Agribusiness (Client Case Study)

To further enhance its counterparty risk management capabilities, Bunge's credit risk group began an initiative to implement an enterprise-wide approach to credit risk management. The decision process involved evaluating specialist commodity risk systems, capital markets risk systems, leading credit rating agencies and internal build options. Bunge selected Quantifi because of its expertise and capabilties in this space.

News

FCO Advisors Selects Quantifi as Core Pricing and Risk Management Replacement

"Quantifi has a strong track record within the buy-side space and is known for their pricing and risk management capabilities. When compared to other providers, Quantifi's blend of modern technology with mature functionality positioned them as an excellent choice for our business. We have no doubt that Quantifi will add value to our business." Hector Negroni, Co-Founder, Co-CEO and CIO, FCO Advisors

Quantifi Develops Commodity Credit and Counterparty Risk Management Solution with Leading Global Commodity Firm

"We evaluated a number of commodity risk specialist technology providers and decided on Quantifi, given their expertise and capabilities in this space. We've been pleased with Quantifi's ability to exceed our expectations in developing a world-class credit and counterparty risk management tool customised to our specific needs." Rick Bernstein, Senior Director, Global Credit Risk & Insurance, Bunge Limited.

Quantifi Partners with Intex

"Our partnership with Quantifi allows our common clients to seamlessly leverage Intex's strong structured fixed income cashflow capabilities directly within Quantifi's advanced risk management functionality. We are excited to offer this fully integrated solution to our mutual clients." Jim Wilner, VP, Intex Solutions, Inc.

Events

WBS 12th Fixed Income Conference

12th-14th October 2016

The Dynamics Driving Capital Markets

Quantifi New York Risk Conference

9th November 2016

TECHNOLOGY TRENDS in Asset Management

James (J.R.) Lowry, Head of State Street Global Exchange in EMEA, was guest speaker at Quantifi's summer breakfast briefing. J.R. shared his perspective on how big data, regulation and technology advances are driving industry change. He also provided insight into what we might expect the buy-side to look like in coming years and what this means for technology professionals. The following article is a summary of J.R.'s presentation.

The financial services industry is unquestionably in the midst of a high change, one that has the potential to radically re-shape the industry in the coming years. The current changes feel disruptive because they are coming in a range of forms all at once.

New Big Data

Data and digitisation kind of go together. As more devices are getting digitised, the internet is connecting more devices and more data is being captured. For example think how much data you store on your cell phone or on a Fitbit monitoring your vitals. All of these connected devices are producing increasing volumes of data and it's the variety of this data that's going to have a huge impact over the next 5-10 years in this industry.

This non-market data is very different to the market data provided by data providers. This is the data that comes off a sensor in a cornfield; that gives you a sense of what the soil and moisture is like. Data that can be used to predict how that crop is going to grow. As that data comes to market, investors are going to have to figure out how to mine it and understand what value there is in it. Some of it is going to be useless from an investment standpoint, but some will have investable value. Separating that signal from the noise, with more data coming, is going to be a challenge for a lot of investment firms.

There has been an increase in investment going into firms that are aiming to aggregate data and use overlays, like machine learning, to help interpret data. With these developments, there is going to have to be a range of new analytical tools as it is impossible for humans to digest all this new data themselves. This balance of man and machine will continue to tilt more towards machine, although not fully. Part of what is making this possible is that storage is continuing to get cheaper and cloud computing is more accessible than ever.

> This balance of man and machine will continue to tilt more towards machine, although not fully.

The investment management space is in the early days of big data, relative to other areas of financial services and other industries. There are a lot of companies in the industry struggling to manage the data they have. Firms are now processing and generating data for analytics, regulatory reporting, client reporting and research purposes.

Regulatory Change

Regulation is having an incredible impact on the industry. The most significant for this industry is probably the changes made to capital requirements. Whilst capital requirements effect the banks more directly than the buy-

side, it is hard to be isolated from their impact. These requirements, including Basel III and stress testing, are ultimately forcing banks to rethink how they see their balance sheet. Banks are getting out of businesses that are not practical from a return on capital standpoint. Clients who are not bringing them enough volume or are too capital intensive to serve are being let go.

The industry has also seen a shift in business models in the sell-side, particularly around derivatives trading. A huge amount of money is traded on derivatives, predominantly through interest rate swaps, and this now has to move via central clearing, which has to be compliant with Dodd Frank, EMIR etc. This is reducing the margin requirements and potentially shifting the "too big to fail" problem on to the clearing houses. Margin requirements are going up, which means that everyone is limited in terms of what they can do from a trading perspective, and trading strategies have to change to align with that.

Regulators are also asking for more data, whether that is coming from MIFID II, Priips, Solvency or EMIR. This is forcing managers to be more transparent about fees, in response to the Retail Distribution Review or similar legislation. Managers have to be more open about their fees and inherent risks in the product as well as demonstrate that the product is appropriate for the consumer. Ultimately, all of these regulations are about de-risking the industry and this is not going to scale down in years to come.

Market conduct is another factor that is becoming a big issue. The UK has seen the Financial Conduct Authority and Prudential Regulation Authority go after the bad players and this has definitely been a big wakeup call for the industry. Over the past 4-5 years regulators have been getting a lot tougher which, in turn, has triggered an increased spending on compliance.

All of these factors combined have a drag on capital and increase operating costs, which is made even harder if you are operating across multiple jurisdictions. This is especially true in Asia and, potentially, the UK in the wake of Brexit. From a technology perspective, it has fuelled the interest in RegTech which will, ultimately, lead to an improvement of basic risk management tools.

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Advancements in Technology

Finally, this man/machine balance will continue to change, whether it is in the form of algorithms or longer term machine learning-based algorithms, predictive analytics, artificial intelligence (AI) or robotics being applied to manual processes. Think about how much of the industry still operates by paper, fax or email and how much reconciliation is done in the industry. This is where the industry will change significantly over the coming 5-10 years because firms cannot afford to have their own or build/develop their own technology. Firms need to follow the new trends and keep up-to-date with the latest technology. For example, building little pieces of functionality – the microservices connected via APIs – and the flexibility to string them together to do different things. It looks like this model is going to be a big trend over the next few years.

> Firms need to follow the new trends and keep up-to-date with the latest technology. For example, building little pieces of functionality - the microservices connected via APIs - and the flexibility to string them together to do different things.

For example, the Amazon Echo product takes the App store construct further in that it is voice-driven and can string together a set of IT microservices to perform a task for you. There are going to be more instances where one will be able to instruct a machine to carry out a set of commands and this will be more dynamic than just programming a computer to run the same script day in and day out. This will be one of the big changes over the coming years, which will also help reduce costs.

So who is likely to benefit? Firstly, the industry needs to be more technology centric, whether it be in your trading activity, the way you run your analytics or the way you do distribution. In turn, this implies that platform-based businesses will be at an advantage, as they are, essentially, creating technology driven utility functions for the industry. Whether that is a platform for portfolio management, distribution or automating trading activity, these platform businesses and the shift into the retail space are going to create a battle for the desktop.

Alibaba is a great industry example in terms of how fast they got to $100bn into their money market fund. We do not know whether the technology firms like Apple, Alibaba, Google, Facebook (amongst others) are going to want to go neck deep into our industry as it is regulatorily complicated. However, it is likely that they will want to play around the edges and look to collaborate with firms that are able to deal with that regulatory space. This is where technology firms come into play. These firms have customers who like them and they have influence over that. If Apple wanted to get into the mutual fund business, there would be a bunch of people pouring money into the Apple mutual funds, even in the absence of there being any performance track record. These companies are going to find ways to collaborate with the industry and the same is true with the FinTech start-ups.

From an asset management perspective, there is going to be a bifurcation in the industry where you will see either big and cost effective or small and boutique. The risk will be being caught in the middle, which could be between $50-100bn in assets. Lowry refers to a telling conversation at a client meeting in the US where the client said "we don't think $500bn is big enough anymore". They were looking to use greater forms of utilities so they could get to a trillion dollar of assets to be up to scale. So, you have this bifurcation that is fuelled by the technology investment required to operate effectively.

End note

This industry is change resistant in many ways as evidenced by the fact that State Street still get about 50,000 facsimiles a week. At the same time, the industry is resilient and always finds a way to move forward.

We are at one of these pivotal points in the industry that has been fuelled by technology and regulation. It is about how all this is coming together at once that is driving the disruption that happening in the industry.

CASE STUDY

Bunge Selects Quantifi's Credit and Counterparty Risk Management Solution

Bunge Limited ("Bunge") is a leading agribusiness and food company with integrated operations that circle the globe, covering over 40 countries with approximately 35,000 employees.

Background

To further enhance its counterparty risk management capabilities, Bunge's credit risk group began an initiative to implement an enterprise-wide approach to credit risk management. Bunge was looking for an enterprise-wide credit and counterparty risk management solution to support their business across 40 countries globally. Primary Requirements included:

- A standardised approach to counterparty evaluation
- A consolidated view of counterparty exposures vs limits
- Real-time risk monitoring and reporting
- Pre-deal credit exposure checks
- 24/7 availability
- Simplified data management, high security and seamless integration

Selection Process

Bunge conducted a rigorous process to select the right system. The process involved evaluating specialist commodity risk systems, capital markets risk systems, leading credit rating agencies and internal build options.

The selection process, which involved a proof-of-concept, resulted in Bunge choosing Quantifi for its expertise in quantitative analysis and system development, along with the ability to collaborate to develop a solution addressing Bunge's specific business needs.

Deployment

Quantifi's multi-tier architecture has been a key touchstone throughout the project, allowing use of the latest technology best practices and high performance computing techniques, all whilst offering a uniquely scalable and extendible infrastructure that can seamlessly fuse with existing systems and processes.

> "We evaluated a number of commodity risk specialist technology providers and decided on Quantifi, given their expertise and capabilities in this space. They've also proven to be skilled collaborators, able to closely coordinate with our team."
>
> **Rick Bernstein**
> Senior Director, Global Credit Risk & Insurance
> Bunge Limited

The Solution

Quantifi's CCRM (Commodity Counterparty Credit Risk Management) solution is a single enterprise-wide credit and counterparty risk management solution for global commodity trading firms. The solution empowers management to more easily implement the firm's credit policies across regions and businesses globally. Firm wide, all participants involved in the credit decision making process can use the platform to make optimum credit decisions whilst managing the associated risk.

Identifying LIQUIDITY RISK for Financial Stability

The global financial crisis highlighted the importance of liquidity in functioning financial markets. Pre-2008, market participants received easy access to readily available funding and were ill-prepared for events that transpired during the credit crisis. Failure to adequately assess and manage liquidity underpinned major market turmoil, triggering unprecedented liquidity events and the ultimate demise of Bear Stearns, Lehman Brothers and other financial institutions previously thought too big to fail.

The global financial crisis has promoted a renewed focus on managing liquidity risk. Lack of liquidity, in the midst of all the panic, left many firms unable to raise sufficient funding, forcing them to liquidate their positions at huge losses, further fuelling the fear of a systemic crisis. In an attempt to avert a meltdown of the banking system and deep global economic recession, central banks had little choice but to inject liquidity into the financial markets. Almost 10 years on, awareness of liquidity risk has become the norm and its management essential to the viability of financial institutions. Looking ahead, effective risk management strategies and frameworks must address the major issues that compromised firms during the drawdown. Liquidity should not be viewed as a short-term operational issue, but as a central component of long-term business strategies.

Market and Funding Liquidity

Liquidity risk is the risk that a company or bank may be unable to meet short-term financial demands. This usually occurs due to the inability to convert a security or hard asset to cash without a loss of capital and/or income in the process.

There are two distinct types of liquidity: market and funding. Market Liquidity incorporates key elements of volume, time and transaction costs (bid/offer spread).

> "Liquidity should not be viewed as a short-term operational issue, but as a central component of long-term business strategies.

These dimensions equate to the amount of assets that can be sold at any time within market hours, with minimum losses and at a competitive price. Market liquidity can be difficult to measure depending on the asset type, whether the asset is fungible, and the time horizon to liquidate the asset.

Funding Liquidity (cash flow risk) is the ability to settle obligations on short notice. To do this cash can be raised by the sale of assets or new borrowing. Accurate and timely forward cash flow projections is crucial to effective liquidity management to maintain adequate funding.

The Collateral and Liquidity Challenge

Institutional Liquidity

One of the core functions of banks is to take deposits and turn them into loans and securities. In order for this to go well, banks have to maintain enough cash on hand to meet their usual rate of individual withdrawals when depositors want access to their cash. If banks fail at this, they may have to sell assets quickly to raise cash. That can depress the market for what is being sold if participants perceive a crisis in certain asset classes.

Central banks have often stepped into provide short-term liquidity to banks under duress, resulting in a shift on how banks treat certain types of lending, therefore, leading central banks to consider providing liquidity to nonbank financial firms. Private lenders and credit providers have stepped into certain parts of the market where banks have stepped back as a result of new regulation. This has helped maintain liquidity, but it also means that central banks may have to expand their lending policies accordingly.

Market Liquidity

Market supervisors have recently increased the minimum amount of cash on hand that banks must hold in order to keep overall risk to the market at a minimum. The way a bank determines how much capital must be kept back is through the use of the Supplemental Leverage Ratio, outlined in the Basel banking rules. Certain derivatives and repo rules further add to the amount of liquidity banks must have at any time.

The goal of these changes was to guard against underestimations of risk over time. One of the critiques to emerge out of the great financial crisis was that both banks and regulators viewed most banking activities as innately low-risk activities and, thus, allowed risk-based requirements to remain too low.

Central Bank Liquidity

Central banks have taken on an increasing role in guiding financial markets through monetary policy. Radical policy shifts, like negative interest rates, have created new realities for market participants, raising questions about the role of high-quality collateral and its availability. Demand for high-quality collateral is likely to continue to increase as more derivatives activity happens on exchanges, requiring counterparties to post low-risk collateral

"Central banks have taken on an increasing role in guiding financial markets through monetary policy.

in order to mitigate credit risk. Central bankers will be under pressure to ensure the availability of high-quality collateral to keep markets moving.

Transaction Cost Analysis (TCA)

For investors that are interested in bonds, they need to take into account transaction cost analysis. Essentially, this means evaluating a potential bond investment on certain intrinsic characteristics such as how long the bond will take to mature. If an investor plans to trade a bond before it reaches maturity, measuring liquidity can be tricky. Using volumes alone may not take into account adverse circumstances like forced selling.

A comprehensive TCA will look at factors like price sensitivity, transaction volume and any excess return. Taking all of these measurements together can give you a better profile of a given bond or basket of securities regardless of how often they trade.

Portfolio Construction

Liquidity risk can be difficult to hedge against because unlike other forms of risk, it cannot be diversified away. But, it's not all bad news. Historically, illiquidity happens in the market on an episodic basis. So, if investors hold a security to maturity, they won't pay the liquidity cost as they might if they move in and out of a security before maturity. Asset managers can also help by creating portfolios that handle illiquidity in certain asset classes such as private debt, whereby creating a specific portfolio sleeve that will capture the premiums for holding these assets to maturity, while adding diversification to the overall portfolio.

Swing Pricing

Swing pricing is another mechanism asset managers can use to provide a smooth return to investors. When an asset manager uses swing pricing, they will move the Net Asset Value (NAV) of a portfolio up or down depending on the direction of net asset flows. In practice this may mean that investors enter a product at a slightly higher price, but to redeem the cost to exit will be lower. Investors will have to be savvy about why they redeem from a fund with swing pricing because the use of the mechanism can create a slightly higher tracking error, even if the risk profile of a given fund hasn't changed.

> Liquidity risk can never be fully mitigated. It has to be managed along with market, credit and other risk factors.

Regulatory Impact

Sell-Side Regulation

Sell-side institutions are obliged to comply with multiple regulatory requirements across the various jurisdictions in which they operate. Supervisory authorities, including the Basel Committee, the Committee of European Banking Supervisors and the Federal Reserve Bank have issued guidelines in an effort to establish sound, system wide liquidity management practices.

Basel III introduced two key ratios – Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) – to provide guidance to banks to ensure short-term and long-term financing remains resilient, which the Fed have also gone on to adopt.

The LCR metric aims to ensure that "a financial institution maintains an adequate level of unencumbered, high quality assets which are sufficient to cover outflows in a defined survival period, 30 days, under acute short-term stress scenarios defined by the regulators:

$$\text{LCR} = \frac{\text{High Quality Liquid Assets}}{\text{Total Net Liquidity Outflows over 30 days}} \geq 100\%$$

HQLA

Level 1

No haircut - Stocks of liquid assets includes cash, sovereign bonds, and central bank reserves.

Level 2

Comprising no more than 40% of total HQLA

Level 2A

Subject to a 15% haircut - includes certain government, covered, or corporate bonds

Level 2B

Subject to 25-50% haircut - Includes lower-rated corporate, RMBS, and some equities. Comprising no more than 15% of total HQLAs.

Total net cash outflows: total cash inflows minus total cash outflows in a stressed scenario for 30 days

Buy-Side Regulation

Fund managers are under increasing pressure to ensure strong liquidity risk management practices are being carried out. Regulators such as the SEC, FCA and ESMA have outlined guidelines on liquidity risk management practices that funds should apply.

Additionally, the Securities and Exchange Commission (SEC) proposed a set of liquidity risk management requirements for registered open-end mutual funds and ETFs. The proposal is part of a broader SEC agenda to modernise the Investment Company Act of 1940 ('40 Act) and to address perceived systemic risk concerns relating to the asset management industry.

Mitigating Liquidity Risk

Liquidity risk can never be fully mitigated. It has to be managed along with market, credit and other risk factors. Given its tendency to compound other risks, it is almost impossible to isolate liquidity risk.

The best line of defence is a strong liquidity policy and management framework where liquidity risk is robustly measured, monitored and managed. Liquidity management should be viewed as an integral part of a firms' long-term enterprise strategies. This should include a plan to manage risk both in normal operating environments as well as under the occurrence of extreme liquidity risk circumstances.

Managing Liquidity Risk – A New Approach

Liquidity needs to be managed on an ongoing basis. This demands a new approach to liquidity risk management, as firms need to adopt a more holistic view to meet their regulatory compliance and business objectives. To do this effectively, firms are increasingly relying on technology providers that can provide a single integrated solution, incorporating reporting, scenario modeling to support stress testing, data management and analytics. With advanced analytics, such as stress testing, scenario analysis and survival horizons, firms can capture and measure exposures that may impact their liquidity position. Monitoring liquidity risk positions has increased the emphasis on automation and timeliness of data integration. Automated and customisable reporting, that allows segmentation and tagging of positions based on the liquidity in your corresponding markets, is also necessary. This information can be utilised to quantify and report liquidity risk at different levels of aggregation.

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www.quantifisolutions.com/whitepapers

There is no one set model to manage liquidity. However, firms that adopt an enterprise risk management framework that addresses the market, credit and liquidity will be able to manage risk based with an integrated view of all the risks impacting their portfolio. As a leading provider of risk, analytics and trading solutions, Quantifi has strong liquidity risk management capabilities.

Conclusion

Liquidity represents the ability to rapidly trade large amounts of securities with minimal impact on market prices. Regulation is placing new limits on market making activities within banks and forcing asset managers to account for liquidity risk when constructing client portfolios.

As the credit crisis demonstrated, ignorance of liquidity risk is dangerous. Sourcing and transferring risk in the secondary market has consequently become difficult - which should be a concern to all market participants. Credible analysis of transaction liquidity and associated cost is difficult, but not impossible. New technologies offer a deeper understanding of liquidity drivers in the market and, in turn, can help improve market activity. Asset managers can and should prepare for future liquidity events, but preparation alone will not prevent extreme volatility of asset prices. Fixing the structural imbalance and fortification of market infrastructure is what is truly required.

Written by
Rahul Patel
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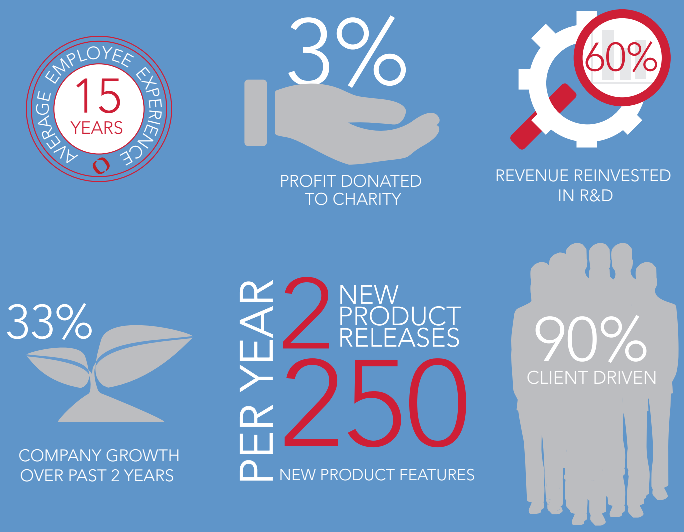
Sol Steinberg
Consultant, OTC Partners

Quantifi Voted Best Middle-Office Solution in the FTF News Technology Innovation Awards

"Quantifi is honoured to have won the best middle office solution award. Making significant investment in our products and working closely with our clients has proven to be a great formula. As demands on our clients increase they look to partner with a solution provider that grows with them as the market changes. We work closely with our clients to provide them what they need and are early to the market with functionality that helps with the growing challenges they face"

Pradiv Mahesh, Director, Americas Sales

Quantifi in Numbers



Micro-services: The New Building Blocks of Financial Technology

Webinar Recording

Risk technology is undergoing its next wave of innovation with the new breed of a single integrated solution. Forward looking firms are realising that, in the new world, the ability to achieve scale, reliability and flexibility will be a winning factor.

www.quantifisolutions.com/microservices-webinar

Whitepapers

- Microservices: The New Building Blocks of Financial Technology
- Indentifying Liquidity Risk for Financial Stability
- Cost of Trading and Clearing in the Wake of Margining
- A First View of the New CVA Risk Capital Charge
- IFRS 13: CVA DVA FVA and the Implications for Hedge Accounting
- Sell-Side Risk Analytics - RiskTech Quadrant®
- OIS & CSA Discounting
- Buy-Side Risk Analytics - RiskTech Quadrant®

About Quantifi

Quantifi is a specialist provider of risk, analytics and trading solutions. Our award-winning suite of integrated pre and post-trade solutions allows market participants to better value, trade and risk manage their exposures and responds more effectively to changing market conditions.

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 40 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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