quantifi

Newsletter | Spring 2021

IN SIGHT

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Message from the CEO

On the back of a difficult 2020, most people approached this year with a sense of optimism that it would be better than last. We are not out of the woods yet, but there are reasons to be optimistic as the availability of vaccines become more widespread and national government initiatives to support both economic and social recovery.

Through a year of turbulence, I am delighted with how the Quantifi team have supported each other and our clients. The health and safety of our staff have been our top priority, and at the same time we have successfully executed on our strategy. Despite the pandemic, our growth has continued at pace.

At the heart of our strategy is the smart use of modern technology, and the cover story is one example of this. In partnership with Intel, Quantifi has accelerated the performance of large-scale XVA workloads by increasing the performance of CPU and improving the efficiency of I/O. By making smart investments in new technology, we have been able to significantly enhance the risk management process for our clients and help them respond to the complex and ever-changing financial markets.

One of the most profound themes to have confronted the social, political, and economic systems is climate change. Most governments and global investors consider climate change to be one of the world's greatest challenges, posing a substantial risk to both our way of life and to investment portfolios. In this issue Michael Azlen, founder and CEO of Carbon Cap Management, provides an insight into the developments as well as risk and return drivers in the carbon markets. Also in this issue is expert analysis from ComTech Advisors on Quantifi's activities and solutions for the commodities markets.

Our new business growth in 2021 has continued on the momentum generated in 2020 with a number of new client wins across our entire product range. We have made significant investment in our global operations. To meet regional demand in Asia-Pacific we have expanded our Sydney office. We are also growing our partner program so we can drive long-term value creation for clients, strengthen distribution networks, and accelerate sales growth.

As the market continues to evolve, we are pleased that clients recognise the benefits of using Quantifi and our ability to support their business for the long term.

Rohan Douglas, CEO, Quantifi

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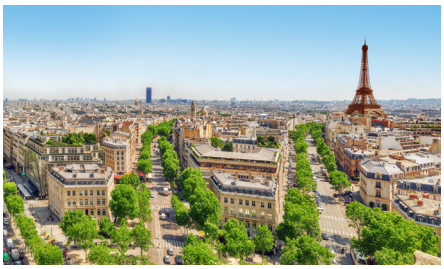

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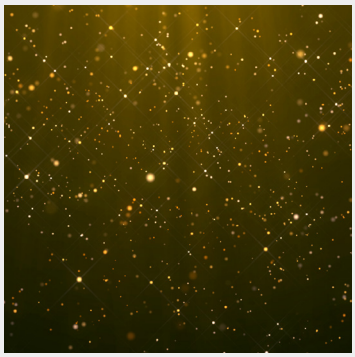
LFIS required a new front-to-back analytics and portfolio management solution.

Carbon Cap Selects Quantifi to Support Carbon Emissions Investment Strategies

Carbon Cap Management LLP (Carbon Cap), a London-based environmental asset management firm, has chosen Quantifi to support its carbon emissions investment strategies. Their mission is to raise awareness about climate change and provide solutions related to the capping and reduction of carbon dioxide emissions.



Quantifi Wins Best Portfolio Analytics System at the bobsguide Software & Partnership Awards

The bobsguide Software & Partnership Awards recognise leading market participants across the financial services industry. Companies were judged on market engagement, the strength of recent technology developments, client experience and how well the solution stands out in the marketplace.

Quantifi Named Best Buy-Side Product at Waters Buy-Side Technology Awards 2020

For the second consecutive year, Quantifi has won three awards at the Waters Buy-Side Technology Awards - Best Buy-Side Pricing/ Valuation Service, Best Overall Buy-Side Product and Best Buy-Side Portfolio Analysis Tool. These awards recognise market-leading technologies designed to manage the challenges that buy-side firms face.

RISK MARKETS TECHNOLOGY AWARDS

Quantifi Wins Best Pricing & Analytics: Fixed Income, Currencies and Credit

"We are excited to win the Pricing & Analytics award for a second time. In a very competitive field, Quantifi has retained its leadership position. Quantifi's fast pricing capabilities and sophisticated cross-asset analytics give our clients the confidence to make informed investment decisions."

Quantifi has won Best Pricing & Analytics: fixed income, currencies and credit at the Risk.net Markets Technology Awards for the second time. These awards reflect the contribution made by technology providers that support enterprise risk management, credit and operational risk for the listed, OTC derivatives and cash markets.

The winners were selected by a panel of 12 judges made up of Risk.net editors and senior individuals from leading firms from across the industry including; Credit Suisse, Chartis Research, RSA Group, eCo Financial Technology, Liberty Group, Fintech Strategic Advisors, DZ Bank and Legal & General Investment Management. More than 170 entries were received and shortlisted.

After a volatile year triggered by COVID-19, market participants are facing new challenges - particularly in fixed income and credit. Recent events have disrupted the financial markets, but have also created opportunities for growth. This has driven FinTech providers like Quantifi to evolve and accelerate innovation to help clients reduce risk, maximise returns and improve resilience. By leveraging new technology like AI and data science, Quantifi is able to provide clients with new levels of capability and flexibility.

Quantifi's integrated solution delivers cross-asset trading, front-to-back operations, position management, market, credit, counterparty and liquidity management, margining and regulatory reporting. As well as supporting key regulatory and industry practices, Quantifi applies the latest technology innovations to provide new levels of usability, flexibility and ease of integration. This translates into faster time to market, lower total cost of ownership and significant improvements in operational efficiency.

"We are excited to win the Pricing & Analytics award for a second time. In a very competitive field, Quantifi has retained its leadership position. Quantifi's fast pricing capabilities and sophisticated cross-asset analytics give our clients the confidence to make informed investment decisions. With firms making major investments to harness large quantities of information, a key focus for Quantifi, over the past 12 months, has been the integration of data science into our platform. This enables clients to do more complex data analysis with larger data sets, and to produce flexible reporting with clear, actionable results," comments Rohan Douglas, CEO, Quantifi.

GROWING SUCCESS IN COMMODITIES

Patrick Reames, Founder of Commodity Technology Advisory, recently visited with the team at Quantifi to get a briefing and a demo covering the firm's activities and solutions in the commodities markets.

This article first appeared on Commodity Technology Advisory's CTRMCenter™ and is written by Patrick Reames, Founder of Commodity Technology Advisory.

Originally founded in 2002 as a risk and analytics provider to the financial trading markets, the company quickly built a global presence in the capital, asset management and insurance segments. Quantifi indicates they service over 180 clients across 40 countries, and includes in its client roster dozens of regional, national, and global scale banking, investments and trading firms, including 2 of the top 5 ag trading companies.

It is these two global ag trading companies that pulled Quantifi closer to the commodities markets as both sought to enhance their ability to manage credit risk and analytics. With these firms' support, Quantifi fully embraced the challenge and successfully expanded their product footprint to address the valuation complexities unique to the commodity markets. Now, with several hedge funds and global-scale commodity trading firms using their products to manage Counterparty Credit Risk and analytics in the softs and ags markets (and with plans to move into metals and energies), Quantifi has become a recognized player in the industry.

Known as the Commodity Counterparty Risk Management (CCRM) solution, Quantifi's product provides exposure vs limits reporting, what-if analysis, and stress testing, and includes PFE and CVaR analytics. After the demo of the product, we walked away impressed with the system's usability and screen designs. In particular, their capabilities and user interface in the area of scenario testing was perhaps as strong as we've seen, with well laid-out screens and solid supporting graphics. Additionally, the product showed very good workflow management capabilities to better manage counterparty on-boarding, including establishing relationship hierarchies and credit grading/updating, and in collateral management. The CCRM workflow engine also delivers a comprehensive audit trail. Though, like most of its competing solutions, it does not yet incorporate the emerging need for climate risk measures, it does manage country risk, concentration, and portfolio-level risks.

CCRM makes extensive use of dashboards that are tuned for specific user roles. We were shown one, for example, that was aimed at the CRO. This

aids in usability by allowing certain roles to see in a relatively intuitive way only the information they need to see to manage their job and to drill down into that information. Reports can also be user configured and maintain a similar look to these user-focused dashboards.

Though CCRM is currently somewhat limited in its commodity coverage (as each commodity has unique functional/valuation requirements), for many softs and ag commodities it does appear to be a strong offering (though currently with limited CSA coverage). And, with their stated commitment to additional development, we do expect them to also be competing well in the energy and/or metals markets in the not-too-distant future.

Commodity Technology Advisory

E/CTRM Market Research, Analysis and Insights

ACCELERATING THE PERFORMANCE OF LARGE-SCALE XVA WORKLOADS

To assist in the pricing for the cost of dealing with a counterparty in a derivative transaction, the markets have developed various metrics including CVA, DVA, FVA, ColVA, KVA, and MVA - collectively known as XVAs.

XVAs are highly complex calculations, combining the intricacies of derivative pricing with the computational challenges of simulating a full universe of risk factors. Given the strategic importance of XVA, banks require enhanced capabilities and modern infrastructures to calculate the required credit, funding, and capital adjustments.

Another key challenge is how to efficiently calculate XVA sensitivities. While sensitivities have always been an important component of XVA desk risk management, the FRTB-CVA framework published by the Basel Committee in 2015 has made managing regulatory capital a priority for banks globally. This has further driven the demand for calculation of sensitivities. Banks that are unable to calculate CVA capital charge using the sensitivity-based FRTB approach will have to use the rather punitive formula-based basic approach.

Why is it important to make XVA calculations faster?

XVAs are simulation-based calculations. The market standard is to use Monte Carlo (MC) simulations, with each covering thousands of paths across a large number of future time steps. For example, a MC simulation of 2000 paths across 78 time steps for a portfolio of 40,000 trades requires up to 6.24 billion calculations that on average produce over 10GB of compressed result data. Sensitivities, stress tests, and attribution calculations can increase the number of calculations by an order of magnitude. XVA-related calculations are by far the most computationally resource-intensive for a bank. Hence banks are looking for quantitative as well as technology-based solutions designed to optimize performance.

Calculating XVA

The demand for higher performance has highlighted the need to get the most out of the latest generation of software - a distributed architecture that supports the heavy demands of big data provides a number of benefits when dealing with large, complex portfolios. The main benefits include scalability, reliability, and resilience. However, the use of distributed computing for calculating XVA also presents a number of challenges, mainly in regard to I/O performance and (central processing unit) CPU processing.

While distributing the workload increases the calculation performance, it comes at a cost of transporting and persisting results to the data store. Furthermore, to compute the results the calculations reference data loaded from the data store. Measuring XVA is a highly complex process that requires having to save and manipulate large amounts of data. Having access to large-scale distribution and big data technology to minimize I/O is important. XVA calculations are also time-critical, which requires a high-performance CPU to handle the workload.

A number of factors influence the speed of XVA computations, including the size of the portfolio, the amount of market data, and the configuration of the Monte Carlo simulations themselves.

The number of simulated market variables, the amount of time steps to simulate, and the number of simulation paths are the configurations that have the greatest impact on performance. Naturally, as any of these are increased, the calculations become more complex. The most expensive factor in the performance of these simulations is the number of simulation paths.

The demand for higher performance has highlighted the need to get the most out of the latest generation of software - a distributed architecture that supports the heavy demands of big data provides a number of benefits when dealing with large, complex portfolios.

All these factors result in XVA calculations being very resource-intensive, even when using a distributed computing architecture.

Quantifi is built on a modern microservices architecture using a distributed computation system. The distributed architecture allows results to be calculated quickly in parallel and has the benefit of being able to scale up to meet increased workloads.

CPU versus I/O

For the Quantifi XVA use case, performance analysis can be broken down into two main components: CPU performance (time spent on calculations) and I/O performance (time taken to transfer and store the data involved in the calculations).

Inherent to the performance of Quantifi XVA is a push-and-pull relationship between CPU and I/O. As calculations complete faster, the time spent on I/O to transfer and save the results increases. This challenge is made more prevalent using a distributed architecture, as adding more computing resource also increases the amount of results to be transferred and stored at the same time. Similarly, if calculations become more complex, then the size of the results to store and transfer will increase and affect how quickly I/O can complete.

To determine the impact on Quantifi XVA calculations, a dummy portfolio was used to profile the performance of the system with a sample set of XVA calculations. While the calculations completed, system-wide performance metrics were collected to serve as a set of baseline numbers to be examined and compared with those of subsequent tests. To determine the performance of I/O, another set of calculations was completed, with the results persisted to memory.

The results in Table 1, highlight that approximately 23 percent of the total duration is spent on the I/O required to save the results. The first step was to improve the write I/O performance.

Runtime with persistence (mm:ss)	Runtime without persistence (mm:ss)	% decrease
9:01	6:59	23

Table 1: XVA calculation durations with and without persisting results to disk

Intel recommendations and test results

In an effort to improve the write I/O performance and reconcile the difference between the durations collected with and without persisting to the data store, Intel recommended that the CPU on the data store be upgraded to the Intel's latest 2nd Generation Xeon Scalable processor.

Intel's new CPUs also supports Intel Optane Persistent Memory, an innovative storage technology in which specialized memory provides a faster alternative to traditional disk storage. As a first step, Quantifi replaced the existing 1st Generation Xeon Scalable processor on the data store but kept the storage technology constant and collected the same metrics as the previous test.

1st Gen CPU runtime (mm:ss)	2nd Gen CPU runtime (mm:ss)	% decrease
9:01	7:11	20

Table 2: XVA calculation durations on 1st Gen CPU vs 2nd Gen CPU

2nd Gen CPU runtime with persistence (mm:ss)	1st Gen CPU runtime without persistence (mm:ss)	% decrease
7:11	6:59	2

Table 3: XVA calculation durations on 2nd Gen CPU vs 1st Gen CPU without persisting results to disk

The result indicates that switching to the 2nd Generation CPU and persisting results to the disk yielded similar performance when compared with using Intel's 1st Generation CPU and persisting results to memory. Comparing this test to the previous test where results were persisted to memory shows that the change in hardware alone improved the I/O performance of writes considerably. In terms of total duration, the gap in performance between a set of calculations with persistence and a set of calculations without persistence has dramatically reduced using a 2nd Generation CPU.

The previous table demonstrates that the change from 1st Generation to 2nd Generation Xeon Scalable processor reduced the I/O time for the calculations from 23 percent to 8 percent. This is a significant boost to I/O performance from just a CPU change.

2nd Gen CPU runtime with persistence (mm:ss)	2nd Gen CPU runtime without persistence (mm:ss)	% decrease
7:11	6:37	8

Table 4: Total duration on 2nd Gen CPU with and without persisting results to disk

Leveraging Intel Optane

Quantifi conducted another test, utilizing the new Intel Optane persistent memory for the data store, to determine whether Optane could further enhance the I/O performance using the 2nd Generation CPU given that the read and write speeds are considerably faster than that of the non-volatile memory express (NVMe) drive previously used.

The first results using Optane were not very promising in terms of the overall runtime. The runtimes between NVMe and Optane were very similar, and across all samples fell within the margin of error for elapsed time. As such, the conclusion from this set of results was that performance remained consistent for 2nd Generation CPU with NVMe versus 2nd Generation CPU with Optane.

A more positive outcome was the dramatically improved throughput of the I/O, having switched from NVMe to Optane. The runtimes were very similar from NVMe to Optane, which is likely due to the result data not being large enough to max out the NVMe write speed for long. In a more expensive environment using more computing resources or a larger number of simulation paths, there could be a greater performance benefit from using the Optane drives.

2nd Gen CPU + NVMe (bytes/sec)	2nd Gen CPU + Optane (bytes/sec)	% decrease
567,351,788	1,377,171,632	143

Table 5: Maximum recorded write pressure on 2nd Gen CPU using the NVMe and Optane

The table above shows Optane writes data over 130 percent faster than NVMe. Intel claimed that if the size of the results grew larger than NVMe's max throughput, then the Optane calculation durations would stay consistent while the NVMe durations would become larger. This highlights that Optane provides for greater system scalability. When combined with the other I/O performance benefits seen with the 2nd Generation processors, these new CPUs appear to be very attractive in the long term for large-scale XVA calculation workloads.

Additional testing was carried out to determine the effects of running with a greater amount of computing resources and an increased number of simulation paths on the system. Metrics collected on a consistent hardware set-up demonstrate the effect of increasing the number of simulation paths by increments of 1000. As the number of simulation paths increases, both the average disk writes and duration jump by a sizeable margin.

Number of simulation paths	Average disk writes (bytes/sec)	Duration (mm:ss)	% increase average disk writes from 2000 paths	% increase duration from 2000 paths
2000	73,053,585	7:09	-	-
3000	83,965,349	9:17	13	23
4000	95,406,641	11:10	23	36
5000	108,578,910	12:54	33	45

Table 6: Average I/O throughput comparison using variable amount of simulation paths

In a similar fashion, increasing the amount of computing resources for these calculations also has a direct impact on the average disk writes. Raising the amount of distributed computing resources ups the number of writers persisting results to the data store. The calculations also generally complete faster using more compute cores up to the point where the I/O becomes the limiting factor.

The previous table demonstrates that the average I/O pressure increases as we continue to add compute nodes. Combined with how additional computing resources enable calculations with more simulations to complete faster, it is evident that the I/O pressure will continue to scale up with just both of these variables increasing. The I/O can scale up by other factors too, such as increasing the size of the portfolio. If all these factors were to scale up, eventually the average throughput would surpass the maximum on NVMe and Optane will become the most performant storage option.

Number of compute cores	Average disk writes (bytes/sec)	% increase between average disk writes from 176 cores
176	77,651,854	-
248	85,761,755	10
320	93,116,821	20

Table 7: I/O throughput comparison using variable amount of compute node cores

Conclusion

The various tests carried out in this whitepaper demonstrate that leveraging Intel's latest hardware can accelerate the performance of large-scale XVA workloads by increasing performance of the CPU and improving the efficiency of I/O.

The tests also revealed that the use of Optane persistent memory over more traditional storage offers greater scalability if the XVA workload becomes more expensive. Furthermore, the number of simulations, the amount of computing resources, and portfolio size all stress the system's I/O performance when writing to the data store. This makes upgrading to Intel's latest generation processor much more compelling, as it provides the ability to scale with portfolio size, computing resources, and calculation complexity.

INTERVIEW WITH MICHAEL AZLEN, CEO CARBON CAP MANAGEMENT

In 2018, Michael Azlen, a senior investment professional, began to research climate change and environmental investment, focussing on carbon pricing and Emissions Trading Systems (ETS). He is now the Founder and CEO of Carbon Cap Management, which aims to raise awareness about climate change and provide solutions directly related to the capping and reduction of carbon dioxide emissions.

What led you to found Carbon Cap Management?

After 25 years in the investment industry and 16 years as a guest lecturer on the London Business School's graduate programme, I sold my asset management company and became deeply imbedded into research on climate change. In 2018, I enrolled in the climate change programme at the LSE Grantham Research Institute on Climate Change. This is where I learned about "Cap and Trade" Carbon Emissions Trading Systems (ETS), which have been one of the only successful policy instruments for addressing climate change. These ETS markets are now large and liquid: today trading more than $1 billion per day across the cash and derivatives markets.

This proprietary research has shown that carbon as an asset class exhibits very attractive returns, modest volatility and low correlation to other asset classes.

I wanted to analyse the properties of carbon as an asset class but quickly learned that the data was not readily available, so I hired a PhD student from the LSE and we constructed an accurate historical time series on multiple carbon markets and produced an academic paper analysing the returns, volatility and correlation of carbon. An extract of our research has been published by the CFA Institute. This proprietary research demonstrates that carbon exhibits very attractive returns, modest volatility and low correlation to other asset classes

Since the Paris Agreement was signed in 2015 and ratified in 2016, carbon prices have increased significantly, and in three of the past four global equities market drawdowns, carbon has generated positive returns. The research led to the formation of Carbon Cap as an environmental asset manager with a mission to raise awareness of climate change and provide solutions directly related to capping and reducing emissions. We have launched the World Carbon Fund which has dual objectives of delivering uncorrelated absolute returns and a direct climate impact.

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

The most significant developments in the carbon markets has been a growing global awareness of the need to increase climate ambition in order to reach Paris Agreement goals. Existing carbon markets are expanding and new carbon markets are launching with more than a dozen countries now considering the launch of their own carbon market. One of the biggest developments has been the launch this year of the Chinese carbon market covering more than 4 billion tonnes of annual emissions.

Last year the European Commission proposed a tightening of the EU's 2030 emissions reduction targets and set a goal of at least 55% reduction below 1990 levels. The European Parliament then voted through an even stronger target of 60% below. The European (EU) ETS also entered its fourth phase, in which the market is tightened by default. The financial sector's rising climate awareness has also led to a substantial growth of interest in the EU ETS by financial participants who are looking benefit from higher prices and/or to hedge climate policy risk inherent in their traditional portfolios.

In the US, the RGGI market has been bolstered by the reintroduction of New Jersey and the entry of Virginia. This expansion is also indicative rising societal focus on climate change and a growing recognition of the need for US state-led climate action even though the 2020 US election's unprecedented focus on climate change and the Biden administration have promised decisive action on the issue. In the California Carbon market, structural issues have led to increasing calls by independent review committees and even the State Senate to increase the stringency of the market to deliver meaningful emissions reduction.

The most significant developments in the carbon markets has been a growing global awareness of the need to increase climate ambition in order to reach Paris Agreement goals.

Looking ahead, what market developments do you anticipate?

Compliance carbon markets are established by policy makers to reduce emissions by creating a financial incentive to invest in lower emission technologies. As the price of carbon increases, so does the incentive to switch to new production methods. Economists calculate that in order to meet the Paris targets, the carbon price would need to rise significantly from current global average levels of $20 per tonne. Forecasts for the Carbon price required by 2030 range from $60 to $120 per tonne. This backdrop, which is likely to receive increasing support from policy makers, provides an attractive context for investing into these markets, which we anticipate will continue developing around the world as new countries launch ETS and as existing markets expand their sectoral scope.

For example, China's National ETS began its launch in 2021 and a number of other countries are considering national ETS: Mexico is in its pilot phase and Colombia, Indonesia, Vietnam and the Ukraine have begun work. Similarly, we expect the further development of regional carbon markets, such as the Pacific Climate Alliance, the US state-led Transportation and Climate Initiative, and the likely medium-term linking of the UK's new ETS with the EU ETS. Further down the line we predict that nations will increasingly seek to link their carbon markets as lower cost abatement opportunities get used up domestically.

What are the risk and return drivers in the carbon markets?

We believe that the outlook for carbon prices over the next decade is very positive. However, carbon markets can exhibit high volatility driven by a range of "market" and "policy" factors. Carbon markets are designed by policy makers to reduce emissions, and therefore policy decisions which change or update the rules of the market will affect the price. Some markets have a price cap or price floor, or supply adjustment mechanisms which allow the regulator to change the supply of carbon in response to market imbalances.

As the price of carbon rises, it stimulates companies to find low carbon solutions so policy makers, environmentalists and investors generally agree that they would like to see a higher carbon price.

There are also a wide range of other factors which impact carbon prices over the short run such as economic activity, demand for energy, commodity prices, energy sources, technology developments, and additional policy features such as the rules governing free allowance allocation.

Over the longer term, three main drivers underpin a forward-looking risk premium.

- Policy: carbon markets are designed to stimulate emission reductions through higher prices. As the price of carbon rises, it stimulates companies to find low carbon solutions so policy makers, environmentalists and investors generally agree that they would like to see a higher carbon price.
- Structure: carbon supply is reduced each year. This makes carbon unique among commodities since the supply declines yearly by a known amount while demand, which is linked to economic growth, has the potential to rise.
- Increasing awareness: new scientific evidence and the increasing frequency and intensity of extreme weather events are driving increased awareness among policymakers and the public.

LFIS CAPITAL SELECTS QUANTIFI FOR BROADER ASSET COVERAGE IN FRONT-OFFICE ANALYTICS AND RISK MANAGEMENT

The investment management industry is in a period of rapid change fueled by regulatory development, shifting investor preferences and the rise of new technology. To succeed in an increasingly dynamic and complex landscape, investment managers are exploring new and/or different avenues. In this environment, firms are looking for solutions like Quantifi to enhance how they do business.

LFIS CAPITAL

THE CLIENT

LFIS Capital (LFIS) is a leading Paris-based quantitative asset manager. Launched in 2013, LFIS has $11 billion[1] of assets under management for a global client base. LFIS combines investment banking and asset management expertise to deliver innovative cross-asset, cross-instrument alternative, multi-asset and dedicated funds and solutions.

TIME FOR CHANGE

As with other asset classes, LFIS takes a multi-strategy, multi-asset approach to credit investing. Its systematic, value-driven process seeks to capture dislocations and inefficiencies across the range of credit markets and instruments with optimised implementation. LFIS wanted to continue expanding its diversified credit strategy and required a new front-to-back analytics and portfolio management solution (PMS) able to support this initiative and successfully navigate complex credit markets.

[1] Unaudited data. Assets under management as of December 31, 2020. The EUR/USD exchange rate used is based on the December 31, 2020 Fininfo closing rate i.e. 1 EUR equals 1.2301 USD.

SELECTING THE RIGHT PARTNER

To support the growth of LFIS' sophisticated trading strategies, an end-to-end solution capable of providing the necessary performance measures and advanced analytics for modelling credit indices and tranches was required. Robust risk functionality was also essential.

LFIS was seeking a provider with extensive experience supporting sophisticated investment managers with the tools required to make informed investment decisions, improve transparency and manage risk.

Key requirements:

- Support for the full spectrum of structured credit and fixed income products
- The analytical capability to model complex deals in granular detail
- Extensive pre-trade analytics
- Robust risk functionality, including assessing risk on tranches and accurately handling defaults
- Ability to calculate hVaR on complex assets
- Ad-hoc analytical capabilities to determine the risk associated with complex deals
- Detailed risk reporting, including the ability to drill down to the single name level
- Seamless integration with LFIS' internal booking system

DELIVERING CHANGE

LFIS selected Quantifi based on its ability to deliver on all of these key requirements. Quantifi's solution leverages on a powerful, stable technology platform and rich functionality to deliver best-practice portfolio management, reporting and pre-trade analysis and support all of LFIS' risk management requirements. Quantifi's record of successfully implementing technology solutions for investment managers was another important deciding factor.

With Quantifi's front-to-back solution, LFIS further strengthened its overall risk infrastructure and improved operational efficiency. Front-office decision- making is now supported by the ability to analyse an expanded scope of complex products. The team's ability to access the same model library in XL and Python is also an advantage. Front-office quantitative teams are now better positioned to carry out ad-hoc analysis and the overall firm now has a consistent, single source of information. LFIS' risk management team relies on Quantifi's solid infrastructure for greater precision in risk outputs and the ability to offer enhanced transparency to investors and regulators.

REALISING VALUE

Quantifi has made an important contribution to LFIS's ability to swiftly and efficiently develop and go-to-market with additional trading strategies while, at the same time, reducing the time drain on LFIS' internal teams.

THE LEADING PRICING & STRUCTURING SOLUTION

For investment managers, Quantifi delivers cross-asset trading, front-to-back operations, position management, enterprise risk management, and regulatory reporting all on an integrated platform.

Key benefits include:

- End-to-end solution for traders, quants and portfolio managers
- Sophisticated risk analytics combined with flexibility and usability
- Access to the same model library in XL and the PMS for a single source firm-wide
- Transparent risk reporting
- Enhance operational efficiency
- Modern, flexible technology that can easily scale to support growth
- Seamless interface with existing infrastructure

As well as supporting the key regulatory requirements, Quantifi applies the latest technology innovations to provide new levels of usability, flexibility and ease of integration. This translates into dramatically lower time to market, lower total cost of ownership and significant improvements in operational efficiency.

Data Science Enabled Portfolio Management Solution

Quantifi's data science platform provides clients with the ability to do complex data analysis and flexible reporting using Python, Jupyter Notebooks and other popular data science tools. Integrated with Quantifi's proven portfolio management solution, users benefit from complex client-driven analysis, strategy back-testing, ad-hoc portfolio what-if analysis - all using mixed data sets from diverse sources.

https://www.quantifisolutions.com/data-science-enabled-portfolio-management-solution

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Whitepapers

- How to Accelerate XVA Performance
- The IBOR Transition: Challenges and the Road Ahead
- The Impact of COVID-19 on Credit Markets
- Managing Liquidity Risk in Times of Stress
- How to Manage Cryptoasset Credit Risk

www.quantifisolutions.com/whitepapers

About Quantifi

Quantifi is a 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 respond 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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