

October 2015

Hedge Funds & Derivatives Risk 2015

How to make risk management more strategic

Will regulation help or hinder derivatives risk?

AIFMD and the mutation of risk management



In this issue...

03 How to make risk management more strategic

By James Williams

05 AIFMD and the mutation of risk management

Interview with Alan Picone, Kinetic Partners

09 ODD comes under the microscope

Interview with Kristin Castellanos, Deutsche Bank

11 A new view into hedge fund operational risk

By Chris Kundro, Wells Fargo Global Fund Services

12 Will regulation help or hinder derivatives risk management?

By James Williams

15 A fully hosted and customisable risk solution

Interview with Ittai Korin, PortfolioScience

18 Delivering real-time risk that reflects the speed of the market

Interview with Martin Toyer, TFG Financial Systems



Publisher

Editor: James Williams, james.williams@globalfundmedia.com

Managing Editor (Wealth Adviser, etexpress & AlphaQ): Beverly Chandler, beverly.chandler@globalfundmedia.com; **Online News Editor:** Mark Kitchen, mark.kitchen@globalfundmedia.com

Deputy Online News Editor: Leah Cunningham, leah.cunningham@globalfundmedia.com

Graphic Design: Siobhan Brownlow, siobhan.brownlow@globalfundmedia.com

Sales Managers: Simon Broch, simon.broch@globalfundmedia.com; Malcolm Dunn, malcolm.dunn@globalfundmedia.com

Marketing Administrator: Marion Fullerton, marion.fullerton@globalfundmedia.com

Head of Events: Katie Gopal, katie.gopal@globalfundmedia.com

Head of Awards Research: Mary Gopalan, mary.gopalan@globalfundmedia.com

Chief Operating Officer: Oliver Bradley, oliver.bradley@globalfundmedia.com

Chairman & Publisher: Sunil Gopalan, sunil.gopalan@globalfundmedia.com

Photographs: iStock; NYC & Company

Published by: GFM Ltd, Floor One, Liberation Station, St Helier, Jersey JE2 3AS, Channel Islands
Tel: +44 (0)1534 719780 **Website:** www.globalfundmedia.com

©Copyright 2015 GFM Ltd. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publisher.

Investment Warning: The information provided in this publication should not form the sole basis of any investment decision. No investment decision should be made in relation to any of the information provided other than on the advice of a professional financial advisor. Past performance is no guarantee of future results. The value and income derived from investments can go down as well as up.



How to make risk management more strategic

By James Williams

One aspect to operational risk, which can have a meaningful impact on performance, not to mention the integrity of the manager, is valuations. According to Deutsche Bank's Global Prime Finance group's third annual Operational Due Diligence Survey, asset valuation is in sharp focus for 38 per cent of investors surveyed. Unilaterally, respondents said they would review a fund's valuation policy during their ODD review whilst 78 per cent stated they would verify the valuation procedure during the on-site review.

Asset valuation is inherently a function of the quality of data inputs. A SunGard survey last year revealed just how important risk pricing is in the front office. Some 20 per cent of respondents attributed its importance to calculating credit valuation agreements (CVAs), 31.8 per cent to initial margin requirements and 22.7 per cent to funding valuation adjustments and other funding costs. Admittedly, this survey centred on banking entities but the issues apply equally to the asset management industry.

"Operational risk management is something I always think about holistically; market, liquidity, credit, operating and residual risks," says Andrew Kandiew, Head of Operational Due Diligence at K2 Advisors, a leading fund of hedge funds manager with USD10.3 billion in AUM. "This is risk management but one that focuses more on qualitative aspects when evaluating the manager.

"Operational due diligence has become much more important post-08. Your ODD has got to have teeth and you've got to demonstrate that it works. In terms of pricing and valuation, we will always seek to fully understand the investment strategy of any manager; what they are trading and the instruments they hold in their portfolio. From there, we consider a manager's pricing and valuation risk. We look at a host of operating risk factors, and valuation is a key one.

"For example, we will look at whether a manager has written valuation procedures that are germane to the strategy, as well as a governance structure around the

valuation process i.e. does the manager have a valuation committee? What is its composition? How are issues escalated? Who are the people and infrastructure used to support pricing and valuation? Are there clear segregation of duties within the firm?" explains Kandiew.

Such is the importance of operational risk that strategically, K2 Advisors uses a completely independent approach whereby Kandiew does not report to the head of research. Research is charged with the responsibility of looking for potential investment managers and whilst there is a spirit of collaboration within K2 Advisors, "my role is independent of the research team. I have a veto that I can exercise, and at times do, when they recommend managers to invest with," adds Kandiew.

Model risk

The accuracy of a manager's valuations ultimately depends on the quality of data inputs but it also depends on the valuation model being used. Valuation sounds like it should be precise but valuation models rely on using different assumptions such that it can only ever be an approximation. There is some acknowledgement that mark-to-market and mark-to-model techniques do not necessarily provide accurate numbers.

The level of uncertainty that comes with using a valuation model is known as model risk and it is something that risk managers have become far more focused on recently. Knowing the limitations of a model has been an important step change.

A big part of operational risk could therefore stem from valuations. To make this more strategic, risk managers should review their models and the implicit assumptions that underpin those models on a periodic basis; stress testing, sensitivity analysis etc.

"We service a number of private debt strategies and when it comes to doing valuations you have to do a great deal of sophisticated credit analysis (model behaviours, weighting assignments etc)," says Alan Picone, global head of risk consulting and infrastructure at Duff & Phelps' Kinetic Partners division.

Model risk is something that Dr Lawrence Wormald, COO and head of research, SunGard APT, gets asked about a lot.



"Operational risk management is something I always think about holistically; market, liquidity, credit, operating and residual risks."

Andrew Kandiew, K2 Advisors

Take the Black-Scholes model for pricing options as an example. One of the greatest financial innovations ever, the assumptions used in Black-Scholes are actually very simple and as such bear no resemblance to reality. This has led to Black-Scholes being applied back to front.

Instead of saying, "I think this is the volatility and therefore this is the price of the option", SunGard APT uses the market to price the option and then works backwards to determine what the volatility should be. This is referred to as implied volatility.

"We have to make sure that we can justify the implied alpha when clients look at their portfolio. We believe in Black-Scholes, precisely because we use it backwards not forwards; which would otherwise create model risk," explains Wormald.

One important development to help improve risk management is to integrate liquidity modelling into risk models. This is something that SunGard has recently rolled out within APT.

When there are shocks to prices there are often shocks to liquidity as well and it becomes harder to close out positions, or indeed put on positions. That ability to combine price and liquidity shocks in the model has therefore become critical.

"The key is to provide intuition rather than just an arbitrary number. A few years ago people came up with liquidity-adjusted VaR, which was always a bit bigger than the ordinary VaR. But why? Few could understand it. We are trying to improve on that by using a factor model for liquidity risk. It is already being consumed by five or six of our global clients in APT. It satisfies the regulator but more importantly it gives managers extra information to make more informed investment management decisions," confirms Wormald.

Dr Lawrence Wormald, COO and head of research, SunGard



AIFMD and the mutation of risk management

Interview with Alan Picone

Risk managers are making a more conscious effort to not only understand the virtues, but also the limitations, to risk models as they adjust to life under greater regulatory scrutiny, in particular the AIFM Directive in Europe.

Indeed, such is the impact of regulation that it has in effect transformed the risk management function from something that was previously confined to portfolio management into something altogether more holistic.

Alan Picone is a managing director at Duff & Phelps' Kinetic Partners division. He has a broad range of expertise on risk management and given that Kinetic Partners was one of the first firms to obtain a third party AIFM license in Luxembourg, Picone is well versed in understanding the changing dynamics of risk management that hedge funds now face under the Directive.

"We are acting as an AIFM on behalf of external hedge fund managers to help them meet the risk management and compliance challenges of AIFMD and as such are well placed to see what the impact of AIFMD is having on managers. One of the things that we are seeing is a fairly profound mutation of the risk management function," says Picone.

The upshot to AIFMD is that managers are increasingly relying on more systems, processes and procedures, and indeed staff, to remain compliant. The role of risk management must now embrace all dimensions of the fund's value chain: portfolio risk management, operational risk management, liquidity risk as well as the management of risks that have been delegated to third party providers; this is the risk oversight function, which has become an integral part of a manager's aggregate risk framework.

As Picone points out, this requires



Alan Picone, managing director at Duff & Phelps' Kinetic Partners division

understanding the processes and risks of the brokers, custodians, administrators and any other companies that support a hedge fund's operations.

"When you look at risk management from this perspective, and you add to that such things as liquidity management rules, concentration risk rules under the Directive, you can see that the risk management function has become very far reaching as opposed to what it was in the past," says Picone, who adds: "Another key observation is that risk management in the past was viewed as an ex post control, meaning that decisions were taken and then risk management was applied afterwards to measure the potential impact of those trading decisions.

"The AIFMD changes this fundamentally, such that ex ante risk management becomes critical. We see more interaction of the risk management function with the portfolio management function; these have always been embedded to some extent in hedge funds but not to the degree that risk management becomes, so to say, intrusive. It requires a number of critical tasks such as risk attribution, margin-at-risk impact and so on."

In other words, ex ante risk has become more systematic. Some of the larger hedge funds have long had in place robust processes to embed risk management as much as possible into the portfolio decision making process at the pre-trade level. Under AIFMD, all managers are required to adopt this mindset; it is a cultural shift.

A good example of where ex ante risk management has become a major focus would be systematic CTAs. Given that these strategies employ sophisticated trading algorithms to detect market signals and put on positions in the portfolio, there is less involvement by risk teams in the decision making process. However, where risk teams

get more deeply involved is in validating the risk models used by the algorithms.

"I'm generalising here but what we've seen is that the role of risk managers in terms of validating trading models has become much more important. There is more caution being applied to test the resilience of trading models," says Picone.

Caution is no bad thing when it comes to risk management. Nobody is naïve enough to expect risk models to provide a crystal ball into future volatility and whilst AIFMD has amplified the risk function, expectations need to be kept in check. One element of this caution is by being more attuned to the limits of risk models; that is to say, understanding the qualitative risks and trying to avoid being reliant on models that are too simplistic to measure risk.

"The Black-Scholes formula for pricing options was a major breakthrough but it was qualitative and mathematically driven and as such it was viewed as a Golden Rule. It became almost Holy Grail-like," remarks Picone. "All risk modelers now understand that it is far from reality. Models come with limitations as they try to describe the complexities of reality.

"Whereas in the past, such models would have been seen as the ultimate weapon to describing reality, today they are viewed more as a starting point. Models are more prone to be reviewed and critiqued. I think risk managers are more inclined to understand the limitations of their models, and the risks attached, as opposed to believing that their model is a fair description of the world. This is a change in philosophy. Risk management has to work within limits and I think everyone now recognises those limits; risk managers are applying more rigorous governance to their risk models, which you wouldn't have seen 10 or 20 years ago."

Regardless of whether the risk model is ex ante or ex post, the implied assumptions mean that it can only ever produce a risk estimate. In that sense, risk management is like trying to predict the weather; some may say it is even harder, given the true complexity of financial markets. Risk managers are required to somehow quantify the level of risk the fund portfolio is exposed to, without having a complete understanding of the nature of the market.

It is a fantastic challenge.

"Risk managers know that whenever they develop a risk model it is only ever likely to describe some element of reality, but not the full reality. In the past, this acknowledgement of the limitations to risk models was not communicated; the classic example being Black-Scholes. When you look at the underlying assumptions they are completely outside the realm of empirical reality and you have to wonder why this model has been used for so long. The assumptions have nothing to do with reality. The reason it has been used so extensively is precisely because the model is simple.

"My point is that there is now a more conscious attitude towards acknowledging not only the virtues but also the limits of risk models. Risk managers are increasingly mindful when using models to understand, first and foremost, what they don't do rather than what they actually do. And that's an important paradigm shift," posits Picone.

In some respects, the AIFMD has helped push forward the cultural adoption of risk management and broaden its application. Model risk is an important evolution precisely because risk managers do not want to get blinded by the VaR number; nobody wants another Long Term Capital Management event to occur.

"There's now a need to more accurately capture the specific features of financial markets. If you want to benefit from market inefficiencies you need to look at numerous factors and lots of data. For quantitative and systematic strategies, the detection of inefficiencies and the decision making programs are becoming increasingly influenced by risk managers.

"For other strategies, such as equity long/short, risk managers will have a growing influence in guiding the portfolio manager(s) during the investment process. They will provide additional insights and tools to help the front office with respect to risk allocation, risk attribution etc. Portfolio managers want to better understand the risk budget," concludes Picone.

With greater scrutiny of the risk numbers and a willingness to question the limitations of risk models, hedge funds are working harder than ever to operate safely in today's financial markets. ■

4 ► **Protect yourself from failure of imagination**

At SkyBridge Capital, managing risk has always been strategic. It has put significant effort into integrating risk management into portfolio construction to ensure that time and again, the investment portfolio minimises losses on the downside and maximises gains on the upside. Applying a disciplined approach has allowed the SkyBridge flagship fund to outperform in every market sell-off over recent times.

"There are a lot of levers that go in to managing risk. We take a holistic approach to risk management, and continually enhance and broaden our analytical capabilities to aid our portfolio management in generating desired risk-adjusted returns. We are always adding new tools to our risk management tool kit," explains SkyBridge Partner and Head of Risk Management, Tatiana Segal.

SkyBridge's approach to managing risk is to not only rely on looking in the rear-view mirror but to be as forward-looking as possible. This is achieved by using Imagine Software to provide position-level detail within the portfolio in tandem with proprietary tools.

"Broadly speaking, we focus on embedded alpha, while our beta will fluctuate depending on our conviction, with historical ranges around -0.2 to +0.5. Our approach is to continually analyse multiple scenarios of how the risk/reward can play out so that we stay best positioned to extract our targeted compensation, over a full market cycle, for each unit of risk that we take. The Beta expression will change accordingly," says Segal.

"We test the portfolio using both historical and hypothetical scenarios, and while we continually add new scenarios relevant to the current market environment, we remain mindful of what a truly worst case might be. Although we remain constructive, it's important to not grow complacent. That is why we focus on modeling portfolio liquidity assuming multiples of 2008 redemption levels, the highest-ever redemptions we have seen since inception.

"I've heard it said that one of the main problems with risk management frameworks pre-crisis was a failure of imagination. We are trying to learn from that. We built our risk management platform to be rooted in



"There are a lot of levers that go in to managing risk. We take a holistic approach to risk management, and continually enhance and broaden our analytical capabilities to aid our portfolio management in generating desired risk-adjusted returns."

Tatiana Segal, SkyBridge

the empirical data, yet forward looking that consider a wide spectrum of possibilities. It's a delicate balance."

One of the ways that Duff & Phelps' Kinetic Partners division is helping managers to improve their risk management activities, particularly in response to market regulations and reporting obligations under the AIFMD, is to provide an advisory service as part of a wider AIFM solution.

This involves performing a number of model validations – be it algorithms that are used by systematic CTAs, be it risk systems or valuation models.

"We have a proprietary solution for risk reporting; it is a full fledged risk management and risk measurement solution. Typically, hedge fund managers can send us their portfolio which we process in our system and we produce for them the Annex IV report. It captures everything from sensitivities to conditional VaR, expected shortfall and so on.

"This is ideal for managers who want the report first thing in the morning to analyse. Typically this is being done on a daily basis," confirms Picone.

Any time a hedge fund manager uses risk systems, there is often a disconnect between the front office traders and the middle office team, which might be generating a daily report on risk that the investment decision makers do not agree with.

To make risk more strategic, therefore, requires a system that provides intuition as well as an enterprise-level capability. By doing so, managers are able to tell a more coherent story about how they manage risk, thereby enhancing their reputation and asset raising capabilities.

Award winning fund services from a trusted partner

We provide end-to-end fund administration; regulatory, fiduciary and investor services; banking and custody that support an array of assets, strategies and vehicles.

Your complex fund services needs met – with global connectivity, bank-wide collaboration and long-term commitment.

Visit db.com/gtb, email gtb.marketing@db.com or follow us on Twitter @talkgtb for more.

Passion to Perform

Hedge Fund Administrator
of the Year
Global Investor/ISF Investment
Excellence Awards, 2015

Winner of seven fund
administration awards
The Asset Triple A Asset Servicing,
Investor and Fund Management Awards, 2015

Most Innovative Fund
Administrator – over USD 30 billion
HFM Week European Service Awards, 2015

Best Offshore Hedge Fund
Administrator
Hedgeweek Global Service Awards, 2015

Best Fund Administrator – Mutual
Funds, three consecutive years
MENA Fund Managers
Fund Services Awards, 2015

Fund Administrator of the Year –
five consecutive years
Global Investor/ISF Middle East Awards, 2014



ODD comes under the microscope

Interview with Kristin Castellanos

Operational Due Diligence (ODD) has become increasingly important across the alternative investment industry and more resources and attention are being placed on this function. This was one of the main findings from a session on ODD at the recent Global Alternative Investment Management (GAIM) Ops Conference in the Cayman Islands.

Kristin Castellanos of Deutsche Bank's Head of Regulatory Fund Services within its Institutional Cash & Securities Services, moderated a panel on the subject of ODD and how the process has changed over the past decade. She says: "10 years ago, most ODD was conducted around account policies and procedures. But as fund accounting risks have reduced, compliance and IT risks have multiplied."

Today, there is more dedicated focus – and at a higher level – on ODD meetings accompanied by greater transparency. Some 95 per cent of fund managers now provide transparency reports, a marked contrast from the past. ODD teams are also actively involved in counterparty discussions whereas in the past, these were handled almost exclusively by investment due diligence teams.

Within ODD activities, the most time-consuming is the constant review of controls and processes employed by the fund through its main outsourced service providers. Almost equally lengthy is the behavioral analysis of employees and principals of the fund manager and understanding the custody and security of a fund's assets.

What are ODD teams' chief concerns? At the top of the list is ensuring the budget is in place to maintain operational controls. Other important issues include the shadow accounting of the administrator and the segregation of duties between traders and internal accounting.

Castellanos adds that the drivers behind all the changes around ODD are the



**Kristin Castellanos, Head of
Regulatory Fund Services at
Deutsche Bank**

investors who allocate funds to alternative investment managers. "As competition is fierce when attracting investments from allocators, alternative investment managers must be prepared to pass rigorous due diligence standards, particularly in ODD," says Castellanos.

While the panel called for more background checks and transparency, among other things, cash controls at hedge funds were considered to be among the biggest risks. Explains Castellanos: "Although the industry has come a long way in terms of operating controls, there are still many firms that permit manual wire payments instead of using more secure electronic methods. There are some compensating controls that could be quick wins, such as having compliance staff perform testing of wires to ensure they are being completed in accordance with the policies in place."

Castellanos concludes by saying that there is broad agreement that ODD will continue to evolve in the coming years to meet the expectations of institutional investors: "At Deutsche Bank, we will keep ahead of market developments in order to work with our clients to try to help them navigate today's complex and challenging landscape." ■

This document is for information purposes only and is designed to serve as a general overview regarding the services of Deutsche Bank AG, any of its branches and affiliates. The general description in this (presentation, factsheet, brochure, newsletter, document) relates to services offered by Global Transaction Banking of Deutsche Bank AG, any of its branches and affiliates to customers as of (Month Year), which may be subject to change in the future. This (presentation, factsheet, brochure, newsletter, document) and the general description of the services are in their nature only illustrative, do neither explicitly nor implicitly make an offer and therefore do not contain or cannot result in any contractual or non-contractual obligation or liability of Deutsche Bank AG, any of its branches or affiliates.

Deutsche Bank AG is authorised under German Banking Law (competent authority: German Banking Supervision Authority (BaFin)) and, in the United Kingdom, by the Prudential Regulation Authority. It is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority, and is subject to limited regulation in the United Kingdom by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority and regulation by the Financial Conduct Authority are available on request.

Copyright© July 2015 Deutsche Bank AG. All rights reserved.

7 ► “We think we can help our clients achieve that because we give them a comprehensive and coherent model in APT. Coherent in the sense that a single risk model is designed to provide coverage across all major asset classes. It’s also intuitive because APT is a factor model. It’s not just based on time series and pure statistical approaches,” explains Wormald.

Whatever the story is, you need to have a system that people internally buy-in to as well as externally when speaking to prospective investors. That’s when risk can become a part of the strategic vision of an asset management business.

Having a risk system that makes traders feel that they are getting good information is important.

“Investors gain intuition by thinking about risk in factor terms. Most investment professionals believe that there are different factors driving the market; it might be interest rates, commodities pricing, a restructuring story within a market segment. If you can relate risk to those factors that are driving the market, then people believe that the risk numbers you use make sense. They might then have the confidence to take on more exposure because they have a better understanding, and potentially boost returns.

“If you don’t have a factor model you won’t be able to get insights from asking the system, ‘Tell me about my China exposure’, or ‘Tell me about my oil exposure’. For a straightforward European long/short equity strategy, the implied exposure you have to commodities or export companies that do business in China will be a risk factor and a potential return driver. If you’re not capturing that with your risk system, it’s impossible to be strategic,” stresses Wormald.

The wisdom of the crowd

The Alternative Share Private Network (‘ASPEN Solutions’) is a comprehensive front, middle, and back office solution designed to empower institutional investors to build, execute and monitor multi-manager hedge fund portfolios. Dr Ken Akoundi, one of the founders of RiskMetrics and who joined ASPEN last year, explains that the system has been built on the basis of the ‘wisdom of the crowd’.

As such, ASPEN is a solution designed to help institutional investors collaborate with



In my opinion, stress testing and sensitivity are two important concepts that are becoming more important than VaR.”

Dr Ken Akoundi, ASPN

each other, share ideas, and basically get a clearer handle on the risk and performance attribution of managers in their portfolio. The reason why this is enabling investors to become more strategic is because ASPEN provides them with a central repository to collect and store data. In Akoundi’s view, institutions are less interested in granular position-level data. The hurdle many are still trying to overcome is getting all of their manager data in one place.

“They might have a document sharing system, a performance measurement system, a factor model system; that’s three systems already. With ASPEN they have one system with everything in one place. They’ve got their data in good order on the long only side but when it comes to hedge funds it’s still a complete mess for most institutional investors.

“For many investors, extracting information from monthly newsletters, summaries and putting it all into a spreadsheet is timely. What we can do is create a data map for every manager letter. The day after a manager releases their monthly letter, it’s in the ASPEN system ready for the investor to review,” says Akoundi.

When asked whether the collaboration capabilities of ASPEN could change the way that institutional investors approach risk management, Akoundi responds: “Overall, I don’t think using ASPEN will change investors’ risk appetite. They just want the ability to use risk tools that will tell them what will happen if something goes wrong. In my opinion, stress testing and sensitivity are two important concepts that are becoming more important than VaR. It’s not only knowing how a 5 standard deviation left tail event would impact the portfolio, but also a 4 and 3 standard deviation event, a median standard deviation, and perhaps a 5 standard deviation right tail event. Users can do that visually in ASPEN.” ■

A new view into hedge fund operational risk

By Chris Kundro

There are many professionals, both internal and external to a fund manager, who play an important role in controlling a fund's operational infrastructure and mitigating a fund's operational risk. COOs, CFOs, and CCOs manage the functions necessary to support a hedge fund, while fund directors, auditors, and operational risk analysts ensure that a hedge fund's infrastructure is sound and secure.

However, unlike portfolio managers and traders that have always had portfolio management, trade order management, and other systems to leverage, operational professionals have historically lacked sophisticated or comprehensive systems for managing and analysing a fund's operations, accounting, compliance, and investor servicing related functions.

Consequently, operational management of a fund has been inherently challenging due to a lack of complete and timely operational information. Furthermore taking that information, analysing it, and identifying systemic issues has been virtually impossible or at the very least manually intensive. However solutions to these problems are quickly evolving and in turn both the operational management and due diligence of hedge funds are becoming more sophisticated and comprehensive.

Best practice in hedge fund operational management now dictates the use of a new category of applications that we call "Operational Management Systems". Operational Management Systems are not processing or accounting systems but workstations that provide a window into the post trade activities of a fund. These workstations provide the information necessary to monitor and measure operational activities, analyse and mitigate operational risk, and ultimately ensure that both internally supported and outsourced functions are performing efficiently and effectively.

Operational Management Systems vary in design and function; however these systems provide some or all of the following functions and information:

- Real-time monitoring of middle and back office operations activities such as trade capture, securities/cash reconciliation, confirmation, settlement, cash and



Chris Kundro, Senior Vice President, Head of Wells Fargo Global Fund Services

collateral management, asset servicing and P&L calculations,

- Real time monitoring of fund accounting activities such as NAV calculation and financial statement processing,
- Real time monitoring of investor activities such as subscription/redemption and capital call/distribution, KYC/AML, and investor accounting and servicing activities,
- Counterparty risk information and information related to the operational effectiveness of counterparties such as prime brokers,

- On-line access to operations, accounting, investor and regulatory information and reporting, including report writer capabilities for generating customised reports.

At Wells Fargo Global Fund Services, we took an exception-based approach in designing our Operational Management System for both hedge fund and private equity managers, which is called Fund View. While our clients and internal teams can utilise our system to access and design comprehensive middle and back office operations, fund accounting, and investor and regulatory related reports, Fund View, like similar applications, provides real-time dashboards with key performance indicators that highlight current and potential operational issues. These issues include:

- Transaction capture errors
- Position and cash breaks
- Unconfirmed and failed transactions
- Counterparty operational issues
- Pricing exceptions and variances
- Delinquent activities related to critical processes (e.g., NAV production)
- Non-compliant investors/transactions (KYC/AML, FACTA)
- Unplanned counterparty financial and operational exposure.

While Operational Management Systems are still in their infancy relative to their more mature front office siblings, they are growing and evolving quickly. However, even in their current stage of development, they finally provide the critical automation and information that COOs and other fund professionals have long awaited. ■



Will regulation help or hinder derivatives risk management?

By James Williams

Managing derivatives risk in the portfolio is a demanding task at the best of times. But as global regulators make inroads to drive transparency in OTC markets, managers find themselves having to file detailed risk positions under CFTC regulations in the US, EMIR reporting in Europe, not to mention the unnecessarily dense Annex IV report under AIFMD.

Quite what regulators hope to gain by getting such voluminous data remains to be seen. Still, managers must comply. OTC derivatives are increasingly being traded on Swap Execution Facilities (SEFs) under Dodd-Frank, with exchanges such as CME Group rolling out products such as the Deliverable Swap Future, a standardised contract that illustrates a move towards swap “futuresisation” and a move away from the opaque bilateral OTC trade environment, which some consider too systematically risky.

The migration to centralised clearing for OTC derivatives has created numerous centralised clearing parties (CCPs). One issue is that different clearing houses are using

different models for pricing and margining. Portfolio managers using more than one CCP arrangement need to factor this into their risk management and decision making.

“The clearing houses are also using different ways to build curves and volatility surfaces which directly impacts collateral valuation, which can further impact price and risk. A swap position in TFG can have a different value depending on where it is cleared and what the customer requires,” says Martin Toyer, Chief Technology Officer at TFG Financial Systems.

“We have one client who wants to match the clearer’s price so that they aren’t getting a different price when they trade. To support this has required development work for capturing trades from SEFs to dealing with different netting and different valuation models – thereby increasing complexity.”

As Georgia Brewster, Sales Manager at TFG points out: “We have tried to enable clients to lead the way on how they would like their portfolio to be managed in this new environment. We’re giving them the flexibility

with the software to let them contribute a valuation from the clearer, for example.”

In Brewster’s view, it’s too early to know whether regulation is going to make derivatives risk management any easier or not. The good news, however, is that some firms are developing solutions to make managers’ lives easier, specifically with respect to margining.

OpenGamma is a leading provider of OTC market structure solutions. It has worked in collaboration with OTC derivatives market participants to build an open source model to calculate the margin on bilateral OTC trades. The solution will use the final Standard Initial Margin Methodology (‘SIMM’) developed by ISDA and will be made available to market participants on Github.com, an open source environment.

This is an important development as the OTC markets adjust to regulation because as highlighted above regarding clearing houses, the derivatives industry needs to instill some degree of standardisation. Otherwise risk reporting and remaining compliant will become an impossible exercise.

With OpenGamma’s SIMM solution, derivatives traders will have access to source code for margining for the first time and allow them to avail of an independent, verifiable calculation framework. It’s a loose analogy, but one could think of this as being similar to the creation of the OPERA reporting standard that provides managers with a common reporting framework to use with their investors.

“With capital scarce, financial firms are more focused than ever on developing high-value, proprietary innovations rather than recreating industry-standard methodologies,” said Mas Nakachi, CEO of OpenGamma back in March this year. “That’s why we’re working with the industry to streamline and democratise the development of market structure solutions, which also fundamentally reduces operational and systemic risk through the inherent transparency of open source code. We believe the future of OTC market structure will be driven by the need for transparency and will therefore be based on open standards.”

One firm that has stepped in to the breach to make it easier for derivatives traders to generate risk reports is cloud-based



“We have tried to enable clients to lead the way on how they would like their portfolio to be managed in this new environment.”

Georgia Brewster, TFG Financial Systems

provider, Derivitec, whose central philosophy is to provide its clients with validated risk management reporting.

At the heart of the Derivitec model is the ability to analyse a portfolio of derivatives exclusively via the web, with no need for users to go through the time and ongoing costs of a system install. This is about leveraging the cloud to optimise portfolio risk management.

Derivitec generates standard risk reports that include all the usual Greeks one associates with derivative risk, as well as stress tests and will soon be providing historical and parametric (Variance/Covariance) VaR. What is especially powerful, however, is that end-users are able to drill right down into the analytics from which the headline numbers derive.

This is particularly important for investors and is something that start-up hedge funds, in particular, can use as a real point of differentiation. They could, for example, invite prospective investors on to the platform so that they themselves can check the numbers, look at the underlying risk metrics within the report, and get a deeper understanding of that manager’s approach to trading risk.

Discussing the reporting capabilities, George Kaye, CEO of Derivitec says that the advantage of using a third party vendor is that “we implement the solution for everybody so the consistency checks are much more stringent.

“Whether it’s looking at the Greeks, shock scenarios, VaR, our reports can help risk managers both in sell-side and buy-side institutions. Organisations will have a preferred PMS but we can integrate quite easily to give them the ability to dive deeper into the risk numbers. Given risk can be exposed in numerous ways, it takes the pressure off managers. We are basically filling a gap where clients want to produce

► 16



Sometimes, we are surrounded by risk.
Seeing it takes the right perspective.

PortfolioScience
Time To Manage Your Risk

sales@portfolioscience.com
www.portfolioscience.com

A fully hosted and customisable risk solution

Interview with Ittai Korin, PortfolioScience

The RiskAPI service, developed by PortfolioScience, is a fully hosted and customisable risk solution that integrates seamlessly with existing applications and programming frameworks to generate risk calculations for multi-asset, multi-currency portfolios and individual positions. It is available as both an Enterprise software API and an Excel Add-In.

Rather than being a risk calculator, per se, it is a complete end-to-end solution.

"Our system has all the underlying data, and all the necessary analytics, connections and external data feeds within the infrastructure; everything needed to generate a full spectrum of risk calculations," explains Ittai Korin, President, PortfolioScience. "If they want, managers can come to us with nothing more than a description of their portfolio."

Short integration time

The fact that the solution is delivered as an API is quite unique in the marketplace.

Korin notes that one of the biggest disadvantages that clients of its competitors face is that it can often take several months before they see any system output due to the time it takes to integrate with in-house systems. "Because of the lightweight nature of our API interface, customers can get up and running and start generating results in a matter of days," says Korin.

High degree of customisation

In addition, because it is an API and is highly customisable, users are able to generate results according to how they work, and how they view the world. The idea is that users are not getting a standard off-the-shelf risk report that somebody else has built. They have full control over what parameters to use, which calculations to perform, and how to present the data.

Another important feature of RiskAPI



Ittai Korin, President,
PortfolioScience

is that it is offered "on demand". Once a trade is placed in a manager's execution management system, a request is automatically sent to RiskAPI, at which point all the risk calculations are instantly populated and conveyed to the end-user.

"Our philosophy is to provide clients with the same level of control that they would have if they were to build an in-house risk solution from scratch. Our hosted solution does exactly that, without the overhead of the manager having to build it and maintain it going forward. Every day there are changes to valuations, pricing etc. That ongoing monitoring and management can use up a tremendous amount of bandwidth. Clients can offload that to us and still maintain a high level of control," says Korin.

Broadly speaking, RiskAPI provides dynamic multi-model VaR, valuation, and stress-testing capabilities, whereby users can select and specify a variety of inputs.

"This provides a more sophisticated way to interact with our system. We have larger clients with in-house development teams using this solution to build their own enterprise risk systems. Larger funds, for example, will have an internal data warehouse. They use RiskAPI Enterprise in conjunction with their data warehouse, which contains portfolio position data, to run risk calculations and render reports when needed," explains Korin.

PortfolioScience also has connections to various data vendors covering different assets and markets to help ensure that the quality of data produces as accurate a picture of risk, at any given moment, as possible.

"We know how important data is to risk management. Ours is a very thorough and extensive database. Managers are getting accurate risk calculations generated off the back of the data we have at our disposal," concludes Korin. ■

13 ► certain risk reports from their existing system vendors, but are dealing with much longer implementation lag times. We can overcome that,” says Kaye.

This is one of the benefits of using a powerful cloud-based risk engine. Kaye says that people are speaking to Derivitec precisely because it uses the cloud.

“For example, we are talking with one prime broker who likes the fact that we operate in the cloud because it allows them to share information immediately with their clients, and in turn allows clients to be responsible for booking their positions. There’s greater commonality to discuss prices with the PB, and the fact that there is no software to download makes it a good fit for a lot of people,” explains Kaye.

One of TFG’s objectives is to provide risk numbers that are explainable and understandable. This means trying to make scenario generation within the system as model-independent as possible.

“Users can define the ‘What if...’ event in terms of market shocks, or define it by how much an index or curve were to move and the market were also to move with it in a correlated manner. You can also see what would happen to the portfolio if certain historical events were to be repeated.

“To present these numbers we use what are known as Mastermind sheets. They have Excel-like functionality that allows you to create a real-time monitor which sits on your desktop to monitor stress tests or factor shifts. You can commingle multiple types of shocks and the numbers can be colour-coded depending on risk levels.

“What we are seeing is clients requesting those risk numbers at different levels of granularity using more complex shocks,” confirms Toyer.

Andrew McCaffery is Global Head of Alternatives at Aberdeen Asset Management. Aberdeen will have over USD30 billion in assets under management across its alternatives platform once the acquisition of leading fund-of-hedge-funds manager Arden Asset Management and FLAG Capital Management, a PERE manager, is completed.

When it comes to risk management, McCaffery says that the team looks at everything from position risk concentration,



“Whether it’s looking at the Greeks, shock scenarios, VaR, our reports can help risk managers both in sell-side and buy-side institutions.”

George Kaye, Derivitec

sensitivity across different parts of the portfolio, the degree to which correlation is increasing or decreasing across strategies, etc.

“We look at risk factors such as leverage, counterparty exposure, the degree to which we see dislocations in the liquidity profile of the portfolio. Under Basel 3 and other developing regulation, banks will have to be ever more cognisant of where they deploy capital going forward.

“As a hedge fund allocator, it will become a key issue for us to ensure that the manager’s perception of liquidity matches up with the actual liquidity that their banking counterparty can provide. Understanding the liquidity profile relationship between the manager and the prime broker is going to be vital when we move from a benign market environment to a more volatile and challenged one,” says McCaffery.

Aberdeen is in the rather unique position in that it is both an asset manager in its own right, and also an asset allocator. In that sense, the firm appreciates the minutiae of regulation. Its fixed income business, for example, has to comply with EMIR reporting on the derivatives it trades.

“As allocators, what is key is understanding that the underlying managers meet the regulatory requirements and remain compliant. There are potential costs of failing to accurately report that could potentially impact a manager’s strategy,” comments McCaffery.

Asked whether the added transparency of OTC clearing under EMIR and Dodd-Frank could help or hinder Aberdeen in respect to risk management, McCaffery raises an interesting point. Will managers benefit from increased visibility and transparency in the way they trade derivatives or will they be at a disadvantage precisely because the opaqueness of the OTC derivatives markets ► 19

Cross-asset portfolio management for global financial markets.



✓ Real-time risk and performance

✓ Support for complex derivatives

✓ Automated trade processing

✓ Investment Accounting

✓ Flexibility and reliability

✓ True multi-asset platform
supporting:

FX

Rates

Credit

Fixed Income

Equities

Commodities

To discuss how TFG could help you react faster to market changes, add value to investors and ease your technology burden, visit www.tfgsystems.com to download a brochure, or call our sales team: New York +1 (646) 233-3266, London +44 (0) 20 3370 1780.

Delivering real-time risk that reflects the speed of the market

Interview with Martin Toyer

The markets have experienced significant volatility in the last few months. China's decision to devalue its currency, the collapse of commodity prices and the uncertainty caused by global quantitative easing have all caused significant disruption to financial markets. In August, all three major equity indices in the US suffered their biggest losses since 2011.

Hedge funds need to manage volatility and to do that effectively requires a risk management system that is real-time, user driven and flexible enough to provide the instant analysis that is required.

This is precisely what TFG Financial Systems provide. Offered as a cloud-based solution, TFG delivers the only true real-time solution for multi-asset class portfolios. The core infrastructure was built to be massively scalable using low cost technology and delivers the performance that today's volatile markets demand. VaR, NAV and stress/ scenario reporting is delivered real-time tick by tick as markets are moving.

"With increasing volatility, it has become more important to see the instantaneous impact of any price moves in the portfolio's assets. Portfolio managers can no longer afford to wait until the end of the day to see what the impact of a Federal Reserve rate hike has had, for example," says Martin Toyer, Chief Technology Officer at TFG.

As well as being a real-time position and risk management system, TFG provides full middle/back office capabilities which were designed to maximise the level of automation and minimise headcount costs. This covers full STP capabilities for trade workflows, cash management, reconciliation, collateral management,



Martin Toyer, Chief Technology Officer at TFG Financial Systems

historical reporting and real-time shadow NAV. It is a true front to back portfolio and risk management platform.

Risk management has grown in importance and complexity since the 2008 financial crash. Having a detailed understanding of where market risk is generated requires accurate/reconciled positions, clean market data and user flexibility in terms of pricing models, curve construction and scenario generation. Toyer notes that because TFG is focused on all these aspects it ensures that its clients have the tools they need to navigate the most volatile markets.

"There's very little on the buy-side in terms of proprietary valuations. We therefore made the decision to build our own libraries to maximise performance, lower cost and provide the flexibility our clients demand. Our analytics give users complete control over which positions use which curves for valuation. This customisation, combined with the speed of valuation and user driven real-time reporting, is unique to TFG," explains Toyer.

There are two main elements to TFG's software. The primary aspect provides real-time VaR, stress testing and P&L attribution at the strategy level, the underlying asset level and the position level. The secondary aspect, says Toyer, allows users to capture daily risk/p&L data, which can then be stored in a data warehouse to run historical analyses for portfolio back-testing and regulatory reporting.

Asset coverage includes both cash and derivative products for FX, fixed income, equity, interest rates, commodities, credit and inflation. ■

16 ► has, up until now, been a cornerstone of how they generate alpha in the strategy?

"There's no easy answer to that at this stage as people are still adjusting to regulation. The challenge for us is to understand the dynamics of derivatives regulation and moreover, be comfortable knowing that the underlying manager is well placed to understand it. How is it changing the way they operate as OTC derivatives starts to move towards more of an exchange-traded environment? We want to be clear that we understand how the manager might be impacted," explains McCaffery.

One potential unintended consequence of Basel 3 regulation is that it could actually push fund managers to trade more synthetic derivatives such as equity swaps as these contracts reduce the impact on a prime broker's balance sheet.

Equity swaps are notoriously complex so having a common platform where people can deep dive into the details of a trade and get comfort that the price and risk is correct, is clearly an advantage.

"When it comes to understanding the minutiae of a synthetic trade it's going to be a lot easier using a system like Derivitec than passing spreadsheets around," suggests Kaye.

McCaffery notes that synthetic equities usage is probably increasing at the margins because of higher financing costs that managers are facing to trade physical stocks.

"There's a price to pay for going down the synthetic and structured products route, however. It comes down to the sophistication of a manager's pricing versus the investment bank they are trading with. Under stress, what is the cost impact going to be? How will it change the liquidity profile? Managers who are well experienced at trading derivatives might see it as an opportunity but they need to understand what the incremental benefits will be from a cost and liquidity perspective under different market scenarios – not knowing this could seriously impact the performance of the strategy," warns McCaffery.

Ittai Korin is the President of PortfolioScience in New York. The firm's RiskAPI service is a fully hosted and customisable risk solution and has been



"As allocators, what is key is understanding that the underlying managers meet the regulatory requirements and remain compliant."

Andrew McCaffery, Aberdeen Asset Management

designed such that it can cope with the extra demands of regulation.

"From a usability perspective, if a risk manager or a trader comes to us and says, 'I want to be able to run risk analytics on equity options', we have to provide a full picture of their exposure. It's not therefore a case of reacting to regulation and thinking, 'Right, we'd better add greater capability for our clients'. The fact is, we have to do that anyway, even if there was no regulation.

"What drives our product development is the demands of our clients; does our system functionality help them to better understand their risk exposure in a given asset class? We don't get too caught up in what regulators are saying. That is why whenever we release something it is always very detailed and robust from an analytical standpoint," states Korin.

That said, PortfolioScience is seeing more demand for real-time risk coverage from sell-side institutions. Whereas previously they might only have looked at one level of output, now they are asking what other models they should be looking at in parallel; i.e. not just one type of volatility, not just one type of stress-test, not just looking at the top five positions in the portfolio but looking at everything.

"They are coming to us and asking how they can get complete visibility into everything that passes through their desk. That's definitely a big change in mindset. Maybe it's driven by regulation but it will almost certainly also be driven by not wanting to lose money," concludes Korin.

Gaining greater insights into derivatives risk and using standard models for calculating initial margin will certainly help managers improve their risk processes under evolving regulation. However, whether the transparency of OTC markets will dampen the ability for managers to generate alpha is the USD64,000 question. Only time will tell... ■