

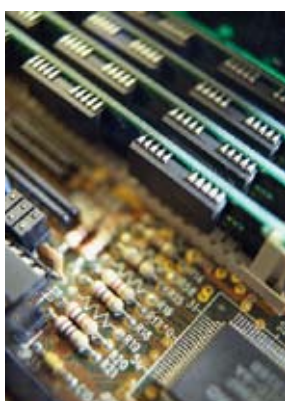
Hedge Fund Risk 2009



Refocusing on risk management after the downturn

Madoff highlights importance of due diligence

Investors and regulators raise the bar for managers



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Risk & Reward

Investors and managers refocus on implications of risk

By Simon Gray

For years hedge fund managers have been routinely describing their goal – indeed, their promise to investors – as achieving “above-average risk-adjusted returns”, and the industry has traditionally trumpeted its dedication to the highest standards in monitoring, measurement and management of risk. But 2008 was the year in which many of these proclaimed promises and standards were revealed to be empty or inadequate.

To a considerable extent the efforts of managers to master risk in the management of their portfolios has been found wanting to as the credit crunch has unfolded and the economic environment for the industry has deteriorated. Now a much more effective handling of risk issues by investors and managers, as well as by service providers, has been demonstrated to be imperative.

Nowhere were risk management procedures approaches proven to be more inadequate than in relation to investments with US fraudster Bernard Madoff, whose asset management business, which purported to run as much as USD65bn for investors, was unmasked almost overnight last December as a gigantic Ponzi scheme. A host of market participants failed to heed clues that might have alerted them to the

fact that for years if not decades, Madoff completely failed to invest his clients’ money but simply paid returns out of new inflows.

End-investors, capital introducers, managers of feeder funds and service providers such as fund custodians, administrators and auditors all stand accused of failing to conduct proper due diligence on Madoff and his investment techniques, or skipping over warning signs that should have indicated a model that did not stand up to scrutiny – red flags that were easily found by other institutions that considered placing money with Madoff but decided against it.

“Every time a Madoff-style case comes up it reinforces that people need to do background screening,” says Doug Nairne, head of enhanced due diligence operations at World-Check, a London-headquartered provider of risk screening and research services. “If people had done even basic due diligence on Madoff, enough red flags would have come up to have given them second thoughts about whether they should be doing business with him.”

Not all the problems that have emerged with risk management strategies over the past 18 months have been so blatant, but a common theme for both hedge funds and

Traumatic year turns focus to the fat tail

By Paul Compton

After a traumatic year for alternative fund managers and their investors in 2008, the hedge fund industry is having to take risk measurement and management processes a great deal more seriously. The past year has also provided a unique test-bed for the ability of in-house and third-party risk management solutions to perform effectively not only in a benign environment but under much more volatile and challenging market conditions.

In the past hedge fund managers have been accustomed to reporting value at risk (VaR) numbers to their investors, but for many this has been more a formula than an integral part of their investment process. Now, however, the limitations of VaR measurements have been highlighted, along with the importance of being able to assess the likelihood and potential extent of extreme market events.

These developments have spotlighted the capabilities of risk management solutions offered by SunGard. In the hedge fund space, its offerings include the Front Arena front-to-back trading system, which enables real-time cross-asset class risk analysis encompassing equity, credit, interest rates and commodities, and RiskHedge, an outsourced risk solution that is accessible and affordable to smaller hedge funds but also popular with service providers offering risk reporting to their clients.

An important advance for SunGard was the acquisition a year ago of APT, a business with a 20-year track record in buy-side risk analytics. The APT product suite includes a hosted risk reporting offering, enabling managers to monitor such metrics as tracking error, portfolio volatility or value at risk. It helps them identify which positions are contributing most to risk, and supports



Paul Compton is head of product management with SunGard Alternative Investments

portfolio construction, for instance by proposing a list of trades to minimise the variance of the portfolio.

The capabilities of APT are particularly important, given that events in 2008 emphasised the quality of risk numbers much more than in the past. Last year's turbulence exposed the failings of some risk metrics and methodologies – and demonstrated the value of APT's emphasis on economically motivated risk models.

In a sense the value at risk model failed, because in market crises all the normal relationships from which value at risk is calculated break down. Also, by focusing on a 95 or 99 per cent confidence interval, value at risk measures the sort of loss that can happen 19 days out of 20 or 99 times out of 100. But last year we learned that what really matters is what happens in the tail, the extreme event in the really bad month or year.

Most risk measures are built on the assumption that asset returns such as share and commodity prices, and most economic factors, are normally distributed, so they always underestimate the probability and magnitude of extreme events that in fact happen much more frequently than the normal distribution would imply.

SunGard APT can calculate a 'fat tail' version of value at risk and analyse portfolio risk inside the tail. APT makes no assumption that asset prices or economic factors are normally distributed. Comparing APT's risk forecasts for each quarter of 2008 with what actually happened has demonstrated that its metrics taking into account the actual probability of extreme movements, rather than any assumed distribution, performed much better than the typical value at risk forecast. ■



3 ► their investors has been that the focus had become skewed toward the return end of the risk/reward balance. At the same time, risk management models failed fully to take into account the interdependence of financial processes and assets, as well as behavioural factors that led to correlation in the value of assets in ways that traditional economic models had not predicted.

The large-scale breakdown of risk management processes, however, has provided an opportunity for a root-and-branch rethink across the industry, from the extent and rigour of due diligence processes carried out by investors, service providers and fund of funds managers to the development of new risk modelling techniques and parameters drawing on the experience of the past months and years. For example, the exposure of hedge funds to counterparty risk with their prime brokers has abruptly become an issue that must be factored into the calculations of both fund promoters and their investors.

"The Lehman Brothers and Bear Stearns collapses have highlighted the need for hedge funds to adequately diversify their prime brokerage and counterparty relationships, and to have contingency plans in case a major broker disappears," argue Moody's analysts in a report on hedge fund risk issues published earlier this year.

"It has also become clear that the prime broker or lending agreements themselves could have been structured in ways that would have substantially mitigated the disruptive effect of counterparty failure. For example, the segregation of margin collateral through third-party custody arrangements would have significantly reduced delays in the identification and repossession of assets pledged by the hedge fund. Similarly, limitations on the rehypothecation rights of prime brokers or secured lenders would also

have greatly facilitated recovery of hedge funds' collateral."

The stakes are high, not only for investors who stand to lose their money and managers who can see their business unravel with dizzying speed, but also for service providers that may find themselves in the legal front line if investments go wrong, and for both managers and other industry providers that find themselves under much more intense regulatory scrutiny. For example, the sudden focus on the responsibility of custodians and administrators toward end-investors is already prompting a reappraisal of how these businesses take on new clients.

To a large extent, this review of the evaluation and handling of risk will be able to draw upon resources already becoming available, including sophisticated IT systems that can better identify the nature and extent of risks through improved models and a wider range of data, but also the use of specialist consultants and other firms that focus exclusively upon risk services for different types of client, especially the kind of due diligence examination that would raise the alarm over Ponzi schemes and other types of fraud.

"The ongoing financial crisis has once again highlighted the importance of appropriate risk management in finance and the catastrophic failures of conventional approaches," says Professor Ingo Walter, director of SimCorp StrategyLab, a Copenhagen-based research institution founded and sponsored by investment management software provider SimCorp, in its latest global investment management risk survey published in March.

Walter cites the over-reliance of financial firms on fragile models designed by specialists lacking business knowledge and common sense, inadequate stress testing of the models being used, lack of empowerment of risk managers by comparison with revenue producers and poor communication and lack of understanding at board level.

"Cumulative global losses to investors and financial intermediaries - partly borne by taxpayers as well - look to be in excess of USD3trn by the time the storm dissipates," he says, "So it cannot be 'business as usual'

for risk management going forward. In many ways it will be 'back to the drawing board' – market discipline, the actions of supervisory boards and the inevitable response of the regulators will see to that."

The survey, which encompassed 90 companies in the investment management sector including fund managers, pension schemes and insurance companies, found that awareness of and responsiveness to risk issues grew appreciably last year, with 73 per cent of respondents reporting that the risk function contributed to some or a large degree, to efficient use or allocation of capital and resources within the organisation, and 58 percent saying that the role and responsibility of the risk function increased during 2008.

The survey participants believed that risk management within their organisations would be boosted most by increased strategic influence for the risk function, improved risk management processes and operations and risk reporting. Operational risk and financial risk were the best covered and most monitored risks, while knowledge management was by far the least covered and monitored.

The respondents identified insufficient risk methods and techniques, insufficient strategic understanding of the role of the risk function, and insufficient training and competencies in the risk management function as significant causes of financial losses in the investment management industry. In general they expressed above-average satisfaction with their risk management software, but were least satisfied with their ability to process real-time data.

"Timeliness of risk management data and risk reporting remains a critical issue that has surfaced once again in the current crisis," say Walter and his colleague Lars Falkenberg. "In cases where the source of large loss was made public along with the underlying causes, it seems clear that both data inadequacies and timeliness were important in management and control failures.

"Almost half of the respondents in the survey recognise the critical importance that the ability to store, process and report high quality, real-time data on risk exposure will have on the reputation and franchise value of financial institutions in the future. Indeed, some 17 per cent of respondents assign responsibility for direct financial loss in the



industry in the past two years to insufficient support on the part of IT platforms and applications and consequently poor data quality.

"While about 20 per cent of the survey respondents mainly use internal systems and applications for management of market, credit, counterparty and operational risk, almost a third of the respondents indicated a lack of familiarity with the specific systems being used, and almost 40 per cent state that their internally-developed systems cannot process real-time data. Roughly 25 per cent of those whose systems cannot process real-time data across risk types nevertheless use best of breed, stand-alone risk management installations sourced externally."

According to Moody's, a significant portion of the losses suffered by hedge funds last year probably reflects deficiencies in operational management and control. "From an operational quality standpoint, the absolute level of a hedge fund's market risk is not as important as whether that risk level is in line with the fund's self-prescribed limits," the report says.

"Losses that are disproportionately large in the context of the fund's stated investment strategy may indicate inherent flaws in the firm's approach to risk control that are not apparent until market stresses become unexpectedly severe. Alternatively, such losses may reflect an opportunistic departure from the investment strategy or portfolio guidelines described in the fund's offering memorandums or other representations made to investors. In Moody's view, both scenarios indicate operational deficiencies." ■



Service providers see opportunities as industry grapples with downturn

By Simon Gray

The evident risk management failings laid bare by the hedge fund industry's troubled performance over the past year are opening up a wide range of opportunities for providers of systems and services that enable managers to identify, monitor and manage the risks inherent in their business, according to software firms and other providers of risk tools for which the alternative investment industry is a key market.

While many large firms with billions of dollars in assets under management have long maintained institutional-style structures that include comprehensive risk management departments, tools and procedures, even they are re-examining how well these

arrangements performed during a year in which the average hedge fund reported performance losses of around 20 per cent and some did very much worse.

Meanwhile smaller managers that in the past may have largely paid lip service to risk monitoring and management and that often rely on IT systems cobbled together in-house, are now under pressure from investors to demonstrate that they possess and use effective risk capabilities. At the same time, providers are offering tools that may lack the bells and whistles of top-of-the-line applications but that are tailored to the budgets of hedge fund managers that do not have unlimited resources.



Due diligence in a dangerous world

By Doug Nairne

Due diligence is a concept that has been around for a long time, but its profile has risen significantly over the past decade. While a few years ago its focus was very much on preventing money laundering, and subsequently the disruption of terrorism financing, today due diligence is seen as a key tool to mitigate corruption and fraud-related risks.

IntegraScreen, which has just been acquired by World-Check, has specialised in conducting enhanced due diligence research since 2000. As one of the largest specialist providers of such services in the world, IntegraScreen's global footprint includes nine international offices and more than 200 full-time researchers. It serves a broad range of clients in the financial services industry, including all the large US and European banks and other financial firms, as well as the manufacturing and technology industries, accountants and indeed any business that requires screening of the background of individuals and companies.

By its nature, the hedge fund industry is an important area of business for World-Check, especially following its expansion into emerging markets over the past three years. Many hedge funds lack transparency in terms of their public footprint – they may not be incorporated as companies, or may lack a publicly disclosed track record – so there is an increased need to focus on the background of the individuals responsible for running these funds.

Many investors base their decisions to do business with a hedge fund on the background of its principals. Enhanced due diligence is in demand to verify that these individuals are who they say they are, that their business record is trustworthy, and that that their education, qualifications and employment history is accurate.



Doug Nairne is head of enhanced due diligence operations at World-Check

Investors entrusting their assets to portfolio managers need reassurance that they actually have the degree they boast from Harvard Law School or that MBA from Yale, or that they really did spend 10 years as head of US equities with a big investment institution. They also need to know whether their money managers have any red flags such as litigation or bankruptcy against their names.

These concerns have become even more pressing since the discovery of the Madoff scandal, and every new fraud case or Ponzi scheme that is uncovered reinforces the importance of background screening. Before, investors may have relied on the fact that the individual in question had a good word-of-mouth reputation, moved in exalted social circles or was a personal acquaintance – but no longer.

The use of third-party enhanced due diligence is also growing in favour. The expectations placed on in-house staff members are steadily growing, but companies are also becoming aware of the dangers of conflicts of interests if a staff member with a financial interest in a deal is responsible for assessing the integrity of their counterparties.

Independent scrutiny of this kind may also be required by regulators or financial firms' own investors.

A further factor is the extraterritorial application of the US Foreign Corrupt Practices Act, which can apply to foreign companies with any kind of link to the US; even something as apparently trivial as a bribe paid in US dollars that passes through a New York bank can lead to prosecution.

When executives of foreign companies can be arrested in transit at US airports, they become very conscious of how high the stakes are if due diligence is not carried out properly. ■

7 ► Almost half of all respondents interviewed for an investment management risk survey commissioned by Copenhagen-based research institution SimCorp StrategyLab says they expect to see increased investment in IT platforms and applications that are key to improving risk management – with pressure coming from both investors and industry regulators.

“Right now huge swathes of the market are recognising that they need some kind of risk management infrastructure, whereas before it was never a concern,” says Ittai Korin, president of New York-based Portfolio Science, whose RiskAPI product offers a low-cost risk engine for hedge fund managers via the internet. “Investors are demanding risk management, and regulators are talking about it.”

Korin believed the future is bright for providers of risk management solutions even though he expects significant contraction in the hedge fund industry over the next six to 18 months. “We still see growth because such a small portion of the industry is equipped with effective risk management tools,” he says.

“Many of those that are disappearing never had them to begin with. Typically the kind of managers that come to us are early adopters who realised that this was an issue and that they needed a risk management system before the crisis started.”

Investors are examining more closely the capabilities available to managers and the role they play in their investment decision processes, according to Paul Compton, head of product management with SunGard Alternative Investments in London. “You can define risk much more widely to include operational integrity and Madoff-type situations,” he says.

“There’s no doubt that well in advance of regulators getting their act together, both hedge fund and other fund management businesses are under much more pressure to demonstrate that they have sound operations and that funds are valued using transparent and good methodology – basically that there’s operational strength and transparency behind it.”

In turn, the spotlight is being turned on providers of risk management systems and services to demonstrate that they



can deliver upon their promises, Compton acknowledges. “Last year has given research teams a wonderful experimental test-bed to put risk vendors such as ourselves under pressure and identify the winners and losers according to people’s ability to stand up to the stresses of 2008 from a risk point of view.

“People are really wanting to dig into how the numbers are calculated, what are the assumptions, and look at the performance of risk forecasts. You can talk about who has the best methodology but what matters is empirical performance – comparing forecasts as of December 31 and March 31 with what actually happened in the following quarter. It’s normal for people looking at our product to back-test how it does. We expect to have to justify our performance.”

SunGard offers a range of risk products to different segments of the industry, including Front Arena, a front-to-back trading system that also enables portfolio managers to carry out real-time cross-asset class risk analysis, and RiskHedge, an ASP outsourced risk solution aimed primarily at smaller hedge fund managers as well as administrators that want to offer risk reporting services to hedge fund clients. And last year the group acquired APT, a specialist buy-side risk analytics product with a 20-year track record and a following among managers of hedge funds and funds of funds as well as traditional asset managers and institutional investors.

Compton says the firm is seeing new business flowing both from managers that in the past have tried to carry out risk management using in-house tools and those that have been disappointed by the performance of other third-party vendors. “We’re seeing green-field business from fund managers around the world that previously didn’t have a third-party risk vendor in place, but equally managers who have been using products that let them down last year,” he says. “We are aware of a number of people reviewing their existing products.”

In addition, managers are not only devoting a larger share of operational resources to risk management in response to investor and regulatory concerns but considering new approaches that may become desirable or even essential in the ► 11

Offloading the risk management headache

By Ittai Korin

Up to around a decade ago, risk management solutions were extremely expensive and available only to the largest financial institutions such as central banks, pension funds and investment houses. Because of the costs, expertise and resources required, risk management was inaccessible and unaffordable to the rest of the investment industry.

But around 2000 the advent of commoditised computing power and the increased availability and capacity of the internet were making it possible to centralise the complex and previously highly expensive elements required to run a risk analysis application into an on-demand, networked engine offering access to these resources at incremental cost for all users.

The breakthrough idea that gave birth to Portfolio Science RiskAPI – a distributed risk engine extending access to risk management capabilities from the largest and best-capitalised institutions to every investment industry player – was the use of an application programming interface (API) that allowed users to access exposure calculations through standard operating environments, starting with the ubiquitous Excel spreadsheet application.

APIs normally allow users to customise software by developing code that can access and manipulate the software's features. Portfolio Science's RiskAPI takes the concept a step further by using a standardised interface to connect securely over the internet to a risk engine running on the firm's servers. With Excel, any user with the company's client software component and a subscription to the service can execute a broad spectrum of risk analysis calculations on their portfolios and positions – at an extremely affordable cost.

This approach differs from the web-based strategy for providing risk management services offered by other industry players. For a web site to deliver an application such



Ittai Korin is president of Portfolio Science

as risk reporting entails complex, costly and extremely time-consuming integration to allow the delivery of portfolio data to the site. This also raises security issues since the fund manager client is exporting extremely proprietary methodology and data to a provider that is a software company, not a bank or a brokerage. RiskAPI leaves the client as custodian of the portfolio data, merely making calculation requests to the system, where nothing is integrated or stored.

The standardisation of web-based applications and the difficulty in offering high levels of customisation is a distinct drawback for users that are highly demanding both technically and in terms of usability. By contrast, the RiskAPI service allows users to pick and choose the calculations they want, how they parameterise them, how they display them and what they do with them. This offers the flexibility of an in-house solution without responsibility of managing data feeds and algorithms, assuring reliability and delivering computing power.

This service is particularly suited to the needs of hedge fund managers, which are by their nature early adopters of technology, nimble and typically combining a comparatively small staff with the technological requirements of bigger organisations – including risk management needs for a handful of people as great as those of large mutual fund companies.

Today the RiskAPI model encompasses a broad range of asset classes and multi-model, multi-parameter, multi-view types of calculation geared to a diverse set of market demands. And increasingly the system has users with very similar requirements to hedge funds, such as investment bank prop trading desks, as well as prime brokers and administrators that offer their clients risk management completely embedded within existing reporting services. ■

9 ► future. “Firms that have taken risk seriously in the past have tended to focus on first, measuring risk, and secondly, attributing it,” Compton says. “Arguably there needs to be a third pillar of risk management, stress testing.”

This is an area on which SunGard is concentrating product development resources. “We’ve just released a version of APT that offers scenario analysis functionality out of the box for the first time, and we’re doing a lot of research on stress-testing methodologies,” he says. “For example, we’re doing research on the way price relationships break down in crises, focusing on the periods immediately following the collapses of Bear Stearns and Lehman. One question is whether a 50 per cent collapse should be treated like a 10 per cent fall, just five times as large, or whether the knock-on effects are qualitatively different.”

A different product philosophy is embodied in Portfolio Science’s RiskAPI, which by virtue of an application programming interface accessible through a standard Excel spreadsheet application allows users to generate customised risk analysis calculations.

Hedge fund clients are generally faced, says Korin, with a choice between an expensive customised installed product and more basic web-based applications that give the user few options in terms of how they use the system or view the results. By contrast, RiskAPI “is a hybrid approach that allows outsourcing of a critical solution with an amazing amount of flexibility”, he argues.

With fee income in the doldrums, many managers are getting “sticker shock” at the cost of traditional risk management systems and are daunted by their complexity and installation lead time. “We tell them RiskAPI is easy, affordable and offers everything that big institutions are demanding because of the way we’ve structured it,” he says. “Whereas some competitors charge USD50,000 or more a year for one user, our simplest product, the RiskAPI Add-In, starts from USD300 a month for our US equities package. That’s less than many managers would spend on lunch in a city like London.”

Since the launch of RiskAPI in 2001, the scope of the product has expanded from US

equities to a broad range of asset classes, and the approach has started to attract other types of client, including investment bank proprietary trading desks but also prime brokers and hedge fund administrators.

The RiskAPI Enterprise product involves a software component that can be dropped into any programming language and enables the software developers used by clients to move beyond the constraints imposed by the Excel environment to offer risk management capabilities for an entire firm. Says Korin: “We were approached by service providers such as fund administrators, prime brokers and execution brokers that already provided some sort of reporting to their hedge fund clients but wanted to supplement their reports with risk information.”

Meanwhile, the Madoff case and a slew of subsequent revelations about Ponzi fraudsters masquerading as hedge fund managers have alerted industry members to the value of enhanced due diligence, and of third-party service providers that do not come with the conflicts of interest that may affect in-house staff.

“Outsourcing is cost-effective and takes advantage of outside expertise - most companies don’t have the international reach required to conduct due diligence globally,” says Doug Nairne, head of enhanced due diligence operations at risk screening and research firm World-Check. “In addition, using a third party also ensures that due diligence is conducted impartially. As a vendor we have no conflict of interest regarding a business transaction. Within a company there may be competing interests between the compliance department and the business unit pushing a deal.”

A few years ago the focus of due diligence was countering money laundering and the financing of terrorism, but with systems and procedures to highlight these risks now well bedded in, corruption and fraud have become a larger area of concern. “Companies are paying much more attention to where they are putting their money and who their business partners are,” Nairne says. “Even the basic background checks can often find a problem. Although you can never be certain of finding every skeleton in the closet, you do yourself a disservice by not finding the obvious ones.” ■