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In early 1995 a single derivatives trader in a small office in Singapore brought down the UK's oldest merchant bank. The collapse of Barings, personal bankers to the Queen, and Nick Leeson's leading role in that collapse have subsequently become the stuff of legend. His unauthorised positions in the Nikkei 225 (the Japanese equivalent of the FTSE 100) saw him run up \$1.3bn of liabilities – more than the entire capital and reserves of Barings. Investors saw their savings wiped out and 1,200 of his colleagues lost their jobs. When Dutch bank ING eventually agreed to assume nearly all of Barings' debt, it acquired this stalwart of the British banking industry for a mere £1.

Of course, Leeson is not alone in the hall of rogue-trading infamy. The head copper trader at Sumitomo, Yasuo Hamanaka, managed to disguise losses totalling \$1.8bn over a decade. During that time he performed as much as \$20bn of unauthorised trades a year.

But while both traders were clearly guilty of massive fraud, the blame is not theirs alone. Barings' fatal mistake was to allow Leeson to remain chief trader in Singapore while also being responsible for settling his own trades. Similarly, Hamanaka was able to hide his activities because he headed his section and had trade confirmations sent directly to himself, neatly bypassing the back-office – and with it any scrutiny or control.

In both instances the golden rule was broken: any group or individual with responsibility for the trading operation must be completely independent of the group that conducts risk reporting. The consequences for Barings' and Sumitomo's lack of scrutiny and effective risk management were devastating.

The fact is that taking a physical or financial position in any market – energy, commodities, futures – is an inherently risky process and needs to be managed accordingly. Unfortunately, what we are now seeing in the UK is a number of large energy consumers endeavouring to hedge their exposure to energy price risk and market volatility by entering the deep waters of active trading, but without the proper skills and necessary controls in place to manage the risk effectively. The only thing stopping these organisations losing billions of dollars is that they don't have billions to lose.

NECESSARY BUILDING BLOCKS A number of building blocks are required to create an effective risk management function, and any company planning a trading operation needs to ensure it has access to the knowledge and experience necessary to put them in place. These go beyond the deployment of sophisticated systems: they are at the heart of the business's structure, the way it organises itself and its appetite for risk.

The annals of trading history show that, to achieve reliable risk management, three primary groups with three different but clearly defined roles must exist within an organisation. These groups are

**CHRIS BOWDEN LOOKS AT HOW
TREASURERS CAN BEST MANAGE RISK IN
A TRADING ENVIRONMENT.**

generally referred to as management, front-office and back-office. The titles might vary between companies, but the functions they fulfil remain broadly similar regardless of their name.

The role of the management group is primarily the development, approval, implementation and oversight of all risk management policies and procedures. This includes the critical approval of the company's aggregated risk tolerance and the determination of the company's hedging and trading philosophy.

Risk management policy is firstly a question of corporate governance, and secondly a matter of execution and control. A policy expresses the highest-level view, which is why it is defined by the management group. At the heart of any risk policy is the company's decision on how much uncertainty to accept in its costs and revenues.

Risk management procedures, on the other hand, define how, at a management level, the company should execute the agreed policy. At the heart of the risk management procedure is the decision on how much freedom to permit managers in executing deals, the limits to be set, the approved instruments, systems and third parties involved.

These positions are usually encapsulated in a risk management policy and procedures document, which sets out what actions are acceptable, and what are not, for managers of the risk. The document offers a proactive alternative to a reactive risk management approach. It embodies the rules and benchmarks and is used to protect both board members and shareholders from inappropriate action, unexpected losses or changes in costs. In short, it gives direction to the manager of risk. It is fairly safe to say that Barings and Sumitomo did not have such a document or, if they did, it wasn't followed.

The process of drafting these rules can be as important as the document itself, and requires expert input. Therefore, in addition to representation from upper-level policymakers, any management group should have an expert risk technician or front-office risk manager, as well as a project manager who is involved in future hedging and trading decisions.

If the management function is to create the company's risk profile, the role of the front-office group is to shape it to gain maximum

Executive summary

- A number of large energy consumers are hedging their exposure to market volatility and energy price risk by entering the trading markets, but new players need the necessary controls in place to manage their risk.
- Three clearly defined groups must exist in any trading environment to manage potentially huge risk: management, front-office and back-office.
- A well drawn-up and properly enforced risk management policy and procedures document is vital.

value for the lowest acceptable risk. This requires it to determine future probabilities, such as the likely progression of energy prices, and to set price instruments in accordance with these probabilities and the company's own view on risk and reward, hedging and trading.

UNDERSTANDING THE ENERGY MARKET It is at this level that an in-depth understanding of the energy markets comes into its own. Predicting future movements to the level of accuracy required takes a great deal of skill and experience, and derives from detailed market analysis, including:

- an assessment of economic data such as production, consumption and heat rates (fundamental analysis);
- reference to historic movement and prices (technical analysis); and
- the use of sophisticated algorithms to determine future price or anomalies in pricing structure.

The front and middle-office is also responsible for structuring the company's energy trading portfolio. But since the forward curve – the path of the prices for future contracts – twists and flexes under the weight and pressure of buyers and sellers in the market, the portfolio needs to be continuously adjusted to be in line with the peaks and troughs that are created.

If all this is carried out effectively, the result is a streamlined energy risk management operation that enhances corporate earnings at the same time as mitigating the risks inherent in holding an energy portfolio. If it isn't managed correctly, the position is reversed, with potentially devastating consequences.

The final group in the successful risk management structure is the back-office. This is where all the clerical activity relating to the trading and hedging operation takes place. Once a transaction has been captured by the front-office, the back-office confirms its terms and conditions. The back-office also creates regular reports on trading activity from daily exception logs to weekly counterparty credit analysis and monthly portfolio stress tests and management summaries.

The back-office also performs the critical function of ex-post validation, by matching actual against expected returns to

BOX 1. Creating the back-office

Most organisations are familiar with the concept of managing operational risk, but particular aspects of managing risk associated with entering commodities markets require special attention.

Whereas establishing risk parameters and documenting them as appropriate policies and procedures are common procedures for a number of business functions, setting up a back-office function to ensure trading best practice is a highly specialised area.

The back-office verifies that trades have been executed appropriately, ensures that transactions are monitored and confirmed according to best practice, and provides centralised decision support, asset management and operational integration. It is also where day-to-day trade administration takes place through the use of specialised systems that store and track historical decision-making processes, validate and upload trades, and capture volume and exposure positions.

The back-office requires extensive industry and market data expertise, supplying and responding to:

- daily market prices and period calendars;
- current and historical industry data;
- site-by-site meter technical details and consumption;
- contract documentation;
- contracted volumes, charges and fix-by dates;
- customer benchmarks, billed rates and triggers;
- contract block volumes;
- intentions to tender and trade information; and
- a full execution audit trail.

Finally, the back-office provides standardised and bespoke reports for ongoing management and essential auditing purposes. These include regularly updated forward curve charts, historic trade against closing prices, monthly exposure, mark-to-market reports and additional management information.

authenticate the assumptions of the risk measurement models. It also performs the critical task of reconciling internal transaction and position records, with brokerage firm records and the periodic reporting to the board, management group and regulatory bodies where required.

Entering into competitive trading or hedging activities without a fully functioning risk measurement and reporting function can lead to substantial losses – as Sumitomo and Barings discovered.

Equally important for prudent portfolio and risk management is the presence of an internal firewall to separate these groups from each other. These groups might be part of the same company, but they conduct a series of essential checks and balances on each other. Breaching the firewall puts all the carefully planned risk management strategies in jeopardy, so they must be kept separate.

Taking an active energy portfolio enables companies to develop sophisticated hedging strategies and mitigating their exposure to increased price risk in volatile times. But it is not something that can be undertaken lightly, and businesses must give themselves the very best chance of success by ensuring they have the right skills to hand, whether in-house or provided by third parties through a business process outsourcing deal. If they don't, they are simply replacing a serious risk with a potentially devastating one.

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