

## KEY POINTS

- A number of significant risks have arisen for market participants and exchanges following the recent explosion in exchange-based commodities trading.
- Different methods of credit risk management have been adopted by commodity exchanges, including collateral arrangements, margin calls, mutual default funds, credit-rating tests and position limits.
- The insolvencies of LTCM, Ashanti and Amaranth illustrate some of the catastrophic consequences that can occur when things go wrong.
- The recent pronouncements made by various regulators on growth and how they will keep a watch on these markets going forward highlight the topical relevance of this subject.

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# Exposure management: key issues affecting energy exchange credit risk policy and procedures

The recent, exponential growth in the energy commodity markets – with record risks and record returns – has attracted a new class of investor to what was once a specialist market. The appearance of players such as pension funds, hedge funds and high net worth individuals has led to calls for greater regulatory supervision, to which regulators have responded with enquiries into the risks and challenges for market participants. For their part, energy exchanges must formulate systems to provide themselves and their trading members with the best possible protection against less scrupulous members or volatile markets.

Increasingly, regulators have begun policing the commodity markets, which has resulted in a growing need for awareness on the part of all market participants. On 17 November 2006, the UK Financial Services Authority ('FSA') and the US Commodity Futures Trading Commission ('CFTC') signed a Memorandum of Understanding ('MoU') designed to cement and facilitate co-operation between the two agencies on the exchange of information which will support cross-market surveillance operations.

In this article, we explore the key considerations shaping the credit risk policies and risk assessment procedures in these markets. We have focused mainly on the European powers' day-ahead markets and exchanges.

## TYPES OF PROTECTION

Methods of protection include, inter alia, imposing strict collateral requirements, defining acceptable margins and establishing mutual default funds.

This article explores the key considerations shaping the credit risk policies and risk assessment procedures in the energy commodity markets.

## Collateral

Most European energy exchanges require the following criteria to be met before collateral can be lodged:

- the collateral must be of a type and quality that meets the exchange's and the market's needs;
- once lodged, it must be possible for the collateral to be ringfenced and inalienable; and
- the exchange must have indefeasible first-ranking rights to the collateral, so that collateral can be effectively pledged and secured for its benefit. It is also usually important for an exchange to be able to enforce its security without local judicial consent or other approvals.

Some exchanges require members to post collateral at exchange-approved banks, which act as custodians and reinforce security arrangements over funds held in pledged or non-pledged bank accounts. In order to diversify risk, some exchanges increase the number of approved banks at which collateral is custodialised.

In some jurisdictions, local law may place 'proportionality' requirements on an exchange's reliance on collateral, as is the case for both the European Energy Exchange ('EEX') in Germany and the Energy Exchange Austria ('EXAA'). This means that an exchange's collateral demands must bear an accurate relation to the members' obligations and the market's risk profile.

## Acceptable margins

It is advisable for exchanges to define 'acceptable margin' to avoid disputes over what constitutes acceptable margin and late payments. Without a clear definition, it is debatable whether energy-related transaction fees and VAT on transactions should be distinguishable from margins held by the exchange. It is not always clear how margin funds should be treated in the event of a member's insolvency, and this would require clear codification by the exchange in question, in conjunction with a consideration of local insolvency laws.

Although daily collateralisation reduces risk and capital usage (both economic and regulatory), the sheer size of gross market trading volumes may lead to operational risks affecting an exchange's ability to accurately net a member's collateral against that member's gross exposure. In addition, there can be uncertainty as to the enforceability of netting rights in some jurisdictions, with that uncertainty increasing when netting agreements are not in place.

A key risk in over-relying on margin calls for credit risk management is that some trading counterparties may not have ready access to funds needed to meet repeated margin calls. This risk has been repeatedly highlighted in a number of high-profile insolvencies in recent years: for example, Long Term Capital Management ('LTCM') and Ashanti (see below) both demonstrated the

## Feature

credit risk management dangers of looking at net post-collateral exposures rather than gross trading volumes and/or monitoring the pre-collateral risk profile of the counterparty's total trading portfolio.

To avoid over-reliance on margin calls, exchanges such as Nord Pool Clearing, for example, apply the Standard Portfolio Analysis of Risk ('SPAN') system to simulate aggregate net losses that could result from a Clearing Member's open positions. SPAN calculates collateral requirements on an overall portfolio risk basis.

### Mutual default funds

Many European power exchanges have now established (or are considering the establishment of) mutual default funds. Where an exchange does not have such a fund, the exchange acts only in relation to that defaulting member's positions and collateral, without applying non-defaulting members' collateral to meet the shortfall. This leaves the exchange without the communal 'safety net' otherwise found in a mutual default fund and, instead, forces reliance upon monitoring credit risk and issuing collateral calls for security.

Commentators are divided as to the appropriateness of relying on a mutual default fund as a key component of an exchange's credit risk management. The main advantage is that a default fund is thought to be an effective deterrent to imprudent conduct, making clearing members more vigilant with respect to the conduct of their non-clearing members. On the other hand, it is suggested that a mutual default fund encourages 'bad' market conduct by high default/credit risk market participants. Furthermore, members with high credit quality and low default risk may object to 'subsidising' higher-risk market participants' trading 'mistakes'. A mutual default fund also allows an exchange to achieve a target level of risk protection, because over-reliance on individual members' collateral can prove to be inefficient if the defaults are not perfectly correlated.

In evaluating whether to establish a mutual default fund, exchanges should consider the following:

- the level of contributions required from each member and, in particular, how

creditworthiness differences among members should be addressed in assessing adequate contribution levels;

- whether there is a clear procedure in place to review members' contributions on a regular basis as well as immediately should a member's financial condition suddenly change;
- whether the exchange is able and willing to contribute any of its own funds (from its equity reserves or otherwise), and if so, how regularly, to such a mutual default fund; and
- whether local laws on liability or (if applicable) equitable concepts could effectively limit or disallow such loss sharing. In some jurisdictions, it may be more appropriate to use other risk management tools (such as the establishment of a Risk Management Committee, central bank controls, and appropriate insurance policies), thereby effectively placing the onus on the exchange, and not on its members, to limit loss.

In addition to the above collateral and security matters, European power exchanges use a number of methods, such as assessment of participants' creditworthiness and limiting trading positions, to monitor lodged collateral.

### Credit rating

Currently, a number of European energy exchanges use a system of credit risk management that relies on periodic reviews of members' creditworthiness. Wide discrepancies are found in the depth and extent of the credit risk analyses carried out by power exchanges across Europe.

Traditionally, heavy reliance has been placed on external credit ratings, to the extent available, of rated entities. In addition, most energy exchanges assign an internal 'credit rating' to their members, many of which are not rated. An internal credit rating system is part-quantitative/part-qualitative and flexible enough to apply to a wide range of members, often including hedge funds, trusts, municipal entities and broker-dealers. While there are difficulties in establishing an appropriate internal credit rating model,

such a model is likely to be more effective than an informal, judgment-based model, because it can be tailored to the relevant exchange's specific sensitivities and local legal and market considerations.

Nonetheless, explicit use of clearly articulated ratings-based measures can be a useful and objective (if externally based) yardstick for an energy exchange to evaluate the quality of its lodged collateral. As credit support is only ever as sound as the credit support provider, differences in creditworthiness should factor in the size of market positions taken by a member and the amount of credit risk the exchange takes on for that member.

Of course, difficulties can arise: for example, in Europe, the energy trading arms of most exchange participants have tended to be unrated, ringfenced subsidiaries, reflecting the relative volatility of the markets in which they trade. This 'separation' may, furthermore, be required by certain regulators and financial services legislation. In such instances, reliance on external credit ratings may be a hindrance rather than a help to the creation and fostering of market liquidity and competition.

### Position limits

Certain exchanges, such as Nord Pool, set position limits in particular markets to prevent their members from holding more than a designated amount of the total net volume of contracts or open capacity in that market. Position limits are highly discretionary and rarely enforced by most European energy exchanges. Nevertheless, clearly articulated trading and position limits could serve as effective 'check and balance' monitors for credit risk. A position limit system could be bolstered by requiring exchange members to provide, on an ongoing basis, specified forms of financial information to be used by the exchange in monitoring creditworthiness changes that could affect the credit risk assumed by the exchange. For example, EXAA sets a clear marker of 80 per cent for any member's utilisation of collateral. If this level is breached, EXAA automatically calls for additional collateral or requires that member to reduce its positions.

**Biog box**

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**IMPACT OF HIGH-LEVEL INSOLVENCIES LTCM**

LTCM was a US hedge fund whose investments were mainly focused on fixed income arbitrage (or convergence) trades in European, Japanese and US bonds. In 1998, it nearly collapsed following the credit default of the Russian government on short-term loans. Large-scale investor panic ensued and 52 per cent of its value was lost as a result.

The Federal Reserve Bank of New York was forced to ask 14 investment banks to provide LTCM with more than \$3.6bn to prevent its collapse. The rescue was prompted by concerns that LTCM's collapse would lead to further instability in the international markets, due to the extent of exposure that numerous financial institutions had to its losses.

Commentators noted that LTCM's leverage was excessive, even compared to that of comparable hedge funds and was one of the main reasons for its downfall. LTCM was believed to have market positions of approximately \$200bn supported by a capital base of less than \$5bn.

Serious questions were raised by the downfall of LTCM, relating mainly to the need for regulation in the hedge fund industry. Questions also arose about the risk appetite and control systems of banks in their dealings with hedge funds. Prior to its collapse and, in light of LTCM's reputation, many banks did not require any initial margin from LTCM for financing and received minimal information about its trading positions.

**Ashanti**

Ashanti Goldfields (Ashanti), a Ghanaian company, was one of the world's largest gold mining companies. Ashanti operated a sophisticated hedging policy in order to survive sustained low gold prices in the 1990s. About half of Ashanti's gold reserves were locked into future sales. Ashanti also invested heavily in high-risk derivatives known as 'exotics'. The derivatives contracts provided for margin limits requiring Ashanti to make cash deposits in the event of sharp adverse price fluctuations. These margin limits were far lower than those in contracts with its competitors, as Ashanti had a poor credit rating due to the perceived political risk posed by Ghana.

When restrictions were imposed by the European Central Bank, gold prices suddenly increased in 1999 and Ashanti's hedge book changed from an asset of \$250m to a liability of \$570m. Ashanti's 15 hedging counterparties were, therefore, in a position to make margin calls of \$270m, which Ashanti could not afford.

Ashanti managed to survive the crisis by arranging a series of standstill agreements with its hedging counterparties. Ashanti's hedging counterparties eventually agreed to grant it a 'margin holiday' of three years on its hedge contracts in exchange for warrants that diluted Ashanti's equity by 15 per cent. A bridging loan of £100m was also required.

**Amaranth**

Amaranth Advisors LLC (Amaranth) was one of the largest hedge fund collapses in recent years. Founded in 2000, Amaranth was a diversified hedge fund specialising in energy trading, merger arbitrage, convertible bond and short-long strategies. It was among the biggest players in the energy market, managing assets of \$9.5bn a month prior to its collapse.

In September 2006, Amaranth imploded after losing 65 per cent of its assets through highly leveraged and insufficiently hedged investments in natural gas contracts. Amaranth responded by selling off its energy trading positions. It continued to be unable to meet margin calls, and was eventually suspended and liquidated.

A number of investors threatened to bring lawsuits against Amaranth for misleading them about the amount of concentrated risk taken on by it, as they felt it should not have been possible for a multi-strategy hedge fund to have such large losses in one asset class.

Subsequently, commentators have criticised Amaranth's business model and risk controls. In particular, analysts noted the following problems with Amaranth: (1) insufficient risk controls; (2) high leverage; (3) poor transparency; (4) heavily concentrated investment and performance dominated by one strategy; (5) self-administration, with no third party verification of returns; (6) poor liquidity terms; and (7) lack of any strategy for scaling down large exposures quickly.

Amaranth's collapse renewed questions about the need for further regulation of the

hedge-fund industry, and investigations into Amaranth's losses were launched by both the State of Connecticut's Department of Banking and the CFTC.

**CONCLUSION**

This discussion is particularly topical in light of the FSA's March 2007 review,<sup>1</sup> in which the FSA identified what it characterised as significant risks for commodity market participants (see bullets below).

- System capacity: The systems and operations of existing trading platforms may not be able to handle the significant increases in volume.
- Staff expertise: The growth of market entrants (both firms and exchanges) has led to a finite pool of staff expertise being stretched in an unprecedented manner.
- Market volatility: Increased volatility in some markets has made it even more important that market participants have appropriate risk management systems and controls in place. Related to this is the risk portfolio effect of the increasing investment trend of acquiring physical assets (eg power stations).
- New market participants: The relative lack of experience and new techniques of participants who are unfamiliar with established trading practices will alter the risk profile of the market.
- Market abuse: Firms and exchanges need to put in place appropriate measures to detect and prevent improper practices.

Given the increasing scrutiny on the commodity markets from a European regulatory perspective, it is clear that exchanges also will be under pressure to evolve with the deepening sophistication and diversification of their customers. A significant part of this will involve the formulation of effective policies to manage credit risk in markets that have seen exponential growth in recent years. ■

<sup>1</sup> 'Growth in Commodity Investment: Risks and Challenges for Commodity Market Participants': FSA Markets Infrastructure Department (March 2007), [http://www.fsa.gov.uk/pubs/other/commodity\\_invest.pdf](http://www.fsa.gov.uk/pubs/other/commodity_invest.pdf).