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Taking Care of Risky Business: Credit Risk Management in Spot Markets

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The collapse of Enron and recent energy industry credit crunch has again brought the issue of energy market credit risk management to the fore. An oft neglected area in these discussions is the management of spot market credit risk. Unlike forward markets, where fairly sophisticated risk management processes are available, the management of credit risk in many spot markets remains rudimentary. Changes to a few key processes, however, could significantly improve the way this risk is managed.

Background

As deregulation progresses, multi-lateral spot markets are becoming firmly established as the predominant model for spot trading of electricity. Most multi-lateral spot markets use a participant-backed risk pool to underwrite all trading. As a result, the default of a market participant impacts all other participants, and may even affect the ongoing viability of the market operator.

Can't happen here...

... according to (California) PX Chief Executive Officer George Sladoje in remarks today...it is highly unlikely that what happened in the Midwest could ever happen at the PX."

July 28, 1998., CalPX Press Release.

...or maybe it can?

...the liquidation proceeding is an attempt to recover approximately \$250 million Edison is in default on to CalPX market participants.

February 2, 2001., CalPX Press Release.

In order to minimize the occurrence and severity of such events, all spot markets have prudential processes in place for the management of credit risk. However, the processes currently implemented by many spot markets are not sufficient to manage the risks inherent in highly volatile markets such as electricity – a fact clearly evidenced by credit defaults in California and other markets.

With better credit risk management the impact of these defaults could have been reduced or avoided. While the prudential processes adopted by spot markets differ, this paper discusses a number of frequently observed deficiencies, and practical solutions for addressing them.

Deficiencies and Solutions

Methodology and Frequency of Credit Limit Determination

The level of credit extended to a market participant is defined by its *credit limit*. This consists of *unsecured credit*, determined through assessment of the participant's financial standing, and *secured credit*, based upon surety provided by the participant, such as letters of credit, etc.

Frequently observed deficiencies with the process for determining spot market credit limits include:

- Standard procedures are not used for determining unsecured credit limits, resulting in inconsistent credit assessments.
- Unsecured credit is often established without consideration of the amount of loss the market is capable of absorbing in the event of default. Under a socialized risk regime this can lead to significant unsecured exposures for all participants.

- Limits are reviewed between quarterly and annually, however, as recent events have shown, a participant's financial standing can disintegrate in a matter of days or weeks.
- Participants' credit limits are set based upon historical consumption. This fails to consider the credit the participant is capable of managing, as well as potentially significant changes to its total business activity. e.g. win/loss of customers due to retail competition.

Steps which can be taken to address these issues include:

- Standardize the determination of unsecured credit. This should include the use of a credit scoring methodology, to provide statistical consistency to each assessment, coupled with an assessment of the collective loss tolerance of the market.
- Automate the determination of unsecured credit and perform reviews on a more frequent basis, e.g. daily.
- Allow participants to dynamically adjust their secured credit, provided minimum overall credit limits, as defined by the market operator, are still maintained.

These changes would improve the management of credit risk, as well as providing greater flexibility for participants to manage their cashflow.

Timeliness of Credit Monitoring

In the time period between the transaction of a trade and the calculation of credit exposures, the market operator is unaware of whether a participant's trading has put them in breach of their credit requirements. Some spot markets experience a lag of three or more days¹ – during which time a significant credit exposure can accumulate.

The major cause of this delay is the significant dependency many spot markets have created between market settlement and credit monitoring. While related, the objectives of these two processes can sometimes compete. Settlement is focused upon producing an accurate bill, within the bounds of acceptable timeliness, whereas credit monitoring focuses upon timely risk assessment, within the bounds of acceptable accuracy.

In order to improve the timeliness of credit monitoring this nexus must be broken, by decoupling these two processes along with the systems and input data which support them. While this necessarily means that credit assessment outputs will not be “settlement quality”, they do not need to be. The short-term objective is to reduce the delay in credit assessment to under a day, with the eventual goal of real-time credit assessment.

Length of the Billing Period

No matter how sophisticated the monitoring processes in place, the “acid test” of a participant's creditworthiness is whether they pay their bill. Until this occurs all outstanding amounts remain “at risk”. The maximum exposure to a participant at any point in time is equal to the sum of:

- outstanding billed amounts from the previous period
- unbilled amounts from the current period

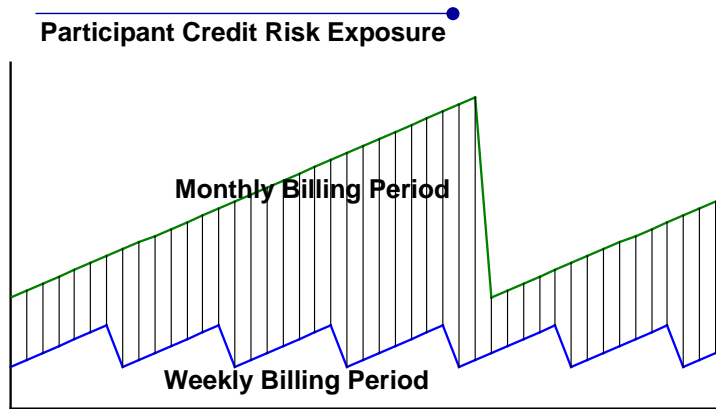
“Citing the overnight downgrade of major United States power trader Enron Corp, Standard & Poor's has reiterated its concerns about counterparty exposure in the Australian electricity market.”

Source: Asia Pulse,
December 3, 2001.

¹ At specific times of the month, some markets are known to experience delays of up to 10 days.

- trading after credit default, incurred as a result of the “obligation to serve”. i.e. continuing to supply electricity while the defaulting participant’s customers are transferred to another supplier.

Many spot markets, particularly in the US, operate on a monthly billing cycle. If we assume a 30 day month, and that the bill is payable in the middle of the following month, this produces a maximum of 45 days exposure, without considering the obligation to serve. If, however, the billing period is one week, payable within five days, this would produce a maximum of 12 days exposure – a significant reduction in risk. A number of electricity spot markets have already achieved this goal.



Credit Risk across Multiple Markets

Spot markets for electricity are currently quite fragmented, having developed in a largely uncoordinated manner. As a result, it is relatively common for an organization to be a participant in multiple spot markets, incurring obligations in each.

Currently, however, credit information about a participant in one market is seldom known to the operators of other markets. As a result, unsecured credit is assigned without consideration of potential obligations in other markets. This poses the risk that, although each spot market may have dutifully completed its own credit analysis, the aggregate exposure of a participant may exceed its credit capacity.

Solving this problem requires the sharing of credit information across spot markets, in order to assess participants’ overall credit worthiness. This could take a number of forms, ranging from the exchange of information regarding settlement obligations, to the establishment of a centralized spot market clearinghouse, responsible for setting limits and monitoring participant credit across all participating markets. The recent trend towards spot market consolidation, in North America and other geographic regions is a de-facto move in this direction.

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