

CREDIT ISSUES IN THE ENERGY MARKETS: CLEARING AND OTHER SOLUTIONS

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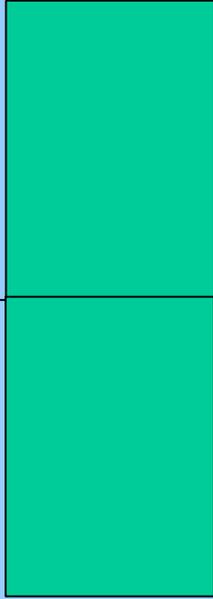
Traditional Credit Risk Management in the Energy Industry

- ⊕ **Credit risk management in the energy industry**
 - ⊕ **Based on bilateral contracts. The negotiation process is typically time consuming and cumbersome.**
 - ⊕ **Collateralization of exposure over certain credit thresholds**
 - ⊕ **Calculation of current credit exposure is difficult due to limited price discovery and often adversarial relationships between counter parties**
- ⊕ **Huge working capital requirements due to collateralization, even if the market risk is low**
- ⊕ **Asymmetric collection of collateral is a major issue**

Value-at-Risk vs. Credit Risk

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10,000 MMBtu @ \$3.00



10,000 MMBtu @ \$3.01

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Working Capital Requirements

- ⊕ **A position with no apparent risk**
- ⊕ **Suppose the price increases to \$4.00**
- ⊕ **The supplier has incentives to walk away from the contract but cannot post collateral**
- ⊕ **The buyer requires collateral**
- ⊕ **The outcome: Cash needed to support the position may be quite significant**
- ⊕ **Run-on-the-bank scenario**
 - ⊕ **Cash collateral posted with an impaired entity is replaced with letters of credit**
 - ⊕ **Collateral provisions on the other side are being strictly enforced**
 - ⊕ **Other parts of a company have cash flow needs that take precedence over the trading operation**

Clearing as a Solution to Energy Markets Crisis

- ⊕ **Clearing and multilateral netting is seen as a remedy to current difficult credit issues that paralyze energy markets**
- ⊕ **The history of the financial industry is full of examples of innovations that were rejected by the market**
- ⊕ **Sometimes even a minor design flaw results can result in repudiation of a financial innovation by the potential customers**
- ⊕ **Example: NYMEX electricity contracts**

Potential Challenges: Physical Transactions

- ⊕ **Energy transactions involving physical delivery represent a serious challenge**
 - ⊕ **Many energy transactions involve transfers of physical commodities that require highly specialized organizations and processes**
 - ⊕ **Most clearing members are financial institutions with little or no physical presence in the market**
 - ⊕ **The outcome of matching may be less than satisfactory from the point of view of access of matched counter parties to the transmission/transportation infrastructure or ability to execute a physical transaction**

Potential Challenges: Lack of Standardization of Energy Contracts

- ⊕ **Many energy contracts are highly unique and don't lend themselves to clearing**
- ⊕ **Clearing may be limited to highly liquid and short-term transactions**

Potential Challenges: Working Capital Requirements

- ⊕ **Conventional wisdom: clearing reduces cash requirements related to credit risk management through netting of positions**
- ⊕ **Netting creates an even playing field for small and big players**
- ⊕ **Some industry participants have concerns this may not be true in all cases**
- ⊕ **In practice, bilateral credit arrangements require collateralization only if a credit threshold is exceeded**
- ⊕ **Clearing members will set the threshold at zero for their customers**
- ⊕ **High volatility of energy prices will result in high margin requirements as defined by clearing members**

Other Issues

- ⊕ **The danger of concentration of credit risk in a few institutions with all the potential threats to the stability of the financial system**
- ⊕ **Increased reporting and regulatory compliance burden**

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