

Risk Management: An Econometric Analysis of Risk in Energy Market

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Keywords: Electricity prices, Model Confidence Set, Risk management, AR–GARCH, Extreme Value theory.

The energy market specifically electricity market all over the world is going through a great transition. From being a regulated market with no or very low uncertainty in future earnings, the market is now becoming liberalised and deregulated. The prices of electricity are no longer determined by regulator but by market participants. Price fluctuation and partial comovement with demand are a feature inherent in the liberalised electricity market. The most vital test for the new market regime is its ability to manage the excessive volatility inherent in a system with substantial capacity variations from year to year and from season to season. This newly created climate requires protection against market risk and has become very essential. In this paper, we proposed an AR–GARCH–type–EVT with various innovations and their skewed variants based Value at Risk and Conditional Value at Risk for electricity price risk quantification for different emerging electricity market. Value at Risk gives an estimate for the maximum daily electricity price change associated with a confidence (likelihood) level, with conditional Value at Risk as an alternative risk measure and provide good source of information in designing risk management strategies. We therefore carry out risk analysis on energy market using **rugarch** package in *R* programming language. Our findings suggest that there is no correct exceedances for the out of sample Value at risk performance and hence Extreme Value Theory approach has been adopted parametrically to compute the value at risk and the conditional value at risk for the various market under study. This paper applies the Model Confidence Set (MCS) procedure of Hansen, Lunde, and Nason (2003) to the different models which selects the best model with a given level of confidence.

References

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