

Financial Portfolio Optimization in Turkish Electricity Market via Value at Risk

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Abstract : Electricity has an indispensable role in human daily life, technological development and economy. It is a special product or service that should be instantaneously generated and consumed. Sources of the world are limited so that effective and efficient use of them is very important not only for human life and environment but also for technological and economic development. Competitive electricity market is one of the important way that provides suitable platform for effective and efficient use of electricity. Besides benefits, it brings along some risks that should be carefully managed by a market player like Electricity Generation Company. Risk management is an essential part in market players's decision making. In this paper, risk management through diversification is applied with the help of Value at Risk methods for case studies. Performance of optimal electricity sale solutions are measured and the portfolio performance has been evaluated via Sharpe-Ratio, and compared with conventional approach. Biennial historical electricity price data of Turkish Day Ahead Market are used to demonstrate the approach.

Keywords : electricity market, portfolio optimization, risk management, value at risk

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