

Speculative Trading of Electricity Contracts in Interconnected Locations

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Abstract:

We derive an investor's optimal trading strategy of electricity contracts traded in two locations joined by an interconnector. The investor employs a price model which includes the impact of her own trades. The investor's trades have a permanent impact on prices because her trading activity affects the demand of contracts in both locations. Additionally, the investor receives prices which are worse than the quoted prices as a result of the elasticity of liquidity provision of contracts. Furthermore, the investor is ambiguity averse, so she acknowledges that her model of prices may be misspecified and considers other models when devising her trading strategy. We show that as the investor's degree of ambiguity aversion increases, her trading activity decreases in both locations, and thus her inventory exposure also decreases. Finally, we show that there is a range of ambiguity aversion parameters where the Sharpe ratio of the trading strategy increases when ambiguity aversion increases.

Keywords: Ambiguity aversion, model uncertainty, electricity interconnector, statistical arbitrage