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The robustness of agent-based models of electricity wholesale markets

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Abstract

Agent-based modelling is an attractive way of finding equilibria in complex problems involving strategic behaviour, particularly in electricity markets with transmission constraints. However, while it may be possible to demonstrate convergence of learning behaviour to a Nash equilibrium, that is not sufficient to establish that the equilibrium is robust against more sophisticated strategy choices. This note examines two particular forms of agent-based modelling used in electricity market models, both variants of mark-up pricing, and demonstrates that they are robust against other strategies.

Keywords

agent-based modelling, electricity markets, mark-up equilibria, stability, oligopoly, learning

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