

Supply function equilibria in transportation networks

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Pär Holmberg and Andy Philpott

Abstract Transport constraints limit competition and arbitrageurs' possibilities of exploiting price differences between commodities in neighbouring markets. We analyze a transportation network where oligopoly producers compete with supply functions under uncertain demand, as in wholesale electricity markets. For symmetric networks with a radial structure, we show that existence of symmetric supply function equilibria (SFE) is ensured if demand shocks are sufficiently evenly distributed. We can explicitly solve for them for uniform multi-dimensional nodal demand shocks.

Keywords Spatial competition, Multi-unit auction, Supply Function Equilibrium, Trading network, Transmission network, Wholesale electricity markets

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Contact par.holmberg@ifn.se
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