

On Modelling and Solving Risk-Averse Stochastic Equilibrium Problems

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Abstract :

Over the last decades and in a worldwide trend, many industries that were considered as "natural monopolies" in the 1970s (electricity, telecommunications, natural gas, water supply) were restructured to introduce competition into one or more of their horizontal segments. Nevertheless, even in the most liberalizing countries, some strategical sectors continue to be subject to regulations in quality, price and entry. Such is the case for networks transmitting and distributing electricity or transporting natural gas.

For these oligopolistic industries, the regulatory mechanisms have important implications not only for supporting wholesale and retail competition but also to maintain the network reliability. To have a full understanding of the market behaviour, it is necessary to understand the impact of distortions introduced by the regulator when capping prices, or when applying rewards and incentives for efficient production, like emission allowances.

In this talk we consider equilibrium problems for a market with competing risk-averse agents that try to maximize profit subject to coupling constraints resulting from regulatory interventions or market clearing conditions.

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