

Lecture Series of the Research Institute for Supply Chain Management

Friday, January 17, 2025, 12:30 pm



Building TC, Room TC 4.05
Welthandelsplatz 1,
1020 Vienna

STEPHEN DISNEY:

THE DYNAMICS OF AGRICULTURAL SUPPLY CHAINS

Pork products account for one-third of all meat consumed; half of all pork originates from China. Traded as lean hogs, fattened, four-month-old piglets exhibit a highly variable sales price, often fluctuating +/- 40% within a few months. To pinpoint the source of this dynamic uncertainty, we build a stylized model of the pig supply chain using difference equations and z-transforms to study the dynamics of the pork production system. The extended lead times, where output occurs in five batches between 16 and 40 months after the initial decision (to grow a breeding sow), lead to some counter-intuitive inventory behaviour that is contrary to normal inventory theory.

Stephen Disney is currently a Professor of Operations Management within the Management department at the University of Exeter Business School. Professor Disney's research interests involve the application of control theory and statistical techniques to operations management and supply chain scenarios to investigate their dynamic, stochastic, and economic performance. Stephen has a particular interest in the bullwhip effect, forecasting, and inventory management.

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