

The Hong Kong University of Science and Technology
Dept of Information Systems, Business Statistics
and Operations Management

Frontiers in Operations Management Workshop



**How Does Risk Hedging Impact Operations?
Insights from a Price-setting Newsvendor Model**

by

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Date : **3 December 2021 (Friday)**
Time : **2:30 - 3:00 PM**
Venue : **Room G012, LSK Business Building, HKUST**



Abstract:

Financial asset price movement impacts product demand, and thus influences the pricing and production decisions of a firm. We develop and solve a general model that integrates pricing, production, and financial risk hedging decisions for firms of newsvendor type. We find that in general, the presence of hedging reduces the optimal price; it also reduces the optimal service level when the asset price positively impacts the product demand (“asset price benefits demand”), while it may increase the optimal service level by a small margin when the impact is negative (“asset price hurts demand”). We construct the mean-variance efficient frontier that characterizes the risk-return trade-off and quantify the risk reduction achieved by the hedging decision. Our numerical case study using real data of Ford Motor Company shows that the markdowns in pricing and service levels are small under our model, and the hedging decision can substantially reduce risk without materially decreasing operational profit.

Bio:

Dr Liao Wang obtained her Ph.D. degree in Operations Research from Department of Industrial Engineering and Operations Research at Columbia University in 2017. Dr Wang holds a BSc (Hons) in Quantitative Finance from National University of Singapore and MEng in Financial Engineering from Cornell University. With research interest lying on the interface of operations management and finance, Dr Wang develops models and methods for integrated operational and financial risk management problems. She has published on leading journals including Operations Research and Production and Operations Management.

All interested are welcome!
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