

# The Hong Kong University of Science and Technology

Dept of Information Systems, Business Statistics  
and Operations Management  
Dept of Industrial Engineering & Decision Analytics  
Joint Seminar Announcement



## Supply Diversification under Random Yield: The Impact of Price Postponement

by

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**Date** : 4 December 2020 (Friday)  
**Time** : 10:30 - 11:45 am  
**Venue** : Online via Zoom



**Abstract:** Supply diversification and price postponement are two common mechanisms for dealing with supply yield uncertainty. In this talk, we investigate the interaction between the two aforementioned strategies and provide insights on how to effectively integrate them in combating supply yield risk. Specifically, we study a firm's pricing and sourcing decisions under supply yield uncertainty, and compare them under two distinct pricing schemes to investigate the impact of price postponement: (1) ex ante pricing - the firm simultaneously makes the sales price and sourcing decisions before production takes place; (2) responsive pricing - the pricing decision is postponed until after the yield realization. We find that the effect of price postponement on the optimal sourcing decision varies. With one unreliable supplier, responsive pricing mitigates the overage and the underage risks imposed by yield uncertainty, and results in a lower [higher] optimal order quantity than that under ex ante pricing when the procurement cost is low [high]. With two unreliable suppliers, when the sole-sourced supplier's reliability is low [high], responsive pricing promotes [discourages] supply diversification; when the sole-sourced supplier's reliability is moderate, responsive pricing promotes [discourages] supply diversification when its unit procurement cost is low [high]. The composition of supply portfolio also has a fundamental impact on such strategic interaction: When the supply portfolio consists of one unreliable and one reliable supplier, diversified sourcing is never optimal under ex ante pricing, but may be optimal under responsive pricing. Finally, we conclude by comparing our results with those obtained under random capacity model and discussing several related extensions to provide additional insights in mitigating supply yield risk.

**Bio:** Dr Guang Xiao is an Assistant Professor at Department of Logistics and Maritime Studies, Hong Kong Polytechnic University. He received his bachelor degrees in Mathematics and Philosophy from Peking University, master degree in Operations Research from University of Delaware, and Ph.D. degree in Operations Management from Washington University in St. Louis. His research interests include supply chain risk management, sustainable and socially responsible operations, interfaces of operations and finance/marketing, etc. His research work has been published in *Manufacturing & Service Operations Management*, and *Production and Operations Management*.

All interested are welcome!  
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