

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

A Responsive Pricing Retailer Sourcing from Competing Suppliers Facing Disruption

by

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Time: 10:30am-11:30am
Venue: M106, Li Ka Shing Tower
The Hong Kong Polytechnic University
(Conducted in English)

Abstract:

We study the case of a retailer who sources from two strategic suppliers subject to independent or correlated disruptions and sets the retail price after delivery. We model this problem as a Stackelberg-Nash game with the suppliers as leaders and the retailer as a follower, and obtain explicitly the equilibrium of the game. We show that the total order quantity in equilibrium does not exceed the abundant supply, defined as a threshold above which extra units will be salvaged. We study cases in which the retailer orders from one perfectly reliable supplier and one unreliable supplier, and two correlated unreliable suppliers. In the latter case, the suppliers chosen are based on combining consideration of wholesale prices and reliabilities. We show that increasing reliability may hurt the suppliers when competition level is high. For two unreliable suppliers, it is consistent with the literature that at the equilibrium, the retailer's profit increases in the supplier disruptions correlation, but the suppliers' profits may increase in that correlation. We also show that the random disruption assumption is not a particular case of the random capacity assumption.

Bio:

Tao Li joined the Operations Management & Information Systems department in the Leavey School of Business at Santa Clara University in Fall 2012 as an assistant professor.

Professor Li's research interests include supply chain management with a special emphasis on sourcing strategy with unreliable suppliers, supply chain coordination, and the operations-marketing interface. His scholarship has appeared in academic journals such as *Production and Operations Management*, *European Journal of Operational Research*. He is the recipient of the Leavey School of Business *Extraordinary Research Award*.

Professor Li teaches operations management for the Business School's accelerated MBA program and undergraduate core curriculum. He is the recipient of the ACE (Accelerated Cooperative Education Leadership Program) *Outstanding Faculty Award* in 2016, and the Leavey School of Business *Extraordinary Teaching Award* multiple times.

Professor Li received a B.S. in material science and engineering, and a B.S. in financial management, as well as his M.S. in management science and engineering from Tianjin University (China). In addition, he received the MBA and M.S. in supply chain management from The University of Texas at Dallas, where he earned his Ph.D. in 2012.

Professor Li serves as a member of Editorial Review Board for *Production and Operations Management* and the treasurer of the *Chinese Scholars Association for Management Science and Engineering*. He has been a regular reviewer for top journals including *Management Science*, *Operations Research*, and *Manufacturing & Service Operations Management*.

Please email to irene.lam@polyu.edu.hk for enquiries.

All are welcome!