

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



Regret in the Newsvendor Model with Demand and Yield Randomness

by

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Time : **10:30 - 11:45 am**
Zoom ID : **925 3222 9116 (passcode 195299)**



Abstract:

We study the fundamental stochastic newsvendor model that considers both demand and yield randomness. Although partial statistical information and empirical data are often accessible, it is usually difficult in practice to describe precisely the joint demand and yield distribution. We combat the issue of distributional ambiguity by taking a data-driven distributionally robust optimization approach. We adopt the minimax regret decision criterion to assess the optimal order quantity that minimizes the worst-case regret across all hedged distributions. Then we present several properties about the minimax regret model, including optimality condition, regret bound, and worst-case distribution, and we show that the optimal order quantity can be determined via an efficient golden section search. Finally, we present numerical comparisons of our data-driven minimax regret model with data-driven models based on Hurwicz decision criteria and with a minimax regret model based on partial statistical information on moments.

Bio:

Dr Zhi Chen is an Assistant Professor in the Department of Management Sciences, College of Business, City University of Hong Kong. Dr Chen's research interests include (1) decision-making under uncertainty with different levels of data availability and its applications in decision analysis, operations management, and engineering; (2) cooperative game theory for joint activities and its applications in production economics, resource pooling, and risk management. His works appear in leading journals such as Management Science, Operations Research, Mathematical Finance, and Transportation Science.

All interested are welcome!

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