Analysis of Conditional Value-at-Risk for newsvendor with holding and backorder cost under market search

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Abstract

We consider a distribution system with one supplier and two retailers. For the two retailers, they face different demand and are both risk averse. We study a single period model which the supplier has ample goods and the retailers order goods separately. Market search is measured as the fraction of customers who unsatisfied with their “local” retailer due to stock-out, and search for the goods at the other retailer before leaving the system. We investigate how the retailers game for order quantity in a Conditional Value-at-Risk framework and study how risk averse degree, market search level, holding cost and backorder cost influence the optimal order strategies. Furthermore, we use uniform distribution to illustrate these results and obtain Nash equilibrium of order strategies.

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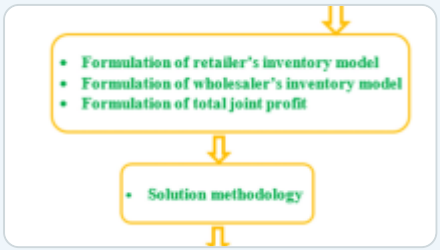

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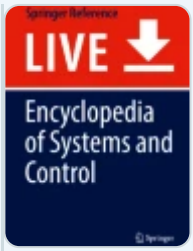

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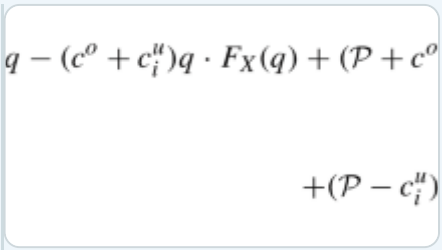

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