论文

信息共享受限条件下的供应链网络系统牛鞭效应控制策略

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摘要：

研究在信息共享受限条件下供应链网络库存系统的牛鞭效应控制问题, 建立了包括市场需求、信息可获得性、信息及时性等不确定性因素的库存网络系统状态转移模型, 从系统内部动力学机制的角度分析了牛鞭效应的成因, 提出了动态库存控制策略, 并给出了策略参数设计的线性矩阵不等式组算法. 运用系统稳定性理论, 深入分析了信息共享对牛鞭效应的影响, 并通过仿真结果验证了库存控制策略的有效性和实用性.

关键词： 供应链管理　牛鞭效应　库存控制　信息共享

Bullwhip effect control strategy in supply chain networks with limited information sharing

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Abstract:

The bullwhip effect problem in supply chain networks with limited information sharing is studied. Based on the dynamic mechanism of inventories in supply chain networks, a supply chain inventory network system state transition model
is presented, which includes uncertainties of demands, information availability and fluency. Then a dynamic inventory control
strategy is proposed and transformed into the optimization problem of linear matrix inequalities. Furthermore, the value of information sharing in reducing the bullwhip effect is studied. Simulation results show the effectiveness and feasibility of the proposed method in reducing bullwhip effect and in improving supply chain performance.

Keywords: supply chain management, bullwhip effect, inventory control,information sharing

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