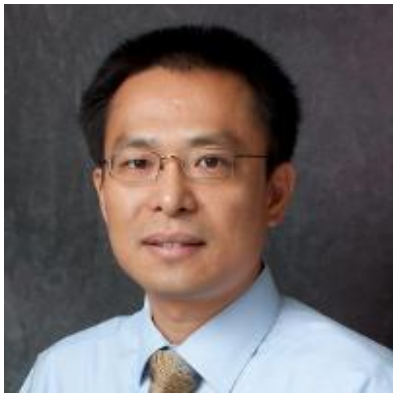
Lingnan University 嶺南大學 香港 Hong Kong
Faculty of Business 嶺南大學商學院
Department of Operations and Risk Management
Hong Kong Institute of Business Studies

Price-Cut Commitment under Strategic Inventory and Retailer Dominance

Abstract

Problem definition: Dominant retailers often pressure manufacturers to commit to future wholesale price reductions, yet the implications of such price-cut commitments---particularly when retailers can also hold strategic inventory---are not fully understood. The decision is further complicated when multiple retailers compete for supply, as both commitments and inventory strategies influence upstream cost-reduction incentives, downstream pricing, and overall supply chain performance. Methodology/results: We develop a two-period supply chain model incorporating a manufacturer's endogenous cost-reduction investment and retailers' incentives to hold strategic inventory as a bargaining tool. The analysis shows that price-cut commitments do not necessarily harm manufacturers; they can increase profits and stimulate cost-reduction investment. However, in large markets, such commitments may backfire on retailers, lowering their profits even without competition. We identify a Pareto "win--win" zone---particularly when cost-reduction investment is efficient---where both manufacturer and retailer(s) gain, and overall supply chain profit and social welfare improve. Retailer competition, however, reduces the likelihood of commitments, creating a prisoner's dilemma in which mutual gains are lost due to individual incentives. Under moderate market size, asymmetric equilibria may emerge, with one retailer favoring a commitment and the other relying on strategic inventory. Moreover, we find a "two horns are worse than one horn" effect: under aggressive price-cut pressure and moderate market size, a manufacturer may earn more selling to a single retailer than to two competing ones. Managerial implications: For practitioners, the findings provide guidance on when to request price-cut commitments versus relying on strategic inventory. Manufacturers should recognize when competition among dominant retailers erodes their profits, and both managers and policymakers can use these insights to design contractual arrangements that improve supply chain profit and social welfare.



Professor Gangshu Cai

Professor and Department Co-Chair, Information Systems and Analytics

Leavey School of Business

Santa Clara University

Professor Gangshu (George) Cai is a Full Professor and Chair of the Department of Information Systems and Analytics at the Leavey School of Business, Santa Clara University. He is the founding director of the Institute of Supply Chain and Operations Management (ISCOM). His research has been published in leading journals including Marketing Science, Production and Operations Management, Manufacturing & Service Operations Management, Management Science, and PNAS. Dr. Cai has received numerous awards for his contributions in research, teaching, and service. He currently serves as an Associate Editor for the Decision Sciences Journal and as a Senior Editor for the Production and Operations Management Journal. He is also the author of the textbook Supply Chain Finance: Mechanisms, Risk Analytics, and Technology (available in both English and Chinese).

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