

不同渠道权力结构和信息结构下供应链定价和销售努力决策

张廷龙¹, 梁樾²

1. 安徽师范大学经济管理学院, 安徽 芜湖 241000;

2. 中国科学技术大学管理学院, 安徽 合肥 230026

Pricing and Sales Efforts Decisions for a Supply Chain Under Different Channel Power Structures and Information Structures

ZHANG Ting-long¹, LING Liang²

1. School of Economics and Management, AnHui Normal University, Wuhu 241000, China;

2. School of Management, University of Science & Technology of China, Hefei 230026, China

- 摘要
- 参考文献
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摘要 本文针对零售商销售努力和销售价格影响需求情况下的制造商-零售商两级供应链,研究不同渠道权力结构和信息结构下供应链的分散决策。基于博弈理论和建模方法,对几种权力结构和信息结构情景建立相应模型,通过理论与数值分析对不同博弈均衡进行比较。研究表明,随着零售商势力逐步增强制造商利润会逐步恶化;但零售商势力增强能否带来更多利润,取决于需求对价格和销售努力的敏感度、销售努力成本以及信息结构。占优一方可以通过获取对方更多信息来改善自己处境。若占优零售商不得不依赖于对制造商成本先验分布进行决策,当估计的均值大于真实成本时,适度的方差对零售商更有利。最后,讨论了销售努力成本分担的合作机制,针对非合作博弈给出了帕累托改进的合约区间和 Nash讨价还价均衡。

关键词: 供应链 渠道权力 制造商占优 零售商占优 销售努力 私人信息

Abstract: This paper investigates pricing and sales efforts decisions for a supply chain with one manufacturer and one retailer. The demand is sensitive to both sales effort and retail price. We establish and compare several models which are based on non-cooperative games and cooperative game to reflect different channel power structures and different information structures by using game theory approach and numerical analysis. The findings show that the power shifting from manufacturers to retailers reduces the profit of the manufacturer. But to the retailer, the outcome is determined by the sensitivities of the customers towards price and sales effort level, the sales effort cost, and the information structure. The dominant agent may increase his profit through getting more information about the other side. If the dominant retailer has to depend on prior probability distribution of the manufacturer's cost, the moderate variance may lead to a favorable price for the retailer who overvalues the manufacturer's cost. A wholesale price with effort sharing is founded to coordinate the supply chain. Further, we establish the conditions and the feasible region where the manufacturer and the retailer can bargain to divide the extra-profits accrued from coordination.

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