

CSR Strategies and Pricing Decisions of Competitive Firms under Uncertainty Demands

Bo Li¹ and Junhong Yang²

¹College of management and Economics, Tianjin University, Tianjin, China;

²School of Mechanical Engineering, Tianjin University, Tianjin, China

libo0410@tju.edu.cn, yangjunhong@tju.edu.cn

Abstract

This paper studies the decisions of two competing firms with the risk-averse behaviors when enhancing Corporate Social Responsibility (CSR). As a benchmark of two firms without investing CSR, we focus on the other case, that is, one of them invests in CSR. A Nash game together with the conditional value at risk (CVaR) to evaluate the risk-averse behavior is built to model the decisions and the optimal equilibrium solutions are compared under the two cases. We find that once the firm invests CSR, his price will be increased no matter how much his risk-averse degree is. Further, we obtain the conditions under which the firm will select to invest in CSR when he has risk-averse behavior and some important parameters, such as the cost and the demand elasticity, will strongly influence the selection of the firm's green investment.

Keywords

Corporate social responsibility; Decision policy; Conditional value at risk; Game theory

Acknowledgements

This paper is supported by the National Nature Science Foundation of China under Grant No. 71472133 and No.71881330167.

Biographies

Bo Li is a professor of College of Management and Economics in Tianjin University. She received her Bachelor and Master degree of Mathematics, Computer and System Control from Nankai University, China. She received her Doctor degree of Management Science and Engineering from Tianjin University, China. Her research interests are supply chain management and coordination, logistics optimization and scheduling.

Junhong Yang is an associate professor of School of Mechanical Engineering in Tianjin University. She received her Bachelor and Master degree of Mechanical Engineering from Tianjin University, China. She received her Doctor degree of Engineering thermalphysics from Tianjin University, China. Her research interests are low-carbon technology and management, green combustion technology.