Author's Accepted Manuscript

Production disruption, compensation, and transshipment policies

Xiao-Feng Shao

Cite this article as: Xiao-Feng Shao, Production disruption, compensation, and transshipment policies, *Omega,* http://dx.doi.org/10.1016/j.omega.2017.01.004

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Production disruption, compensation, and transshipment policies

Xiao-Feng Shao[1]

Antai College of Economics and Management, Shanghai Jiao Tong University 200030, Shanghai, P.R. China

xfshao@sjtu.edu.cn

Abstract:

Firms can mitigate the effects of production disruptions by compensating customers for delayed delivery and sharing the redundant capacity from other firms through transshipment. In this study, we provide a framework to jointly optimize these two strategies in a dynamic setting, and in particular we examine how a manufacturer under capacity disruption can reduce loss through employing dynamic strategies over a horizon with T periods. We consider a decentralized lateral system with one disrupted manufacturer and one requested manufacturer. In each period during the disruption, both manufacturers decide whether to transship. We characterize the structure of the optimal transshipment prices and compensation policies for both independent and competitive market scenarios. Based on the equilibrium of the game, we propose the optimal dynamic transshipment decision policies. In the computational experiments, we find that the transshipment conditions under the competitive scenario are less strict than those under the independent scenario.

Key words: disruption, compensation rate, transshipment policy, redundant capacity, capacity sharing

---

[1] Telephone: 8621-52301391.