The Hong Kong University of Science and Technology
Department of Information Systems,
Business Statistics and Operations Management

Seminar Announcement

Integration of Financial and Operations Decisions

by

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Time: 4:00 – 5:30 pm
Venue: Room 4379, ISOM Conference Room (L17/18)

All interested are welcome

Abstract
Manufacturers are faced with the financial and physical task of managing interrelated flows of material and cash. Material needs capital, and the sale of finished goods contributes to cash reserves. We present and study a dynamic model of managerial decisions in a manufacturing firm in which inventory and financial decisions interact and are coordinated in the presence of demand uncertainty, financial constraints, and a risk of default. The criterion is to maximize the expected present value of dividends net of capital subscriptions. We contrast coordination with the usual decentralized separation of operational and financial decisions, and give an example in which the relative financial value of coordination can be made unboundedly large. We establish conditions which imply that the optimal base-stock inventory level and financial decision variables are nondecreasing functions of the levels of inventory and retained earnings. We show that some important attributes of an optimal policy remain the same regardless of whether default precipitates Chapter 7 or Chapter 11 bankruptcy. The optimal policy is myopic, and if the inventory-related cost and default penalty (in the case of Chapter 11 bankruptcy) are piece-wise linear, the optimal coordinated policy is characterized with simple formulas. The effect of inventory on the risk and cost of default causes the target levels of inventory and residual retained earnings to be different in a coordinated dividend-maximizing firm than in one which decentralizes financial and operational decisions and makes the latter decisions to maximize profit.

Biography
Professor Li, a native of Shanghai, did his undergraduate study at Fudan University. He earned both his MS and PhD in managerial economics and decision science from the Northwestern University, USA in 1982 and 1984, where he began his teaching career as a Lecturer. Upon receipt of his PhD in 1984, Prof. Li joined the California Institute of Technology as Research Fellow in Economics. In 1985, he joined the Massachusetts Institute of Technology as Assistant Professor. He joined the faculty of Yale School of Management in 1989 as Associate Professor and became a full Professor in 1994. His research interests are in the areas of operations management and strategy, supply chain management, economics of operations, and stochastic process and control. He has published many articles in leading journals of economics and management science and two book chapters. Prof. Li is an associate editor for Operations Research and an associate editor for Management Science.