

# Competition of New Technology Adoption under Demand Uncertainty

**Wen-Chung Guo<sup>†</sup>**

Department of Finance, Yuan Ze University, Chung-Li, Taoyuan 32003, Taiwan.

**Hsueh-Jen Hsu**

Department of International Business, Yuan Ze University.

**Yueh-Lung Chiang**

Graduate School of Management, Yuan Ze University.

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## **Abstract**

This paper studies the processes of technology adoption under demand uncertainty and competitive environment. Two high-tech companies compete in the product market and the adoption of new production technology of cost reduction. Closed-form solutions of product prices, processes of technology adoption, and companies' values in equilibrium are presented. Our results suggest that persistence of leadership occurs when the initial difference between the leader and the follower is relatively low. There exist two asymmetric equilibria when we consider the case of identical duopolistic firms, which is in contrast to the deterministic case in Fudenberg and Tirole (1985, RES). Furthermore, competition enhances the process of technology adoption when the fixed cost is relatively low and the improvement of new technology is relatively large. Patterns of product prices and technology adoption are also studied.

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<sup>†</sup>Corresponding author, Tel: (886) 34638800 ext 668; fax: (886) 34354624; e-mail: guo@saturn.yzu.edu.tw