

## **Reverse Supply Chain for Remanufacturing with Uncertain Demand and Return Product Yield**

**Samar k. Mukhopadhyayis**  
Graduate School of Business  
Sungkyunkwan University  
Korea

**Huafan Ma**  
School of Management o  
Wenzhou-Kean University  
China

### **Abstract**

Many countries are mandating remanufacturing as a means of sustainability. Remanufacturing brings in the problem of uncertain yield for the OEM, unlike new parts input. Under this and a random demand, we design a supply chain contract that also takes into account the manufacturing lead times which can be short and long. We consider two popular types of contracts, namely a push or a pull contract. We obtain the optimal supply chain contracts depending on the contract type and the information the OEM has about the random yield rate. We compare the results of different scenarios and develop managerial insights.

### **Biographies**

**Samar K. Mukhopadhyayis** a Professor of Decision Sciences in the Graduate School of Business at Sungkyunkwan University, Korea. He received his Ph.D. in Operations Management from University of Texas at Austin. His current research interests include supply chain management and new product development. His articles have appeared in *Operations Research*, *Journal of Operations Management*, *Naval Research Logistics*, *Production and Operations Management* and other leading journals. He is on the Editorial Review Boards of *International Journal of Business Analytics*.

**Huafan Ma** is an assistant professor of operations management in the School of Management of Wenzhou-Kean University, China. Earlier he taught at the Indiana University-East, USA. He received his Ph.D. in Operations Management from Sheldon B. Lubar School of Business of University of Wisconsin-Milwaukee. His current research interests include reverse logistics, production and inventory management and supply chain management. He has published articles in *International Journal of Production Economics*, *International Journal of Business and Systems Research* and other journals.