

Remanufacturing Strategies of a Domestic OEM and a Multinational Remanufacturer under Policy Interventions and FDI-induced Technology Spillovers

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Abstract

An increasing number of multinational remanufacturers (MNRs) are leveraging their advanced remanufacturing capabilities to establish local centers in key markets, resulting in their remanufacturing technologies spilling over to local Original Equipment Manufacturers (OEMs). This study uses analytical models to examine the strategic interactions between a local OEM and an MNR operating within such global supply chains under varied government policies, including environmental taxes, tariffs, and tax incentives. We first investigate how these policies shape the OEM's decision to adopt remanufacturing and influence the MNR's choice between exporting remanufactured products and setting up local remanufacturing centers. The results reveal that moderate levels of these taxes/tariffs foster coexistence between new and remanufactured products, enhancing consumer surplus, while extreme values can destabilize the market dynamics. Additionally, we study the impact of relevant factors on policymaking and provide implications for policy design. Our policy analysis suggests that when the environmental impact of new product production is high, the policymaker should tax the MNR's products regardless of its location strategies; when the degree of technology spillovers is low and the environmental impact is moderate, the policymaker should subsidize the MNR when it establishes a local remanufacturing center.

Keywords

Remanufacturing strategy, Technology spillover, Localization strategy, Government policies