A theoretical model of firm heterogeneity, FDI, and optimal technology strategy

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Abstract

This study uses Melitz's (2003) model of heterogeneous firms as the basis and expands it to analyze the optimal technology strategies of multinational firms. Analytical results demonstrate that the firms with the lowest productivity will either exit or not enter the market. The firms with the second-lowest productivity will adopt low technology both domestically and abroad. The firms with a comparatively high productivity will adopt high technology in at least one location. A higher efficiency loss coefficient stemming from adoption of high technology abroad will lead to adoption of high technology domestically; a low loss coefficient will lead to adoption of high technology abroad. Finally, the firms with the highest productivity will adopt high technology in both domestic and foreign markets. In addition, it is more likely for a firm to adopt the high technology in the foreign market when the foreign market size is enormous, which could result in the loss of domestic technology competitiveness.

Keywords: *Heterogeneity, Productivity, FDI, Efficiency loss, Technology strategy*

1. Introduction

In recent years, studies relating to the investment behavior of firms have mostly focused on the issue of location selection. The decision factor mainly comes from the cost difference between countries–the consideration of transportation, trading costs, and factor costs. Typical papers classify the FDI of firms into horizontal and vertical FDI. The main factor

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