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Cross-border mergers and acquisitions *vs.* greenfield foreign direct investment: The role of firm heterogeneity ☆

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Abstract

We develop a general equilibrium model with heterogeneous firms to address two sets of questions: (1) what are the characteristics of firms that choose the various modes of foreign market access (exporting, greenfield FDI, and cross-border M&A), and (2) how does the international organization of production vary across industries and country-pairs? We show that the answers to these questions depend on the nature of firm heterogeneity. Depending on whether firms differ in their mobile or immobile capabilities, cross-border mergers involve the most or the least efficient active firms. The comparative statics on industry and country characteristics display a similar dichotomy.

Keywords: Foreign direct investment; Mergers; Greenfield; Firm heterogeneity; Capabilities

JEL classification: F12; F23

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1. Introduction

In this paper, we develop a general equilibrium model of international trade and investment with heterogeneous firms. Firms can access foreign markets through exports, greenfield foreign direct investment, or cross-border merger and acquisition. In equilibrium, different firms choose different modes of foreign market access. The aim of this paper is to derive the "international organization of production": the mapping from firm type to mode of foreign market access. We show that the international organization of production is fundamentally different from one industry to another, depending crucially on the nature of firm heterogeneity.

In an increasingly globalized world, the decision of how best to serve foreign markets is becoming one of the key challenges facing firms. A firm that has decided to sell its product abroad has two distinct options of serving foreign markets: exporting or producing locally (foreign direct investment (FDI)). If the firm decides to produce locally, it can choose between building its own establishment (greenfield investment) or to acquire an existing firm (cross-border merger and acquisition (M&A)). While most of the empirical and theoretical literature has not distinguished between the two modes of FDI, greenfield and cross-border M&A, both are quantitatively important. According to UNCTAD (2000), the ratio of the value of global cross-border M&A to the value of global FDI ($865bn in 1999) is about 80%.

According to the "resource-based view of the firm" popular in the Management Strategy literature, heterogeneity across firms in their performance can ultimately be traced to the interplay between a firm's endowment of complementary "capabilities" or intangible assets (Wernerfelt, 1984). According to this view, mergers and acquisitions arise as firms can exploit complementarities among their capabilities. In an international context, the management strategy literature posits that some capabilities, such as marketing, distribution, and country-specific institutional competency are imperfectly mobile across countries (Anand and Delios, 2002). Cross-border M&A are then motivated by the desire of foreign firms to exploit complementarities between local firms' country-specific capabilities and the acquiring firms' "intangible technological advantages." That is, cross-border M&A are driven by the complementarities between internationally mobile and non-mobile capabilities. Caves (1996, p. 70) summarizes this motive as follows:

> The going concern is a working coalition. From the viewpoint of the foreign MNE, it possesses an operating local management familiar with the national market environment. The MNE that buys the local firm also buys access to a stock of valuable information.

A cross-border acquisition thus allows a firm to get costly access to the country-specific capabilities of the acquired firm, and the price of such an acquisition is governed by demand and supply of firms in the market for corporate control. In contrast, by engaging in greenfield FDI, a firm brings only its own capabilities to work abroad. Different firms will solve this trade-off differently.

One contribution of this paper is to introduce the "resource-based view of the firm" into a general equilibrium model of international trade and investment in which firms can choose between different modes of foreign market access (exporting *vs.* greenfield FDI *vs.* cross-border M&A). There are three key ingredients. First, there is heterogeneity in firms' capabilities. Second, these capabilities differ in their degree of international mobility. Third, firms can participate in the merger market so as to exploit complementarities between capabilities. We then use this framework to address two sets of questions:

(1) What are the characteristics of firms that choose these various modes of foreign market access, and