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The choice of market entry mode: Greenfield investment, M&A and joint venture

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Abstract

Multinationals may enter a host market by different modes of foreign direct investment (FDI). This paper examines the choice of FDI mode, and shows that the profitability of greenfield investment influences this choice not only directly, but also indirectly since it determines the outside option of potential acquisition targets and joint venture partners. In particular, even if greenfield investment is a viable option, the multinational may prefer a joint venture to M&A, and M&A to greenfield investment, provided that M&A and joint venture both involve sufficiently low fixed costs. The reason is that the profitability of greenfield investment both reduces the acquisition price in the case of M&A, and gives local firms an incentive to agree to a joint venture.
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1. Introduction

The current paper examines a multinational firm's choice between different modes of foreign direct investment (FDI). In particular, we let the firm choose between the following strategies for selling goods in the host country: (i) greenfield investment, i.e., setting up a plant in the host country to produce goods locally; (ii) acquisition of a local firm and its production capacity (M&A); (iii) cooperation with a local firm by setting up a joint venture; (iv) exporting goods produced in an existing plant in the home country. We show that the profitability of greenfield investment has an important indirect effect on the choice of a joint venture or a merger, since it determines the outside option of the potential acquisition target or joint venture partner. Hence, even if greenfield investment is not observed in equilibrium, it makes target/partner firms agree to deals they would otherwise not have agreed to.

In particular, we find that if greenfield investment is a viable option and the other FDI modes involve sufficiently low fixed costs, a joint venture will be agreed to by the local firm, and the multinational prefers a joint venture to a merger. Furthermore, the multinational prefers a merger to greenfield investment if the fixed cost of greenfield

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investment is sufficiently large. If greenfield investment is less profitable than exporting, local firms may refuse to participate in a joint venture, leaving the multinational to choose between M&A and exporting.

Foreign direct investment (FDI) has received an enormous amount of attention in the literature.[1] Most of this literature has dealt exclusively with a single mode of FDI, mainly greenfield investment, and to a lesser extent with international mergers and acquisitions (M&As) and joint ventures. This paper, however, is not the first to explore the interdependence between different modes of FDI. It is closest to Bjorvatn (2004) who considers the interaction between M&A, greenfield investment and trade.[2] The novelty of our paper is that we allow for the possibility to form a joint venture, and that we endogenize the synergies that make a merger or a joint venture attractive options for the multinational. In particular, we assume that these synergies are the result of joint investments into cost reduction. The different incentives that M&As and joint ventures create for this investment — in addition to the different strategic effects on host market competition — create trade-offs for the choice between FDI modes. Another difference is that we allow the multinational to serve the foreign market through exports if a merger or joint venture offer has been declined; this, too, has implications for the choice of market-entry mode.[3]

2. The model

In order to keep the model as simple as possible, we assume that there are two local firms in the host country, and a single multinational firm that considers how to enter this country's market. The multinational has the following options: it may acquire a local firm; it may cooperate with a local firm by setting up joint venture; it may choose greenfield investment, i.e., set up a plant in the host country; and it may export goods produced in an existing plant in its home country. If the multinational proposes a merger or a joint venture, it makes a take-it-or-leave-it offer to one of the (identical) local firms. Since the local firms are *ex ante* symmetric, it does not matter which local firm will be the potential target. We will label the multinational firm as firm 1, and the potential target as firm 2, leaving firm 3 as an independent producer in all scenarios. In case of a merger, only firm 1 survives, firm 2 becomes firm 1's division.

Mergers and joint ventures differ from greenfield investment, because they offer the participating firms the possibility to realize synergies. These synergies, however, do not arise exogenously. Rather they require investment by the partners. In case of a merger, firm 1 determines how much each division of the firm is to invest; the merged firm's total output is determined centrally by firm 1. In case of a joint venture, partner firms 1 and 2 individually decide how much to invest; but each firm's investment also benefits the other firm; each firm continues to choose output independently. Note that the proposals of a merger and a joint venture differ in another respect. In case of a merger proposal, firm 1 offers a payment to acquire firm 2 that firm 2 either accepts or rejects. If the proposal is accepted, firm 2 is compensated by this payment for giving up its independent business. A joint venture only serves as a platform for (partial) cooperation between the firms; there hence are no side-payments.[4]

The order of moves in the game is as follows: firm 1 makes local firm 2 either a merger or a joint venture proposal. Firm 2 either rejects or accepts this proposal. If the offer is rejected, the multinational chooses whether to engage in greenfield investment or to export. In case of an accepted merger, the multinational determines cost-reducing investments for both divisions, and in case of an accepted joint venture, firms 1 and 2 determine simultaneously their individual cost-reducing investments. Finally, all independent firms choose output levels as Cournot competitors. Note that letting firm 1 first make a joint venture or merger proposal does not restrict its ability to choose greenfield investment or exporting. For instance, if it prefers greenfield investment to M&A, it can simply propose an unacceptably small payment to firm 2.

Due to quadratic, quasi-linear preferences in the host country, the inverse demand function is given by $p=a-bQ$ with p denoting the equilibrium price for an aggregate supply of Q. The marginal cost of production without any cost saving by a merger or a joint venture is equal to c with $c<a$. However, if the multinational serves the market by exports, an additional trade cost of size t per unit of exports arises, where $t\leq(a-c)/3$. The latter assumption will

[1] See Markusen (2002) for a recent survey. For empirical papers, see Blonigen, Davis and Head (2003), and Carr, Markusen and Maskus (2001).

[2] See Raff, Ryan and Stähler (2006) for empirical evidence. Horn and Persson (2001), and Nocke and Yeaple (2007) offer other models of the choice between M&A and greenfield investment, as well as further references.

[3] Papers like Head and Ries (2003), Helpman, Melitz and Yeaple (2004), and Nocke and Yeaple (2007) emphasize the importance of firm heterogeneity in marginal costs for the choice between FDI and exporting. To a certain extent, the current paper explains endogenously the heterogeneity of firms in case of a merger or joint venture, because firms undertake cost-reducing investment.

[4] In this sense, joint ventures in our model are similar to R&D cooperation or any other form of semi-collusion. For the pioneering paper in this field, see D'Aspremont and Jacquemin (1988).

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