



Trade cost reduction and foreign direct investment[☆]

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ABSTRACT

While the “proximity-concentration” theory suggests a positive relationship between trade cost and foreign direct investment (FDI), there is ample evidence showing a negative relationship between them. We show that the possibility of exporting back to the home country from a host country, which is often referred as “home-country export platform FDI”, may generate a negative relationship between trade cost and FDI. Market demand and product market competition may play important roles in this respect.

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1. Introduction

An important development in recent years is the growth of foreign direct investment (FDI) (UNCTAD, 2006), which has created a large literature explaining the nature, causes and consequences of FDI.¹ An important rationale for undertaking FDI is provided by the so-called “proximity-concentration” theory suggesting that trade cost reduction reduces the incentive for FDI (see, Brainard, 1997).

Although trade costs are reduced in recent years, they remain prominent. In a survey, Anderson and Wincoop (2004) mention that “Trade costs are large, even aside from trade-policy barriers and even between apparently highly integrated economies...A rough estimate of the tax equivalent of “representative” trade costs for industrialized countries is 170 percent. This number breaks down as follows: 21 percent transportation costs, 44 percent border-related trade barriers, and 55 percent retail and wholesale distribution costs... The 44-percent border-related barrier is a

combination of direct observation and inferred costs. Total international trade costs are then about 74 percent.” The well-known “gravity equation” is used for a long time to show the effects of trade costs on trade flows. However, it has been acknowledged in recent years that, while focusing on trade between regions i and j , the gravity equation will look not only at the trade costs between these regions but also at the trade costs between regions i and j relative to those of the rest of the world and the economic size of the rest of the world. Eaton and Kortum (2002), Anderson and Wincoop (2003), Feenstra (2004) and Baier and Bergstrand (2009) consider different approaches to estimate unbiased gravity equations showing the effects of multilateral resistance for trade.

The prediction of the proximity-concentration hypothesis is intuitive, yet empirical findings in the 1990s often counter this prediction. The worldwide boom in FDI during the 1990s coincides with dramatic fall in both technological and policy-induced trade costs. For example, on the one hand, UNCTAD (2004) reports “Trade reforms in developing countries over the past 10-to-15 years are reflected in the general decline in protection in these countries, often under World Bank/IMF programs. Chinese import tariffs, for example, dropped from 34.8% to 12.4% in year 1992 to 2001; Indian tariffs fell from 70.5% to 28.0% in year 1990 to 2001”. On the other hand, UNCTAD (2002) shows that FDI inflows to China and India have increased respectively by almost double and four times between 1990 (annual average between 1990 and 1995) and 2001.

Feinberg et al. (1998) found a negative relationship between tariff reduction and FDI by looking at the effects of USA–Canada tariff

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¹ See Markusen (2002) for an overview of the theory of FDI and multinational corporations.

reduction on the behaviour of the multinationals and their affiliates. In this respect, idiosyncratic firm characteristics such as technologies play important roles.

We use simple theoretical models to explain that, in contrast to the proximity-concentration hypothesis, trade cost reduction may increase horizontal FDI. We consider that a foreign firm serves its home country and a host country either from its home plant or from a host-country plant. The diseconomies created by the plant-specific fixed cost² may prevent the foreign firm from operating plants in both countries, thus creating the necessity for exporting back to the home country if the foreign firm serves the markets from its host country plant.³ Considering a monopolist producer, we show in Section 2 that lower trade cost may increase the foreign firm's incentive for FDI if the host-country market is larger than the home-country market and the host-country demand is more elastic than the home-country demand.⁴ However, demand asymmetry is not necessary for explaining the negative relationship between trade cost and FDI. Assuming the same market size in the home and the host countries, we show in Section 3 that a lower trade cost may increase the incentive for FDI in the presence of product market competition, where the host country firm is very cost inefficient than the foreign firm. Hence, market demand and relative cost efficiency of the foreign investor, which are often considered to be the relevant factors for FDI, may play important roles in determining the relation between trade cost and FDI. The possibility of exporting back to the home country of the foreign firm is the crucial factor for our result.

It has been argued that the host-country policies are facilitating investments from abroad by reducing the costs of undertaking FDI (Markusen and Venables, 1998). On the one hand, a lower trade cost tends to reduce FDI, and, on the other hand, a lower cost of undertaking FDI tends to increase FDI. On the balance, the incentive for FDI may increase following the reduction in trade cost and the cost of undertaking FDI.⁵ Although host-country policies create more congenial environment for investment, thus reducing the costs of FDI, significant costs of FDI remain. These costs may arise simply because the foreign firms need to set up their plants and distribution channels in the host countries. There may also be significant amount of transaction costs related to FDI, which may arise due to poor infrastructural facilities and “administrative barriers” such as corruption and policy discrepancy (Bhuiyan, 2003; Hines, 1995). We show that even if the cost of undertaking FDI is not affected, a lower trade cost may increase the incentive for FDI in the presence of “home-country export platform FDI”.

There are few theoretical works showing that trade cost reduction between the home and the host countries can increase FDI. Smith (1987) shows that scale economies, which affect the entry decision of a host-country firm, may be a reason for this type of relationship.⁶ Lommerud et al. (2003) highlight the role of the unionized labour market. While the former paper may be suitable for an infant host-country industry where intense competition from the foreign firms prevents entry of the host-country firms, the latter paper shows the

implication of input market imperfection. In contrast, we show the implications of a new factor, viz., exporting back to the home country of the foreign firm. In order to do so, we consider a given market structure and perfectly competitive input markets, thus assuming away the factors responsible for the results in Smith (1987) and Lommerud et al. (2003).⁷

Ethier and Markusen (1996) show that a non-monotonic relation between trade cost and FDI may occur if FDI reduces value of the multinational firm's knowledge following defection by the host-country firms. On the one hand, higher trade cost makes FDI profitable, but, on the other hand, defection by the host-country firm reduces the incentive for FDI. In contrast, there is no loss of the multinational firm's knowledge in our analysis. Hence, defection by the host-country firm, which is the reason for creating the ambiguous effect of a trade cost reduction on FDI in Ethier and Markusen (1996), is absent in our analysis.

In contrast to our paper, which shows the effects of a trade cost reduction on horizontal FDI, Grossman and Helpman (1996) use a model with political lobbying, where higher tariff encourages larger donations from the domestic manufacturers, to show how FDI affects tariff. They consider that FDI decisions are taken before the tariff is imposed to maximize the host-government's political objective function, which is the weighted sum of total campaign gifts and average welfare. They show that whether more foreign direct investments may either increase or reduce the tariff depending on the relation between the tariff rate and the ratio of the marginal costs in the home and the foreign country. Unlike our paper, considering the effects of a trade cost reduction on FDI, the causality between FDI and tariff is opposite in their paper.

In a North–South framework, Ekholm et al. (2007) consider exporting back from a host country, and show the implications of a free trade area between the Northern country and the Southern country. However, free trade area in their work eliminates tariff and the cost of FDI between the countries in the free trade area. Moreover, no Southern demand and no Southern producer in their analysis ignore the effects of demand and cost asymmetries, thus making their analysis significantly different from ours.

The effects of trade costs on international trade can be found from a related literature (see, Laussel and Riezman, 2006; Melitz, 2003, for recent works). However, these papers do not consider the effects of trade costs on FDI. Although the effects of a trade cost reduction on FDI can be found in Helpman et al. (2004), which extends Melitz (2003) with FDI, it conforms to the proximity-concentration hypothesis.

The remainder of the paper is organized as follows. Section 2 shows the implications of market size. Section 3 shows the effects of competition in the product market. Section 4 concludes. The proofs are relegated to Appendix A.

² See Horstmann and Markusen (1987) for an earlier work showing the effects of firm-specific and plant-specific fixed costs.

³ Exporting back to the home country from a host country plant is often referred as “home-country export platform FDI” (Ekholm et al., 2007). As documented in Ekholm et al. (2007), in 2003, 60% of total sales of foreign affiliates of the USA multinationals were sold domestically, while 40% were exported. Out of the latter figure, about a third was exported back to the USA and about two thirds were exported to third countries.

⁴ We thank an anonymous referee for pointing out this aspect of the problem to us.

⁵ There is a related literature which shows how investment liberalization policy, which decides whether or not cross-border merger will be allowed, affects welfare (Norback and Persson, 2007).

⁶ Focusing on a specific market demand function, Motta (1992) extends this line of research by introducing a cost of information acquisition by the multinational firm.

⁷ There is a related literature which considers the effect of trade cost reduction between the host countries on a multinational firm's incentive for undertaking FDI in one or more host countries (Motta and Norman, 1996; Neary, 2002, 2008; Norman and Motta, 1993). In contrast, we show the effects of trade cost reduction between the home and the host countries on the incentive for FDI. Neary (2008) also provides a sketch similar to our argument under monopoly, yet it is not explicit in terms of the demand conditions which create the negative relationship between trade cost and FDI. Further, that work does not show the implications of competition, which is another important aspect of our paper. In contrast to our paper, which considers horizontal FDI where the multinational firm does not fragment production geographically, Carr et al. (2001) and Pontes (2007) show that trade cost reduction may increase vertical FDI where the multinational firm fragments production geographically. The knowledge-capital model of Markusen (2002) shows that higher trade cost increases horizontal FDI but it reduces vertical FDI. Hence, unlike our paper, the knowledge-capital model of Markusen is in line with the proximity-concentration hypothesis. Davis (2005) shows that if a foreign firm can fragment its production, thus focusing on vertical FDI, FDI may occur in the absence of trade cost and factor price difference.

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