



## Trade costs and foreign direct investment <sup>☆</sup>

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### ABSTRACT

This paper focuses on an apparent conflict between the theory of foreign direct investment (FDI) and recent trends in the globalized world. The bulk of FDI is horizontal rather than vertical, and standard theory predicts that horizontal FDI is discouraged when trade costs fall. This seems to conflict with the experience of the 1990s, when trade liberalisation and technological change led to dramatic reductions in trade costs yet FDI grew much faster than trade. Two possible resolutions to this paradox are explored. First, horizontal FDI in trading blocs is encouraged by intra-bloc trade liberalisation, because foreign firms establish plants in one country as export platforms to serve the bloc as a whole. Second, cross-border mergers, quantitatively more important than greenfield FDI, are encouraged rather than discouraged by falling trade costs.

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### 1. Introduction

Foreign direct investment (FDI) is one of the key features of the modern globalized world. While some traders maintained international links in the late medieval and early modern periods, and multinational firms became important in many industries in the late nineteenth century, the period since the Second World War and in particular since about 1985 has seen an explosion in FDI, both in absolute terms and relative to the levels of trade and GDP.<sup>1</sup>

Matching these real-world developments, an extensive economic literature has developed in recent years which attempts to explain the nature, causes and consequences of FDI.<sup>2</sup> The central plank of the now-standard theoretical framework used in this literature is the so-called proximity-concentration trade-off. This suggests that FDI occurs when the benefits of producing in a foreign market outweigh the loss of economies of scale from producing exclusively in the firm's home plant. As we will see, there is much to be said for this model, and a lot of empirical evidence in support of it. However, it makes a key prediction which seems to run counter to the experience of the 1990s. If FDI is driven primarily by the proximity-concentration trade-off, then falls in trade costs should discourage it, as the benefits of concentrated production increasingly outweigh the gains from improved market access. Yet the worldwide boom in FDI during the 1990s coincided with dramatic falls in both technological and policy-induced barriers to trade. This is especially true within Europe, where artificial trade barriers were significantly reduced under the EU Single Market programme, even as FDI boomed.<sup>3</sup>

<sup>☆</sup> An extended version of this paper was presented to the CESifo Workshop on "Recent Developments in International Trade: Globalization and the Multinational Enterprise," Venice International University, July 2005, and will appear in the proceedings of that conference, [Brakman and Garretsen \(2008\)](#). I am grateful to participants there as well as at the University of Tübingen and at ETSG 2005 in UCD and to an anonymous referee for comments, and also to Frank Barry, René Belderbos, Ben Ferrett, Keith Head, Dermot Leahy, Philippe Martin, Armando Pires, Charles van Marrewijk, Julia Wörz and Stephen Yeaple for helpful discussions.

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<sup>1</sup> See [UNCTAD \(2000\)](#), [Markusen \(2002, Chapter 1\)](#) and [Barba Navaretti and Venables \(2004, Chapter 1\)](#) for summaries of the stylized facts about FDI.

<sup>2</sup> [Markusen \(2002\)](#) and [Barba Navaretti and Venables \(2004\)](#) give overviews of the theory of FDI and multinational corporations.

<sup>3</sup> It is true that measuring either tariffs or transport costs in even the simplest contexts poses major conceptual and practical problems. (See [Anderson and van Wincoop \(2004\)](#) and [Anderson and Neary \(2005\)](#).) Nevertheless, it seems incontrovertible that both fell considerably in the 1990s.

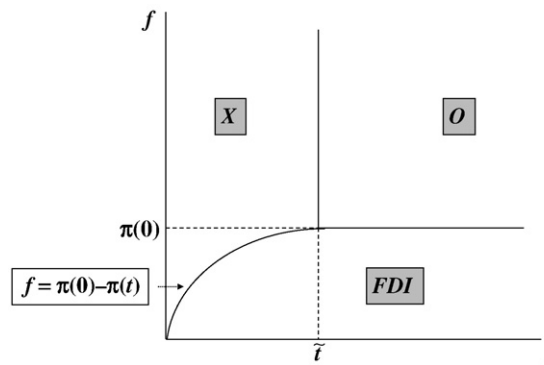


Fig. 1. The proximity-concentration trade-off I: the trade-cost-jumping motive.

This apparent paradox is the organizing principle of the paper, which presents a selective overview of the theory and empirics of FDI. The paper first outlines the simplest case of horizontal FDI, and then considers in turn vertical FDI, export-platform FDI and cross-border mergers and acquisitions. Throughout I try to present results in the simplest possible way, paring the models down to their essentials to focus attention on the key assumptions, and making use of diagrams where possible. As we will see, there are many ways of explaining the paradox, but their relative empirical importance remains to be determined.

## 2. The proximity-concentration trade-off

I begin with the simplest framework in which the proximity-concentration trade-off can be illustrated.<sup>4</sup> Consider a single potential multinational which is the monopoly supplier of a product and seeks to determine the optimal mode of serving a foreign market. The assumption that the firm is a monopoly can be related to the “O” in the “OLI” or Ownership–Location–Internalization framework of Dunning (1973): the firm possesses unique advantages in terms of product quality, marketing, organisation or R&D, which give it an ownership advantage over other potential firms. It is also consistent with models of monopolistic competition: many firms compete against each other, each producing a symmetrically differentiated product, but from the perspective of an individual firm the demand function it faces is given. Of course, the assumption is not consistent with perceived interdependence between oligopolistic firms, which seems *a priori* likely to characterize the markets in which many multinational corporations operate. However, the main points I want to make do not require an oligopolistic setting and I postpone consideration of oligopoly until Section 5. I also concentrate throughout the paper on a single industry in partial equilibrium. Embedding such an industry in general equilibrium is essential for a complete analysis, and much recent research in the theory of FDI (including my own) has done just this. However, the points I wish to highlight can be adequately addressed in partial equilibrium.

The operating profits which the firm earns in the foreign market depend on many factors, some under its control (such as output and advertising) others not. Assume in this section that these factors are independent of how the firm serves the market. In particular, there is no comparative advantage reason which makes it cheaper or more expensive to produce in the firm's home country or in the host country. In that case we can focus on a single key determinant of operating profits, the unit cost of serving the market, denoted by  $t$ . Part of this cost too is independent of how the market is served: marketing, distribution and after-sales service costs for example. However, for our purposes it makes sense to focus on the incremental cost of serving the market from abroad, so  $t$  should be understood as a measure of the external trade barrier, which is zero if the firm locates in the market and otherwise includes both tariffs and transport costs. Hence we can write the firm's operating profits as a reduced form function of  $t$ ,  $\pi(t)$ , where all the other determinants of operating profits, which are independent of how the market is served, are subsumed into the  $\pi$  function. It is easy to check that a rise in  $t$  reduces both sales and profits in the market, so  $\pi'$  is negative. (See the Appendix for more details.)

We can now state the firm's profits from alternative ways of serving the market. If it does so via exports then its total profits  $\pi^X$  are simply  $\pi(t)$ . Of course, the firm also incurs fixed costs in its home country: these are an important determinant of its willingness to serve the foreign market at all, but they are independent of how it does so, so little is lost by ignoring them. By contrast, investing in a local plant to serve the market will incur additional fixed costs which we denote  $f$ . (It is convenient to interpret fixed costs as measured with respect to the size of the domestic market: see Rowthorn (1992) for a justification.) The benefit from this proximity is the saving on trade costs, which boosts operating profits to  $\pi(0)$ . Hence the total profits from engaging in FDI, which we denote  $\pi^F$ , equal  $\pi(0) - f$ . The choice between FDI and exports therefore depends on the trade-cost-jumping gain, which we denote  $\gamma(t, f)$ :

$$\pi^F - \pi^X = \gamma(t, f) \quad \text{where: } \gamma(t, f) \equiv \pi(0) - f - \pi(t) \quad (1)$$

As the signs under the arguments indicate, this gain is increasing in trade costs  $t$  but decreasing in fixed costs  $f$ .

<sup>4</sup> The model in this section is standard. See for example, Smith (1987, Section 2) or Markusen (2002, Chapter 2). The analytic properties of Fig. 1 are taken from Neary (2002).

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