# Increasing returns, multinationals and geography of preferential trade agreements

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**Abstract**

This paper uses a model of horizontal multinational enterprises to explore the relationship between transportation costs and trade policy cooperation. Tariffs have the effect of attracting foreign direct investment to the benefit of consumers in the host country. As transport costs fall, the incentive to impose tariffs falls and the benefits to cooperation rise. Thus, in a repeated game in which cooperation is limited by a self-enforcement constraint, a reduction in transport costs facilitates free trade. This logic is applied to a three-country model to examine preferential trade agreements. It is found that if any country is too distant from the others, then global free trade is not attainable. Rather, if two of the countries are within a critical distance of each other and distant from the third country, then the unique outcome is an exclusive free trade agreement between the two adjacent countries. Thus, the model predicts a strong regional bias in preferential trade agreements.  © 2002 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

Of all the variables that might explain (in a statistical sense) why countries enter into preferential trade agreements (PTAs), one stands out above all others:

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proximity. Virtually all PTAs are between geographically contiguous countries. Those that are not tend to be based on former imperial relationships, which have been diminishing in importance.[1] Indeed, so strong is the relationship between proximity and PTAs that few economists even bother to make a distinction between preferential trade and 'regionalism'.[2] Despite this obvious link, however, the theory of PTAs has not produced a compelling argument for why it exists. This paper suggests an approach to this issue and constructs a simple example, based on the theory of multinational enterprises (MNEs), to illustrate its potential.[3]

The approach taken in this paper will be summarized briefly at this point, postponing the details until the next subsections. There is a certain class of international trade models, involving elements of increasing returns and imperfect competition, in which transportation costs (which are closely correlated with distance) provide an argument for trade policy. Perhaps the most transparent model in this class is that of a MNE that faces a trade-off between proximity and concentration.[4] By restricting trade, an importing country can induce the MNE to substitute local production for exports, and this may benefit the country's consumers through lower prices. The desirability of a trade restriction for the importing country, therefore, may increase with the transport cost.

A branch of recent literature has sought to explain the nature of trade agreements by appealing to limitations placed on international cooperation by the absence of outside enforcement (e.g., Bagwell and Staiger, 1990; see Staiger, 1995, for a literature review). Without a supra-national enforcer, countries must design their trade agreements to be 'self-enforcing.' In a repeated game framework, this requires that at every point in time a country's one-time incentive to deviate from an agreement be less than the discounted benefit of future cooperation. Using the simple MNE model described above, this paper shows that the one-time incentive to deviate is lower and the benefit to cooperation greater the lower is the transport cost. Thus, countries separated by low transport costs are more likely to be capable of maintaining a free trade agreement than countries separated by high transport costs.

## 1.1. An argument from standard preferential trade theory

One of the earliest lessons from the standard theory of PTAs (Viner, 1950) is that a PTA is more likely to increase the welfare of its members if it includes the lowest cost suppliers of the goods being traded, as this eliminates the possibility of

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[1] An exception is the US–Israel FTA. Also, Norway and Switzerland are members of the European Free Trade Area (EFTA) but are not contiguous. However, all the countries that lie in between are members of the EU, which has a free trade agreement with the EFTA countries.

[2] See Baldwin and Venables (1995), for a discussion of this point.

[3] Etheir (1999) has also addressed this issue, offering several alternative theories that emphasize the role of foreign direct investment.

[4] This terminology is borrowed from Brainard (1993, 1997).