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International trade and environmental policy: how effective is 'eco-dumping'?

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Abstract

This paper examines the effects of environmental regulations on the international competitiveness of domestic industries. A generalised GDP function, which incorporates both technology changes and increasing returns to scale is set up and a flexible translog function form is used to approximate this GDP function. A seemingly unrelated regression estimation technique is employed to estimate a system of sectoral share equations derived from the generalised GDP function. The basic hypothesis is that while the environmental factor is not a significant determinant of the international competitiveness of environmentally sensitive industries, technology is. The result supports this hypothesis and suggests that so-called eco-dumping is not an effective strategy in this context. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

A country is regarded as engaging in 'ecological-dumping',[2] or 'eco-dumping' when it gains international competitiveness in environmentally sensitive industries

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(ESG) by imposing relatively lax environmental standards on the production of a good. More precisely, 'eco-dumping' can be defined as a policy which 'prices environmentally harmful activities at less than the marginal cost of environmental degradations, i.e. a policy which does not internalise all environmental externalities' (Rauscher, 1994).

'Eco-dumping' and its counterpart, anti-dumping, have emerged as new issues threatening the trade liberalisation agenda of the World Trade Organisation. As trade and environment concerns become increasingly evident, there is a resurgence of calls for a 'level playing field', 'harmonisation of environmental standards' and 'fair trade' and fears of loss of international competitiveness in environmentally sensitive industries on the part of developed countries in the 1990s. Developing countries, on the other hand, see these calls as new protectionism, in the form of hidden non-tariff barriers and problems of market access (Dua and Esty, 1997).

An even more important issue facing developing countries is that of development strategy. Is there a conflict between environmental standards and international competitiveness? Do developing countries need to sacrifice their hopes for economic development, or, more narrowly, international competitiveness in the interests of higher environmental standards?[3] Is it a question of economic development (or the international competitiveness of ESG industries) vs. environmental standards or is it rather a question of economic development taking environmental standards into account?

The literature features a number of normative analyses (Anderson and Blackhurst, 1992; Barrett, 1994; Chichilnisky, 1994; Esty, 1994; Porter and van der Linde, 1995; Bhagwati and Hudec, 1996; Brander and Taylor, 1997; Dua and Esty, 1997; Markusen, 1997, among others).[4] However, there is a lack of further empirical analysis, as pointed out in a 1995 report to the OECD Council at the ministerial level: 'the next stage of the OECDs work programme should include empirical analysis of selected policy areas and economic sectors' (OECD, 1995).

This paper ties in with the literature on trade liberalisation and environmental policy from an empirical perspective. It aims to investigate the effectiveness, if any, of 'eco-dumping' on the international competitiveness of environmentally sensitive industries. It seeks to examine whether the introduction of stringent environmental policies will lead to the decline of ESG industries. To this end, a generalised GDP function, which incorporates both technology change and increasing returns to scale, is set up and a flexible translog function form is used to approximate this generalised GDP function. A seemingly unrelated regression estimation (SURE)

[2] When a firm sells products in another country at prices below average cost or below the price in the home country, it is called dumping. Dumping sometimes can be beneficial to importing countries if the reason for selling products at lower prices is that the foreign demand curve is more elastic and the firm just wants to price discriminate (Viner, 1923). In practice, however, dumping is illegal in the US and some other countries because dumping is regarded as a form of predatory pricing (Davies and McGuinness, 1982; Ethier, 1982) used by foreign firms to gain market share and market power. The penalty is a high tariff or non-tariff barrier, the so-called anti-dumping duty.

[3] For an interesting analysis on global warming and developing countries, see Schelling (1992).

[4] See Dean (1992) for a survey of this literature.