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Chaire développement durable, Sciences Po Paris

WTO's contribution to sustainable development governance: balancing opportunities and threats

Conference, Paris, 20 & 21 October 2005

Does Trade Matter? The Environment and Globalization

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Economic theory predicts that freer trade should affect the environment. Grossman and Krueger (QJE 1995) propose a paradigm for thinking about the relationship between economic growth and the environment. Economic growth affects the scale of production, the composition of production and the technique of production. Depending on the direction and magnitude of these various effects, economic growth could result in more of less pollution in an economy and in the world. Empirically, Grossman and Krueger use cross country data to document the existence of an environmental Kuznets curve, an inverse U-shaped relationship between various measures of environmental pollution and per capita income. They argue that the existence of the environmental Kuznets curve in cross sectional data shows that as income rises, changes in the composition of production and the technique of production toward cleaner industries and production processes leads to lower levels of pollution. More recent work by Harbaugh, Levinson and Wilson (REStat 2002) has shown that the inverse U-shaped relationship between pollution intensity and per capita income is not robust to the inclusion of additional regressors or changes in the data sample. What seems clear from numerous studies is that higher incomes are associated with cleaner environments. More work is needed to identify why. Is this due to the relative growth of factors of production, changes in preferences associated with changing income levels, the policy response function or other fundamental changes in the economy?

In more recent work, Copeland and Taylor (AER 1995; JIE 1999, JEL 2004) and Antweiler, Copeland and Taylor (AER 2001) carefully analyze richer models that explicitly account for trade and environmental policy responses. In their models, freer trade can lead to more or less pollution on a national and/or global scale depending on preferences for pollution at different income levels, factor endowments, technologies, and the policy formation process. One focus of their research is the effect of domestic environmental policy on trade flows and plant location decisions. The empirical literature (Antweiler, Copeland and Taylor, AER 2001; Keller and Levinson, REStat 2002; Ederington, Levinson, and Minier, REStat 2005) finds some evidence that, on the margin, pollution regulations affect plant location decisions. However, Antweiler, Copeland and Taylor (AER 2001) reject the idea that environmental policy is such an important determinant of trade flows that its effects swamp those of factor abundance and technology. Moreover, Copeland and Taylor (JEL 2004) argue that while empirical evidence for the existence of pollution havens in poor countries can be explained as arising from increased trade, it is also consistent with a standard model of economic development in southern countries in a North-South growth model with trade.

CAT&E is funded by the 5th Framework Programme of the European Commission and co-ordinated by IVM (Amsterdam), Ecologic (Berlin) and Iddri (Paris).

With regard to the question of should trade sanctions be used to achieve environmental objectives, the economic theory literature can be divided into papers that support the idea that technological improvement or the adoption of cleaner technologies by domestic firms can be facilitated by import tariffs (Matsuyama, AER 1990; Miyagiwa and Ohno, AER 1995; Crowley, JIE 2005), a paper that suggests that the WTO could assist countries that wish to tighten their environmental standards by giving them more freedom to raise their tariffs (Bagwell and Staiger, QJE 2001), and a paper (Ederington, AER 2001) that argues that, when enforcement power is limited, governments should coordinate their domestic environmental policies and adjust trade policy as necessary to support the agreement. Further, a cursory examination of eco-dumping using the model in Bown and Crowley (2005) suggests that anti eco-dumping duties could reduce imports from countries where pollution regulation is lax and increase imports from countries where pollution regulation is strict. However, because of trade deflection, the total exports of the country that is eco-dumping would fall only slightly.

Empirically, the use of trade sanctions to achieve accelerated technology adoption or to improve welfare in the face of dumping results in costs that far outweigh the benefits (USITC, 1982; Hansen and Prusa, WE 1995; Gallaway, Blonigen and Flynn, JIE 1999; Blonigen and Prusa, 2004; Bown and Crowley, 2005). Because trade sanctions that are designed to achieve environmental goals could be abused and over-utilized for protectionist motives, their use should be viewed with extreme caution.

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