Evaluation of the paper on "Environmental Regulation of a Global Pollution Externality in a Bilateral Trade Framework: The Case of Global Warming, China and the US" by Johnson Gwatipedza, University of Manchester and Edward B Barbier, University of Wyoming

Strengths

It is a very straightforward paper, where the assumptions, model constructions, policy simulations and main conclusions are clearly presented. The paper focuses on analyzing the implications of unilateral and bilateral coordinated policy approaches to control global pollution externality in the context of bilateral trade and capital investment relationship.

For this purpose, an algebraic model is presented which captures reasonably well the main characteristics of the two countries i.e. USA and Chine, as representative of the north and south regions.

The selection of countries for the analysis of north-south trade relations is broadly appropriate, as the two countries represent a large share of the world economy, being them the first and second economies in the world. At the same time both constitute the second and first most polluting countries at the global level.

The model developed is a variant of the footloose capital model (Martin and Rogers 1995; Baldwin 1999; Baldwin et al 2003). The model's assumptions reasonably capture the main features of the trade relations existing between USA and China, e.g. the mobility of capital between the two countries and the immobility of labor; the relatively more capital intensive technology used in the North (USA) vis-à-vis the South (china); and the differences in technologies, labor productivity, wages and incomes existing between the two regions.

The model equations i.e. identities and behavioral functions, are built within a consistent macroeconomic framework, represented by consumer's budget constraint and household income equations,

Equilibrium is attained when consumers and firms maximize their utility functions. Households maximize their welfare consisting of total utility derived from consumer commodities and the expected damages from global pollution externality. Firms on the other hand maximize profits, by changing the allocation of capital between the two regions.

The authors derive different equilibrium for the cases of unilateral and coordinated, convincingly showing that, in the own words of the authors, "except for a rare case discussed above, there are efficiency gains to be obtained if the US and China engage in bilateral agreements to control a global pollution externality, while promoting trade and development".

Besides, the study also provides the ground for future research, which according to the authors, could include issues such as "a study of different policy approaches to protect the environment

under common pool resources or resources or insecure property rights under international trade between the developing and the developed world."

Weaknesses

The understanding of how the model works, in terms of how short term and long term equilibrium conditions are reached, as well as in terms of the dynamic of how equilibrium is reached in response to shocks and policy interventions, could be greatly enhanced with the help of graphs, which could present how north and south regions' equilibrium curves interact between each other.