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Environmental policy and lobbying in small open economies☆

Lars Persson *

Department of Economics, Umeå University, SE - 901 87 Umeå, Sweden

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ABSTRACT

This paper analyzes consequences of lobby group activity for policy outcomes in economies with transboundary pollution and international environmental policies. International environmental policies are here characterized as pollution taxes determined in a negotiation between two countries. The optimal pollution taxes are characterized and comparative statics are carried out to increase the understanding of mechanisms underlying pollution taxes in the specified setup. It is found, among other things, that the presence of local lobbying may decrease, as well as increase pollution taxes – depending on, e.g. an assumption of symmetry.

1. Introduction

When individuals are affected by political decisions, they have an incentive to try to influence the political outcome. One way of doing so is to participate in lobby groups which exercise pressure on the incumbent governments. For example, 'green' lobby groups may exercise political pressure to increase pollution taxes, while industry lobby groups may try to reduce costs that are associated with pollution. The number of lobby groups and the extent to which they affect the political outcome may differ both between countries and over time.[1] This paper analyzes consequences of lobby group activity for policy

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* Tel.: +46 090 7865845.
E-mail address: lars.persson@econ.umu.se.

[1] See e.g. Conconi (2003) for a discussion on the importance of lobbying in real world politics.

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outcomes in economies with transboundary environmental problems and international environmental policies.

Consequences of environmental problems like acid rain, global warming, ozone depletion, etc. are typically not restricted to geographically predetermined regions or countries. Instead, given its transboundary nature, environmental problems often need to be solved in internationally coordinated agreements. As an example, the early emissions of sulphur and nitrogen oxides resulted, at the European level, in the formulation of the 1979 Convention on Long-Range Transboundary Air Pollution (LRTAP). As pointed out by Murdoch et al. (1997), one aspect of this particular ratification was that most countries met (or exceeded) their mandated reductions of sulphur, while not for the nitrogen oxide. As suggested by Murdoch et al. (1997), sulphur emissions appear easier to control and strategic behavior appears stronger for nitrogen oxides than for sulphur. Previous studies suggest that green lobbying leads to a stricter environmental policy at the national level. For example, Fredriksson (1997) and Aidt (1998) show that more green lobbying may lead to higher pollution taxes in small open economies with local pollution.[2] Furthermore, Conconi (2003) introduces interactions between countries, such as trade and transboundary pollution, and examines how green lobbying affects policy outcomes. She shows that the impact of green lobbying depends crucially on the trade regime and on how lobby groups act together. A specific result is that one country's increase in pollution taxes, triggered by lobbying, improves the terms of trade in favor of the other country, which leads to an increase in that country's production and emissions.[3] However, it is worth noting that Conconi (2003) does not consider consequences of environmental policies that are determined in a negotiation between countries, which will be the case in this paper.[4] Moreover, Aidt (2005) models imperfect competition and finds that an increase in the influence from environmental lobby-groups may lead to lower pollution taxes and increased worldwide pollution. This result rests on the assumption that pollution is immobile and environmentalists care sufficiently about pollution that arises abroad. The intuition is that if environmentalists are very concerned with pollution abroad, the lobby group is willing to accept relatively more pollution at home in return for less pollution abroad, which means a lower domestic tax on pollution. The studies mentioned above are, accordingly, showing that stronger environmental lobby groups not necessarily improve the environmental quality.[5]

In this paper, the lobby group model of unilateral policies developed in Fredriksson (1997) is extended to include a negotiation between countries with respect to environmental policy, here defined as pollution taxes. Hence, the present paper does not focus on trade policies but instead on international environmental agreements. The present paper considers a global economy consisting of many small countries but, to simplify the analysis as much as possible, it is assumed that only two of them generate, and are affected by, transboundary pollution.[6] As for real world environmental issues, this setup reflects, for example, the problem of sulphur and NO_x emissions, which remain in the air for days through, e.g. acid rain and surface-level ozone and thereby may strike other countries or regions.[7] The two countries are assumed to coordinate their environmental policies (taxes) via a cooperative Nash bargain, while treating the world market prices as exogenous. Although the focus on a two-country agreement is a simplification and motivated by convenience, the model may be interpretable in terms of the literature

[2] Fredriksson (1997) uses a lobby group model to study how a pollution tax is affected by movements in prices and lobbying.

[3] In addition, Ethier (2007) argues that terms of trade effects are not empirically relevant for trade agreements. Trade agreements do not, in general, prevent countries from making use of terms of trade mechanisms, and countries, nevertheless, do not implement such policies.

[4] It can perhaps be argued that a negotiation over national policy instruments directly is an unrealistic assumption. However, this can – for example – be seen in economic federations such as the European Union. In such federations carbon dioxide targets are determined at the federal level although each member country chooses how to implement the targets. As for the present paper, the negotiation over national pollution taxes becomes equivalent to a negotiation over national target levels.

[5] Another related example is Schleich and Orden (2000) who models environmental quality and industry protection in a large-country Grossman and Helpman setup. They find, among other things, that inefficient trade policies may lead to higher environmental quality than efficient policies.

[6] The small country assumption implies that prices are treated as exogenous from the perspective of a national government. In an European context, the small country assumption is a rather reasonable assumption.

[7] Recall, for example, the European example above.