CESifo, the International Platform of the Ifo Institute of Economic Research and the Center for Economic Studies of Ludwig-Maximilians University

CESifo Venice Summer Institute

19 - 24 July 2010

"Fiscal Implications of Climate Change"

to be held on **21 - 22 July 2010**
on the island of San Servolo in the Bay of Venice, Italy

Environmental Policy under Incomplete Information

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Extended Abstract

The concern that environmental policy may not only interfere with free trade but it can also be designed strategically to confer competitive advantage on a country's industry (at the expense of other countries) has received considerable attention in the literature.[1] Barett (1994) shows, for instance, that if the domestic industry is a monopoly, and the foreign one is imperfectly competitive, the domestic government has an incentive to set weak environmental standards under the assumption that the domestic firm behaves as a Stackelberg leader, a conclusion derived also (under different modeling assumptions) by Copeland (1990) and Markusen et al. (1992). Arguably, strategic incentives extend to firms, too. Ulph (1996), in particular, investigates the incentives of producers to act strategically in order to shift rents towards them. Ulph (1996) shows that, allowing for governments to strategically choose environmental policy and also producers to strategically vary their level of R&D can substantially alter the policy conclusions.[2] A simplifying assumption underlying this line of work has been, however, the fact that there is complete information on the part of the agents (consumers, firms, and

[1] Though, it has to be said, that the distortions associated with such strategic considerations have not been shown to be overwhelmingly significant, Grossman and Krueger (1992).

[2] See also Ulph (1992, 1993).

governments) regarding the measurement of both the levels of emissions and the environmental harm (of those missions) conferred on consumers.

This paper introduces uncertainty into a model of strategic environmental policy choice and asks: a) What is the role of uncertainty in the choice of environmental policy? b) Do countries have an incentive to share information regarding emissions and damages? c) Do countries prefer quantity regulation or emission fees under strategic behavior (and uncertainty)? d) How does the intensity of competition (in environmental instruments) depend on the level, and type, of uncertainty?

References (selective)

1. Barrett, S. (1994). 'Strategic environmental policy and international trade,' *Journal of Public Economics* 54, 325-338.

2. Copeland, B. (1992). 'Taxes versus standards to control pollution in imperfectly competitive markets,' mimeo.

3. Markusen, J., E.R. Morey and N. Olewiler (1992). 'Noncooperative equilibria in regional environmental policies when plant locations are endogenous,' NBER Working Paper 3671.

4. Ulph, A. (1992). 'The choice of environmental policy instruments and strategic international trade,' in 'Conflicts and Cooperation in Managing Environmental Resources; (R. Pethig, Ed.) Springer-Verlag, Berlin.

5. Ulph, A. (1993). 'Environmental policy and strategic international trade,' Discussion Paper in Economics and Econometrics 9304, University of Southampton.

6. Ulph, A. (1996). 'Environmental policy and international trade when governments and producers act strategically,' *Journal of Environmental Economics and Management* 30, 265-281.