Market-based instruments and international trade
Overview

Three broad categories of environmental policy instrument have evolved over the past two decades:

regulatory instruments, whereby public authorities mandate the environmental performance to be achieved, or the technologies to be used, by firms;

economic instruments, whereby firms or consumers are given financial incentives to reduce environmental damage;

voluntary approaches, whereby firms make commitments to improve their environmental performance beyond what the law strictly demands.

These categories are not mutually exclusive, in that some policy instruments exhibit characteristics from more than one of the categories, but they provide a useful general classification.

The Research Network on Market-Based Instruments for Sustainable Development was a Concerted Action involving thirteen European research institutes funded by the European Commission’s DGXII under its Environment and Climate RTD programme. The Network is largely concerned with economic instruments and voluntary approaches, which are here collectively referred to as ‘market-based instruments’. The series of policy briefings reflects the results of workshops organised by the Network on the following topics:

1. Voluntary approaches
2. Emissions trading
3. Environmental policy targets and non-market valuation
4. Green tax commissions
5. Institutional aspects of market-based instruments
6. Environmental policy and competitiveness
7. Environmental implications of market-based policy instruments
8. Market-based instruments and international trade
Summary

The ongoing integration of world markets is often seen as a threat to the freedom of national governments to pursue stringent environmental policies, and in particular to apply market based instruments (MBIs) such as eco-taxes. Concerns exist about the impact of unilateral environmental taxes on national competitiveness, and about the GATT/WTO-compatibility of MBIs which might be regarded as trade barriers.

This policy brief argues that, insofar as there is a tension between free trade and environmental protection, MBIs are not in a worse position than other environmental policy instruments. However, if policymakers want to combine the use of MBIs with protection of their industry’s competitiveness and compliance with world trade rules, they should carefully choose the level of intervention and the design of the instruments.

International co-ordination and harmonisation of eco-taxes is advisable, especially if transboundary environmental problems are involved. However, a unilateral approach may be preferred for various reasons, and its negative side effects can be mitigated by appropriate choices concerning the tax base and rates, exemptions, Border Tax Adjustments, revenue recycling etc. In general, it can be said that although the trade barrier effects of MBIs should be minimised, the international trade rules leave ample scope for their effective application.
1. Definitions and Descriptions

This Environmental Policy Research Brief deals with the issues surrounding the use of Market Based Instruments (MBIs) in environmental policy within the global trade framework. As a start, some core institutions and concepts which are relevant for this relationship are introduced.

The General Agreement on Tariffs and Trade (GATT) gives the basic rules of the game for world trade. In 1994, the GATT was amended by the Uruguay Round amendments, which included the creation of the World Trade Organisation (WTO).

One of the main principles of the GATT is non-discrimination. Protectionism should be fought by reducing trade barriers and treating domestic and foreign suppliers equally.

The existence of the GATT (and of other, regional free trade arrangements, such as the EU Treaty) has implications for the use of market based instruments (MBIs) in environmental policy. For example, countries imposing an environmental tax may want to reduce its adverse impact on international competitiveness by applying Border Tax Adjustments (BTAs): levying the same (or an equivalent) tax on imported goods and refunding the tax on exported goods (or exempting exporters). BTAs are clearly allowed by the GATT if the tax base is the traded good itself: “like products” are then treated equally. However, there is some debate whether taxes on processes, on emissions and on embodied inputs (such as energy) can be neutralized by BTAs. A related question is whether countervailing duties can be imposed by the importing country if the exporting country fails to impose environmental regulations or taxes and thus implicitly subsidizes its industry (Lothe, 1998). The GATT’s Subsidies Code and Panel decisions do not give unequivocal guidance on these issues.
Market-based instruments (MBIs) and international trade seem to prove problematic for each other. Although all instruments of environmental policy have impacts on prices, costs, income and international competitiveness, the discussion on these economic effects is particularly heated in the case of MBIs, especially when environmental taxes are being proposed. One of the reasons for this may be the fact that, compared to other types of environmental policy instruments, ecotaxes and their impacts are highly visible and difficult to evade. Standards and regulations offer some scope and time for negotiations, exemptions and tolerance. However, taxes on polluting products and activities, once they are established and enforced, leave little room to soften the blow which the actors involved may suffer if their foreign competitors do not face similar taxes.

Other MBI-based policies, such as the favourable treatment of “green” products and practices by means of subsidies, fiscal benefits or public procurement, may also be questioned from an international trade perspective. If they are explicitly or implicitly favouring domestic suppliers over foreign ones, they may come to be seen as barriers to trade, even if there is no protectionist intention at all behind them.

Nevertheless, MBIs can and indeed do function within a liberalising world market. Policy makers who want to introduce MBIs which should fit well into the international trade framework, will have to address two broad issues:

- the appropriate level of scale and degree of international harmonisation and standardisation, and
- the precise design of the instrument.

2. Background and Rationale
3 Analysis and experience

3.1. Scale level and international coordination

National initiatives to introduce eco-taxes are often frustrated by powerful lobbies, pointing at the negative consequences for international competitiveness. Eco-taxes, so they say, if needed at all, should be applied at the supra-national level, so that they will hit all competitors equally. At the same time, the harmonisation of (eco-)taxes at the EU-level appears to be almost a political impossibility in practice. The ill-fated proposal for an EU-wide energy/carbon tax is a case in point. Moreover, along this line of reasoning taxation should preferably take place at the global rather than at the EU level, given the ongoing integration of world markets.

From an economic-theoretical point of view, the optimum level of policy interference is related to the nature of the environmental issue involved. Global problems, such as the enhanced greenhouse effect and the depletion of the ozone layer, should be tackled by global solutions, such as a world wide tax on the substances causing these problems. Transboundary pollution at a lower scale level, e.g. acidification, can be dealt with at the level of the region affected, such as the UN-ECE countries. However, there is no a priori need for international policy coordination regarding environmental problems which occur within national borders. Countries having a strong preference for a clean environment should not hesitate to impose a unilateral tax on activities which cause local pollution, even if this means that these activities are relocated to another country where environmental concern is less (or where the environment has a larger carrying capacity). Only in specific situations is international co-operation required to deal efficiently with non-transboundary pollution (see e.g. Kox and Van der Tak, 1996).

In practice, however, the level of policy intervention is largely determined by political realities. Apart from environmental objectives, other policy considerations, such as the survival of particular domestic industries, may play an important role. Especially in a small, open economy with “footloose” industries, loss of employment due to high environmental taxes cannot be precluded (Van Beers, 1998). International coordination can mitigate the adverse economic consequences of environmental taxes, which will surely enhance their acceptability. The question whether (internationally harmonised) ecotaxes may even lead to net gains in employment (the “double dividend” argument) remains unresolved. Some argue that the tax burden will in the end always be borne by the immobile factor of production (i.e. labour; Koopmans, 1998); others do find some double dividend impact (Barker, 1998).

Thus, multilateral action is often the preferred strategy. But where international agreement is hard to achieve, national governments may be willing to reap the efficiency benefits from MBIs by taking unilateral initiatives. Experience shows that a careful design of the instrument can help them to reduce the negative impacts on international competitiveness, without coming into conflict with international trade rules.
4. Experience

3.2. The design of MBIs

In the case of environmental taxes and charges, the following parameters can be specified so as to minimize negative implications for international trade:

- **The tax (charge) base:**
  Emission charges are theoretically superior, but in practice not always feasible (especially when non-point sources are concerned). Thus, other parameters (substances, products, activities) are used as proxies for emissions. If several proxy parameters are available, they could be screened for their impact on international competitiveness and trade. Energy is an obvious and often used tax base. A tax on goods and services in relation to the energy used during manufacturing and distribution might avoid the drawbacks of conventional energy taxes, which act as an import subsidy and raise the cost of exports (Keil, 1997).

- **The tax (charge) level:**
  In theory, the tax level per unit of emission should be uniform and equal to the marginal abatement cost at the aggregate emission level aimed at. In practice, this level is hard to determine and other considerations will influence the tax rate. “Sheltered” sectors (such as households) are often taxed at a higher rate than “exposed”, energy intensive industries, so as to avoid loss of international competitiveness for the latter. This practice appears to be acceptable in international trade relations. Another way of mitigating the impact on competitiveness is to apply lower tax rates to emissions below the standard than to those exceeding it, as is common practice in some Central and Eastern European countries (Kaderjak, 1998).
Border Tax Adjustments:
Experience in the USA suggests that BTAs can play an important role in rendering an environmental tax effective and acceptable. The Ozone-Depleting Chemicals (ODC) tax contained a BTA system which enabled the USA chemical industry to develop substitutes for ODCs (instead of being wiped out by foreign imports with no benefit to the global environment). The American experience with both the ODC tax and the Superfund tax shows that BTAs on “embodied inputs” (i.e. on imported products which have been manufactured using the substances which are subject to the tax in the importing country, but which are not physically incorporated in the product) are administrable and do not necessarily conflict with GATT. However, BTAs should be avoided where the tax is a trivial percentage of the product’s price (Hoerner, 1998). There is some dispute on the question whether GATT will judge BTAs on their potential protectionist intention (Westin, 1998) or their actual protectionist effect (Brack, 1998).

Destination of revenues:
Fiscal neutrality is nowadays a strict condition in most industrialised countries. New environmental taxes should therefore be compensated for by a reduction in other taxes, or the revenues could be directly recycled to the taxpayers. A wide range of options is available to achieve this. It is probably important to neutralize distributive impacts as much as possible, in order to avoid extra wage demands in response to the tax shift (which would be harmful to international competitiveness) (Koopmans, 1998).

Enforcement:
The introduction of substantial taxes will always lead to evasion attempts, especially if neighbouring countries do not apply the tax. The lesson from experience in the USA is that evasion of environmental taxes can be kept down to manageable proportions. Crucial conditions are forethought, careful administrative design, proactive enforcement (creating an enforcement task force as soon as possible, rather than waiting until smuggling becomes apparent), and cooperation (both among responsible agencies and between government and business) (Hoerner, 1998).
Other MBIs also require a careful instrument design in order to fit well into the international trade framework. Some examples:

- **Subsidies** to environmental investments and environmentally sound practices are permitted to a certain extent under the GATT Agreement on Subsidies and Countervailing Measures. For instance, government assistance to promote adaptation of existing facilities to new environmental requirements is permitted, as long as this is limited to 20% of the cost (Brack, 1997). Other kinds of “green” government support, such as the EU’s Agri-environment Regulation (2078/92) may become more questionable in the course of time, as the GATT agreements require further support reductions. However, they may remain justifiable to the extent that they can be regarded as payments for the provision of public goods (Hogg, 1998).

- **International emissions trading schemes**, such as those for greenhouse gas emissions made possible under the Kyoto protocol, can be set up so as to avoid conflict with GATT/WTO provisions. The following issues deserve particular attention in this respect (Zhang, 1998):
  - the allocation of permits (grandfathering or auctioning);
  - the inclusion or exclusion of (groups of) countries;
  - sanctions for non-compliance;
  - trade measures against non-members of the emissions trading club.

- **Eco-labelling**, “green” public procurement and other types of preferential treatment for environmentally sound products are potentially powerful policy instruments to encourage sustainable practices (Krozer, 1998; Bruring, 1998). They should, however, be designed so as to minimize the risk of acting as trade barriers. This means, for instance, that the conditions should not be formulated in such a way that foreign suppliers have no chance to comply, or to prove that they comply. The EU’s “Special incentive arrangements concerning environmental protection” for solid wood products shows that “green” preferential treatment can be actually instituted, although a widely held view is that trade measures as incentives for sustainable management are a second-best solution (Elliott, 1998).
Box 1: Internalising the external costs of international transport

International trade usually implies international transport. If the external costs of this transport (environmental impacts, accidents) are not (fully) internalised, the costs paid by the buyer of the imported good will be below the social optimum. The volume of goods transported will be too large, and the modal split will be biased towards the most polluting modes of transport (road and air).

Strategies for internalising the external costs of international transport are being developed at several levels. The European Conference of Ministers has recently put forward a number of proposals, including the use of economic instruments (Perkins, 1998). The European Commission presented its opinion on the issue in a Green Paper (EC, 1995). The Alpine countries try to protect their vulnerable mountainous environment by imposing taxes on transit freight traffic (Rist, 1998). A feasibility study for a European environmental aviation charge has recently been completed (CE, 1998).
5. Policy Implications and Conclusions

The ongoing integration of world markets is often seen as a threat to the freedom of national governments to pursue stringent environmental policies, and in particular to apply market-based instruments such as eco-taxes. This fear does not seem to be justified in general. Free trade and environmental protection do not necessarily conflict, and where they do, MBIs are not in a worse position than other environmental policy instruments. However, if policy makers want to combine the use of MBIs with protection of their industry's competitiveness and compliance with world trade rules, they should carefully choose the level of intervention and the design of the instruments. A number of do's and don'ts can be mentioned:

- if feasible, try to achieve international co-ordination and harmonisation of eco-taxes, in particular when transboundary environmental problems are involved;

- however, don't give in to lobbies arguing that national eco-taxes are by definition disastrous for competitiveness;

- instead, use the wide range of options available (tax base and rates, exemptions, Border Tax Adjustments, revenue recycling etc.) to mitigate the negative side-effects of the fact that other countries do not apply the tax;

- when applying MBIs to favour “green” products and practices, always be aware of their potential to become (perceived or actual) trade barriers and look for the least trade distortionary option in designing the instrument.
References


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Krozer, J. (1998), Consumer oriented environmental instruments. Twente University, Leeuwarden (*).

Lothe, S. (1998), Environmental Countervailing Tariffs under the GATT Agreement in a Duopoly Model of Pollution-Intensive Industries. Norwegian School of Management, Sandvika (*).


Zhang, Z. (1998), Greenhouse Gas Emissions Trading and the World Trading System. Faculty of Law and Faculty of Economics, University of Groningen (*).

(*): refers to written and oral contributions to the International Workshop on Market Based Instruments and International Trade, Amsterdam, March 19-20, 1998.
Further Information

This briefing paper is largely based on a workshop held at the World Trade Center in Amsterdam, March 19-20, 1998.

For further information on this subject please contact:

Frans Oosterhuis
Institute for Environmental Studies (IVM)
Vrije Universiteit
De Boelelaan 1115
NL - 1081 HV Amsterdam
The Netherlands
Tel.: +31 20 4449511
Fax: +31 20 4449553
E-mail: oosterhuis@ivm.vu.nl
http://www.vu.nl/ivm
The European Union Research Network on Market-based Instruments for Sustainable Development.

The European Commission (Directorate XII), as part of its Environment and Climate RTD programme, “Human Dimensions of Environmental Change”, provided financial support for a network of research institutes devoted to the study of the design and use of market-based instruments for sustainable development. A series of workshops were held, where the latest research on particular market-based instrument or related theme was presented and discussed by leading scholars and policy practitioners. One of the products of each workshop has been the synthesis of the findings into a research policy brief.

The network was co-ordinated by Frank J. Convery and managed by Sheenagh Rooney, Environmental Institute, University College, Dublin. Web Page address for further information: http://www.ucd.ie/~envinst/index.html

Author and Editor

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The draft has been edited by the series editor, Frank J. Convery, Department of Environmental Studies, University College, Dublin, to ensure consistency in style and content with the series objectives. The series are produced to bring insights from the latest research and experience to those in the policy process.

The following research institutes are network partners:

- CESAM, Aarhus University, Aarhus, Denmark.
- CSERGE, University College, London, UK.
- Department of Applied Economics, Cambridge, UK.
- Department of Economics and Social Sciences, Agricultural University of Norway, Aas, Norway.
- Institute for Environmental Studies, Vrije University, Amsterdam, The Netherlands.
- ECOTEC Research and Consulting Company Ltd., UK.
- Environmental Economics Unit, Dept of Economics, University of Goteborg, Sweden.
- Environmental Institute, University College Dublin, Dublin, Ireland (Co-ordinator)
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