

[Eric Neumayer](#)

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Do countries fail to raise environmental standards?
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Eric Neumayer

Department of Geography and Environment, London School of Economics and Political
Science, Houghton Street, London WC2A 2AE, UK

Phone: 020-7955-7598. Fax: 020-7955-7412. Email: e.neumayer@lse.ac.uk

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Abstract: It is an important prerequisite of sustainable development that countries are able to raise their environmental standards. Environmentalists are concerned, however, that with enhanced international capital mobility the fear of capital loss might induce countries not to raise standards – a phenomenon commonly described as 'regulatory chill'. This article argues that while it is difficult to prove the validity of this claim, there exists substantial anecdotal evidence that 'regulatory chill' is relevant with respect to one issue at least: global warming. Several policy options are evaluated to deal with this problem according to a specified set of criteria. It is found that upward harmonisation of environmental standards and multilateral trade restrictions as part of multilateral environmental agreement are the preferred policy options.

Keywords: regulatory chill, capital flight, global warming, energy tax, harmonisation, multilateral trade restrictions

1 Introduction

This article addresses a concern by environmentalists with respect to international mobility of capital. The concern is that countries might fail to raise environmental standards for fear of capital flight - a phenomenon that is commonly described as 'regulatory chill' or, less commonly, as 'stuck in the mud' (Zarsky 1997; Greenpeace 1999; Maybey and McGilvray 1999; Porter 1999). This article will examine what evidence is there in favour of this claim and evaluate policy options to deal with the problem.

Sustainable development is an intensively contested concept (Neumayer 1999). However, no matter what the concrete definition is one wants to apply, a necessary condition for its achievement is that countries are able to raise environmental standards. In other words, ‘regulatory chill’, if existent, is inimical to sustainable development. It is therefore important to assess the evidence with respect to this phenomenon and evaluate policy options to deal with it.

A priori, we would expect ‘regulatory chill’ to be more prevalent with respect to environmental standards concerning pollutants affecting the so-called global commons, such as the global climate, the ozone layer, and biodiversity. We would expect it to be less significant for environmental standards concerning pollutants affecting the national environment only. This is because in the case of the global commons, the benefits of raising environmental standards have to be shared with all or at least many other countries as well. In as far as capital flight is perceived to be one of the costs of raising environmental standards, it will become relatively more important in this case then, as the costs are balanced against dispersed benefits.

What aggravates an examination of the evidence with respect to ‘regulatory chill’ is that the claim refers to the absence of something that would otherwise have happened (namely, the raising of environmental standards). Thus it makes in effect a counterfactual claim for which systematic statistical evidence is, almost by definition, difficult, if not impossible, to gather. In the words of Mabey and McNally (1999, p. 38): ‘That there is little statistical evidence of this ‘chilling effect’ is unsurprising, because evidence is needed of what has not happened. This issue must be investigated by historians and political scientists, not econometricians.’ It follows that one needs to look at anecdotal evidence to gauge the validity of the hypothesis.

The next section presents some of this evidence with respect to one environmental issue for which the existence of regulatory chill can be demonstrated quite well and which is caused by emissions that are clearly unsustainable: global warming. The main part of this article is contained in section 3, however, which evaluates various policy options to deal with ‘regulatory chill’ according to a specified set of criteria. Section 4 concludes.

2 Some anecdotal evidence with respect to global warming

Esty and Geradin (1998, p. 19) believe that the fear of capital loss has a ‘most significant impact (...) on the environmental policy-making process’. They suggest that ‘in almost every political debate over environmental policy in the United States, competitiveness concerns are cited as a reason not to move toward tougher standards’ (ibid., p. 20). While this quote refers to ‘competitiveness concerns’ more generally, it is relevant for investment issues as well, as exit of its capital would be the ultimate effect of a jurisdiction’s ‘loss of competitiveness’.

What Esty and Geradin suggest for the eminent importance of ‘competitiveness’ issues for environmental policy making in the United States holds true for Germany as well. The *Bundesverband der Deutschen Industrie* (BDI) and other industrial associations have continuously warned policy makers that further raising environmental standards, especially with respect to a so-called ecological tax reform, would damage the competitiveness of German industry and would lead to capital flight out of Germany (BDI 1998, 1999). But do these concerns and threats really translate into ‘regulatory chill’? Are policy makers scared away from raising standards or do they regard these threats by industry groups as cheap talk whose only function is to prevent policies that would raise costs to the industry and (potentially) lower its profits?

In the following I will concentrate on one issue for which I believe that we have sufficient evidence to show that the fear of capital loss has actually led to a ‘regulatory chill’. The issue is how much developed countries should reduce air emissions, particularly greenhouse gas emissions, and, specifically, whether they should introduce a tax on fossil fuels to achieve reductions in these emissions. As concerns the United States, President Clinton’s initial plan to introduce a 25.5 cents per million of British Thermal Units (BTUs) energy tax over a period of three years was defeated not least by the massive resistance by the ‘American Energy Alliance’, behind which stood the National Association of Manufacturers, and the Affordable Energy Alliance as well as the American Petroleum Institute, behind which in turn stands the US oil industry (Erlands-son 1994). These lobby groups claimed that such a tax would reduce their ‘competitiveness’ with a consequent loss of jobs and might ultimately lead to a flight of capital out of the U.S.

Similarly, the United States’ position in the Kyoto Protocol negotiations was significantly influenced by the opposition of some of its industries, which gathered in the so-called Global Climate Change Coalition (GCC), as well as the AFL-CIO, the major US trade union, which again warned that millions of jobs would be lost due to decreased competitiveness and capital flight if a climate change protocol did not encompass the major developing countries (BNA 1997; API 2000; Zarsky 1997, p. 36f.).¹ As a result, the U.S. Senate voted 95-0, with five senators not voting, in favour of a motion that the U.S. must not sign a treaty which does not mandate ‘new specific scheduled commitments to limit or reduce greenhouse gas emissions for developing country parties within the same compliance period’ or would result in ‘serious harm to the economy of the United States’ (BNA 1997) - ‘where by “serious harm“ the Senate meant, in the words of Senator Robert Byrd, a co-author of the resolution, “capital flight and a loss of jobs in

the United States“ (Barrett 1998, p. 21). In the end, the U.S. government signed the Kyoto Protocol, which does not include any emissions reduction obligations for developing countries. But whether this signature will be followed by the necessary ratification through the U.S. Senate is far from clear. Immediately after the U.S. government's signature under the Kyoto Protocol, the GCC, the Competitive Enterprise Institute as well as Republican Senator Chuck Nagel, co-sponsor of the above mentioned motion, called for President Clinton to bring the Protocol to the Senate floor so that it could be rejected (BNA 1998). The Clinton administration wisely refused, saying it will not submit the treaty until more developing countries agreed to limit their emissions of greenhouse gases (ibid.).

As concerns the European Union (EU), its Commission had originally proposed a community-wide introduction of a tax on carbon dioxide emissions and energy in 1992 (European Commission 1992), which, among other things, would have raised the price of petrol by about \$10 per barrel in 2000. Eight years later, at the time of writing this article, this tax has still not materialised and it is highly unlikely that it ever will.² At least partly this failure is to be explained by opposition from business groups, which did not leave policy makers, even those from environmental 'leaders' such as the Scandinavian countries and Germany, unimpressed. Maybe more importantly, however, the Commission's original proposal had the possibility for 'regulatory chill' already included. This is because in its Art. 1 it conditioned the realisation of the tax within the EU on the introduction 'by other member countries of the OECD of a similar tax or of measures having a financial impact equivalent to those provided for in this Directive'. In other words, the Commission was so much impressed by the threat of 'loss of competitiveness' and, ultimately, loss of capital, that it accepted not raising environmental standards if other OECD countries did not follow suit. As the likelihood of this to happen,

especially with respect to the US, was very small indeed, the EU's regulatory efforts were effectively chilled.

As concerns Germany, the ecological tax reform became realised after a Social Democrat-Green coalition took over power at the federal level in October 1998. However, the tax reform had to be downsized and had to include a number of exceptions for energy-intensive industries due to immense pressure from industrial lobby groups. Ironically, the Federal Environment Minister himself rushed to persuade industries and the public alike that with so many exceptions and rather low tax rates capital flight out of Germany has been effectively prevented (BMU 2000). Quite similarly, in the case of Sweden the manufacturing industry is exempted from half of the energy and carbon dioxide tax and the electricity production for the manufacturing industry is not taxed at all (OECD 1999, p. 67).

Are policies trying to overcome 'regulatory chill' necessary? The conclusion from the anecdotal evidence is that the fear of 'loss of competitiveness' in general and loss of capital in particular, seems to have exerted some regulatory chilling effect on developed countries with respect to reducing greenhouse and other air emissions and, in particular, with respect to introducing taxes on fossil fuels. This chilling effect did not completely prevent the introduction of carbon abatement policies. After all, the United States and other developed countries did sign the Kyoto Protocol (but have not ratified it yet), Germany has entered into an ecological tax reform, the Scandinavian countries had earlier already introduced carbon/energy taxes (Brack, Grubb and Windram 2000, pp. 59-70) and a European Union wide carbon tax might still materialise. But it is also true that policy makers in developed countries did not introduce abatement policies as stringent as they would have otherwise done had they not been concerned about 'loss of competitiveness' and loss of capital.

Whether this evidence in favour of the ‘regulatory chill’-hypothesis holds true for other environmental issues as well is not fully clear. Not many case studies have been undertaken on this matter and there is a clear need for future research. But greenhouse gas and other air emissions cause major environmental problems, so that it is appropriate to move one step further and evaluate policy options to deal with ‘regulatory chill’.

3 An evaluation of policy options to deal with ‘regulatory chill’

3.1 Policy options and criteria of evaluation

In this section, I will examine a number of policy options to deal with the problem of ‘regulatory chill’:

Harmonisation of environmental standards and minimum standards. This can either refer to the harmonisation of environmental laws and regulations or to the harmonisation of environment-related taxes. An existing example for this on a regional level are Art. 93, 95 and 175 of the Treaty establishing the EU. Art. 93 provides for the harmonisation of indirect taxes. Art. 95 has as its objective the adoption of ‘measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market’ (Art. 95:1). Art. 175 has as its objective the harmonisation of ‘measures answering environmental protection requirements’ (Art. 174:2). EU harmonised standards are in principle to be interpreted as setting minimum standards that can be exceeded by member states under certain conditions. Art. 95:10 allows for harmonisation measures to include, in appropriate cases, ‘a safeguard clause authorising the Member State to take, for one or more of the non-economic reasons referred to in Article 30,

provisional measures subject to a Community control procedure'. Art. 95:4 allows EU member states, more generally, to maintain national provisions if it deems them necessary for the protection of the environment. Similarly, Art. 176 proclaims that harmonisation based on Art. 175 'shall not prevent any Member State from maintaining or introducing more stringent protective measures'.

Enforcement agreements. An existing example are Art. 3 and 5 of the North American Agreement on Environmental Cooperation, the environmental side agreement to NAFTA, which reads as follows:

Recognizing the right of each Party to establish its own levels of domestic environmental protection and environmental development policies and priorities, and to adopt or modify accordingly its environmental laws and regulations, each Party shall ensure that its laws and regulations provide for high levels of environmental protection and shall strive to continue to improve those laws and regulations. (Art. 3).

With the aim of achieving high levels of environmental protection and compliance with its environmental laws and regulations, each Party shall effectively enforce its environmental laws and regulations through appropriate governmental action... (Art. 5:1).

Each party shall ensure that judicial, quasi-judicial or administrative enforcement proceedings are available under its law to sanction or remedy violations of its environmental laws and regulations. (Art. 5:2).

Multilateral trade restrictions. These play an important role in multilateral environmental agreements (MEAs). Their purpose is to deter non-compliance by parties to the agreement (internal free-riding) and to encourage participation (deter external free-riding) (Neumayer 2001a). Many of the most important MEAs - the Montreal Protocol, the Basel and Rotterdam Convention, the Convention on International Trade in Endangered Species - contain substantial trade restrictions (Neumayer 2000). Another problem, which can be addressed by restrictive multilateral trade measures is so-called leakage. Leakage describes the phenomenon that a decrease in emissions by the participants

to an agreement is counter-acted by an increase of emissions by non-members. Such an increase can be a deliberate decision by the free-riding countries or can be unintended. To understand this point, take the example of carbon dioxide emissions. If a sub-set of all countries agrees on limiting their carbon dioxide emissions, then production of carbon-intensive goods and services becomes relatively more expensive in these countries. Comparative advantage in these goods and services shifts to the non-participating countries who increase their production of carbon-intensive goods and services. Similarly, some especially carbon-intensive industries might migrate from signatory to non-signatory countries. Also, the reduction in demand for fossil fuels due to the limitation of carbon dioxide emissions by the participants to the agreement will lower world fossil fuel prices which increases demand for fossil fuels in non-member countries.

Border tax adjustments (BTAs). These are defined as the imposition of a domestic tax on an imported good, which has been taxed either not at all or at a level less than the domestic tax, and the remission of a domestic tax on products to be exported.³

Subsidies. These could be granted in the form of per unit of production or lump-sum payments to 'footloose', pollution-intensive or energy-intensive industries.

I will apply the following set of criteria in assessing these options:

- **Effective:** A policy option should achieve its objective of combating 'regulatory chill'.
- **Politically realistic:** A policy option should be politically realistic. Otherwise it has no chance of being realised.
- **Closed to abuse:** A policy option should not be open to abuse by protectionist factions in high standard countries under flimsy environmental pretexts.

- **Not unnecessarily restrictive:** A policy option should not restrict international flows of capital and trade beyond the necessary extent. It is this author's conviction that a liberal capital and trade regime is desirable, *ceteris paribus*.

3.2 Effective

The introduction of minimum standards in itself is likely to be ineffective. The essential problem of 'environmental chill' is that countries fail to raise standards above other countries' standards for fear of capital flight. This fear might be alleviated, but will not be overcome by setting a minimum standard, which will merely mean that those countries with the lowest standards have to raise their standards to the minimum. A 'competitive disadvantage' can still be perceived relative to countries at the minimum standard. The same applies to countries above the minimum standard, but below the current or future raised standard of the country considering raising its standards. Minimum standards can be more effective if they themselves are raised continuously, because then the environmental frontrunners can trust that their advance will sooner or later be matched by proportional increases in the minimum standards faced by other countries.

Whether harmonisation of standards is an effective policy option depends on what kind of harmonisation occurs. If harmonisation is downward, that is if high standards countries lower their standards considerably more than low standards countries raise theirs in order to agree on a common, but relatively low, standard, then this option will be completely ineffective. Instead of overcoming the obstacles to raising environmental standards, these same standards are lowered. Things can be different if harmonisation is upward, however. In this case, high standards countries will lower their standards considerably less than low standards countries raise theirs. In the extreme case, they might not lower their standards at all. Because countries now agree on a common, but rela-

tively high, standard, advanced countries have then less reason to fear that further raising their standards will lead to considerable loss of capital. However, high standards countries might only induce low standards countries to agree on upward harmonisation if they commit to not further raising their standards or, more realistically, if they commit to not insisting on further rounds of upward harmonisation in case they raised their standards after the initial upward harmonisation. In other words, upward harmonisation of standards might only be achievable at the expense of excluding or at least making more difficult further upward harmonisations. In this case, 'regulatory chill' would only be alleviated once, but not permanently.

Enforcement agreements are likely to be ineffective in overcoming regulatory chill as they do nothing to raise standards, but merely attempt to enforce existing standards. They might even lead to the perverse effect of exacerbating the problem. This is because it might impose a further fear on a country contemplating a rise in environmental standards: that it would be obliged via international agreement to enforce these higher standards.

Multilateral trade restrictions can be effective if they are part of the instruments of a multilateral environmental agreement (MEA) to ensure compliance with the treaty and deter free-riding. The idea is that instead of unilateral action a multitude of countries agree on raising their respective environmental standards. This collective action overcomes the prisoner's dilemma in which countries facing 'regulatory chill' are caught: countries would like to raise their environmental standards, but only if all other countries raise their respective standards as well since otherwise the costs of loss of capital are feared to outweigh the benefits from unilateral standard raising. But, in order to be successful, this kind of collective action needs to ensure compliance of the participating countries (deter internal free-riding). Also, it needs to ensure that as many countries as

possible participate in the multilateral agreement. That is, external free-riding needs to be deterred. Trade restrictions can be an effective instrument to deter both internal as well as external free-riding (Barrett 1997). If they are effective, then they can overcome 'regulatory chill'.

Subsidies to 'footloose' or pollution-intensive or energy-intensive industries can in principle be an effective policy option. If they fully compensate the industries for any cost increases due to higher environmental standards then there is no incentive for these industries to flee the country. However, depending on the way in which subsidies take place the initial environmental objective can become partly defeated. If some industrial sectors receive an implicit subsidy in simply exempting them from the taxes or offering them a lower tax rate, then the environmental benefits will be lower than they would otherwise be.⁴ Alternatively, the tax rates facing all non-exempted agents have to be raised to secure achieving the same level of environmental benefits. Also, exemption of certain industries from taxation leads to all sorts of inter-sectoral allocative inefficiencies. Furthermore, it will attract firms into the subsidised industries as it raises their relative profitability. If the 'footloose' industries are also pollution-intensive industries, this re-allocation of capital will again partly defeat the environmental objective. To avoid the negative effects of subsidisation on the environmental benefits achieved, the full tax rate should equally apply to all industries and the 'footloose' industries should receive a lump-sum subsidy to compensate them for their total cost increases. It should be noted, however, that this option will still lead to allocative inefficiencies as subsidised industries become more profitable relative to non-subsidised industries.

BTAs can in principle be an effective policy option. If foreign competitors have to pay the differential in environmental compliance cost at the border and if domestic exporters are fully compensated for complying with higher environmental standards, then

there is no incentive for capital to flee the country. However, because compensating domestic exporters for cost differentials is equivalent to providing them with a subsidy, BTAs can face the same kind of problems with allocative inefficiencies and defeat of the environmental objectives as discussed with respect to subsidies above. The higher is the share of domestic production that becomes exported, the more prevalent will these problems become.

3.3 Politically realistic

The introduction of minimum standards as well as the harmonisation of international standards or an enforcement agreement does not currently seem to be pursued with any great vigour by developed countries, at least outside the EU. Even within the EU there is no great momentum apparent towards the harmonisation of environment-related taxes. However, should developed countries decide to pursue harmonisation there would be no hindrances by international trade rules as the WTO does not prohibit consensually agreed upon minimum or harmonised standards. The same is true with respect to an enforcement agreement.

Trade restrictions have become a common instrument in MEAs. Their consistency with WTO rules is not entirely clear, but no MEA related trade restriction has ever been challenged before the WTO (for more information, see Neumayer 2001b, chapter 9). What is of interest here is whether the MEAs themselves are politically realistic. Multi-lateral action with respect to the environment is often difficult to bring about, takes a long time and is regarded by many environmentalists as insufficient since countries tend to agree on the lowest common denominator. The Kyoto Protocol represents a case in point: It took nearly six years after the Rio Summit to conclude a binding agreement. The past difficulties in bringing about this agreement are legendary as are, and even

more so, the future difficulties of bringing the Protocol into force and of deciding on the many particularities left unaddressed. Indeed, one of the issues still to be addressed is whether and how trade restrictions should play a role in ensuring compliance and deterring free-riding. Finally, many environmentalists consider the Protocol as falling so much short of what they regard as necessary action that presumably they would regard the Protocol as further proof for 'regulatory chill' rather than as a significant step towards its overcoming.

BTAs are usually liked by domestic policy makers who find the notion that foreign competitors must face the same environmental compliance costs as domestic producers appealing. However, BTAs can clash with international trade rules. WTO rules allow BTAs for taxes on environmentally-damaging products, which are quite common. They also allow for BTAs for product-related environmental taxes, as can be seen by a WTO panel decision upholding a US tax on luxury cars and a gas guzzler tax (WTO 1994). BTAs for non-product related taxes, usually known as taxes on process and production methods (PPM), are much less common, but there are two prominent examples. One is BTA for chemicals manufactured using base chemicals as feedstock, which were subject to product taxation in the US. As this tax was part of the US Superfund Amendments and Reauthorization Act of 1986 it is commonly referred to in the literature as the superfund tax. The other example is BTA for ozone-depleting chemicals, which were subject to product taxation in the US as part of its effort to phase out the production and use of these substances. Whereas the BTA for the ozone-tax was never challenged under the rules of the international trade regime, the BTA for the superfund tax was. In 1987 a GATT panel basically upheld the BTA for the superfund tax *because the taxed input was to some extent physically incorporated in the final product* (GATT 1987). If, on the other hand, the taxed input is not physically incorporated in the final product, then the

relevant WTO Agreement on Subsidies and Countervailing Measures does not seem to allow for BTA.⁵ As most environmentally relevant inputs into the production process do not become physically incorporated in the final product, WTO rules would forbid the use of BTA for most cases in which countries would want to apply them. Furthermore, WTO rules do not allow for BTAs for cost differences that follow implicitly from higher environmental standards if these higher standards are not realised via higher taxes or charges, but via command-and-control or other forms of regulation instead. That the relevant WTO rules could be reformed to allow for general PPM related BTAs is highly unlikely. First, there does not seem to be strong support for such a reform even among the developed countries. Brack, Grubb and Windram (2000, p. 86f.) cite a letter from a US Trade Representative official referring to an informal ('Gentlemen') agreement among developed countries to the effect that the Agreement on Subsidies and Countervailing Measures

was never intended to fundamentally expand the right of countries to apply border adjustment for a broad range of taxes on energy, especially in the developed world (...). We discussed the matter with other developed countries involved in the Subsidies Code negotiations. We are satisfied that they share our views on the purpose of the text as drafted and the importance of careful international examination before any broader policy conclusions should be drawn regarding border adjustment and energy taxes.

Second, because a reform of WTO rules would need a two third majority according to Art. X:3 of the Agreement Establishing the WTO, developing countries would need to consent as well. However, they are completely against such a reform as they rightly fear that they would be affected by BTAs as well (or even predominantly so) and not just developed countries themselves (ICTSD 1999).

Subsidies seem to be politically realistic as they might be considered an easy option less overtly intrusive into foreign countries' rights. However, as they might be regarded as giving domestic industries an unfair advantage they might still be regarded as harmful to foreign countries and might therefore clash with international trade rules. The WTO's Agreement on Subsidies and Countervailing Measures distinguishes between subsidies that are widely available within the economy and subsidies that are specific to certain enterprises, industries or regions (Art. 2). It imposes rules only on the latter category. Specific subsidies are prohibited if they are contingent on export performance or local content (Art. 3). Otherwise, with few exceptions, they are actionable, that is subject to challenge if they cause adverse effects to the interests of another WTO member country. To cause adverse effects, a subsidy must cause injury and serious prejudice to the industry of another country which would nullify or impair its benefits under the GATT treaty (Art. 5). As serious prejudice is difficult to prove, there exists a presumption of serious prejudice if subsidies are greater than 5 per cent ad valorem, cover operating losses or accrue in the form of direct forgiveness of debt (Art. 6). One of the types of subsidies excepted from the rules laid down in the WTO Agreement on Subsidies and Countervailing Measures and therefore non-actionable is assistance to adapt existing industries to new environmental requirements (Art. 8.2 (c)). However, to qualify such assistance must occur only once, not cover more than 20 per cent of the adaptation costs and has to be made available to all firms which can adopt the new equipment and processes. As most subsidies would not fall in this category and could well exceed 5 per cent ad valorem of benefited firms, subsidies to prevent capital flight might be challenged under WTO rules. This has not been tested yet as there has been no dispute over this kind of subsidies so far, but it could well be that this policy option becomes partly barred and therefore rendered politically unrealistic.

3.4 Closed to abuse

Minimum standards as well as harmonisation of standards and an international enforcement agreement are relatively closed to abuse as they depend on the consent of all parties involved. Things are different with trade restrictions, which partly are targeted towards non-participating and therefore non-consenting parties. These restrictions can be abused as participating countries (or a subset of them) might install restrictions against non-participants under the pretext of fulfilling its mandatory obligations according to a MEA, but with proper protectionist intentions instead. BTAs and subsidies are also open to abuse. They open a pandora's box in that all sorts of industries will lobby policy makers to grant them protection from 'unfair' foreign competition. The incentive for protectionist abuse might be higher with BTAs relative to subsidies, as subsidies cost money to the domestic taxpayers, whereas in the case of BTAs the costs are partly borne by the foreign producers and partly, but much less visibly, by higher prices for domestic consumers.

3.5 Not unnecessarily restrictive

Minimum standards as well as harmonisation of standards are not very restrictive in the sense that once the standards have been established capital as well as goods and services are allowed to cross borders without constraint. However, in so far as some countries' environmental standards might rise above their efficiency levels, these countries would be implicitly confronted with inefficient restrictions towards their exports of goods and services. An enforcement agreement is not restrictive at all as it merely aspires to ensure that a country's existing laws and regulations are actually enforced. Trade restrictions are restrictive by definition. However, if trade restrictions as an instrument of a MEA to

ensure compliance and deter free-riding are fully effective, then ironically they will not be restrictive at all, as there is no need to employ them. The best restrictions are the ones that will never come into force. BTAs can be restrictive as well. If they are applied in a protectionist or non-transparent manner then they will restrict the flow of capital and goods and services. Subsidies can be restrictive as well if they are applied in a protectionist manner. If they are then they will distort the comparative advantage of countries such that the non-subsidising countries would face implicit restrictions towards their exports of goods and services and their import of capital.

4 Conclusion

In a world of imperfect information about what constitutes efficient environmental standards, it is not easy to assess whether countries inefficiently fail to raise their standards or not. ‘Regulatory chill’ is a potentially serious, but difficult to detect phenomenon. As one is looking at counterfactual claims, the researcher has to rely on anecdotal evidence. Some of this evidence has been presented in this article. It seems fair to say that ‘regulatory chill’ has not been proven - neither in general nor with respect to the case of reducing greenhouse gas emissions. But enough evidence is there to warrant an evaluation of policy options to address the (potential) problem of ‘regulatory chill’, which this article has attempted to do.

Table 1 provides a summary of the findings on evaluating policy options. As can be seen, no option fares clearly better than all others. However, harmonisation of standards and multilateral trade restrictions do relatively well on our criteria so that they are recommended here as policy options to deal with potential ‘regulatory chill’ problems. The challenge with harmonisation of standards would be to strive for upward rather than downward harmonisation to make it effective in overcoming ‘regulatory chill’ and to

gather political support to make it more politically realistic than it currently seems to be. As experience with the EU has shown, one way to facilitate upward harmonisation is to make increased usage of majority voting in place of an unanimity requirement. The challenge with multilateral capital and trade restrictions would be to gather political support for fast and effective multilateral action on international and global environmental problems.

< INSERT TABLE 1 HERE >

How these challenges can be met, that is, what can be done to facilitate upward harmonisation and multilateral environmental action is beyond the scope of this paper and the subject of ongoing research. Another objective of future research would be an examination of the evidence with respect to ‘regulatory chill’ on issues other than global warming. If ‘regulatory chill’ really is a significant and widespread phenomenon, then the payoff to research demonstrating its evidence and finding ways to overcome it will be very high indeed in terms of achieving sustainable development. This is because, as mentioned in the introduction, ‘regulatory chill’ is inimical to the very idea of sustainable development which requires that countries are not deterred from raising their environmental standards for fear of capital flight.

Another possibility would be, of course, to try to convince policy makers that their obsession with ‘competitiveness’ is misguided: countries do not compete with each other the way businesses do, hence they cannot really gain or lose ‘competitiveness’ (Krugman 1994). But here, as in so many other areas, what really matters is what policy makers believe, not what economic theory and evidence says, and there can be no doubt

that they actually do believe that countries compete with each other. To fight against their preoccupation with ‘competitiveness’ is therefore likely to be a waste of time.

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Table 1: Evaluation of policy options

	Minimum standards	Harmonisation	Enforcement agreement	Multilateral restrictions	Border tax adjustments	Subsidies
effective	-	+/-	--	++	++	++
politically realistic	-	-	-	+/-	-	-
closed to abuse	+	+	+	-	-	-
not unnecessarily restrictive	+	+	++	+	+/-	+/-

++ very good, + good, +/- neutral, - poor, -- very poor

ENDNOTES

¹ The GCC counts 39 U.S. corporations and industry associations among its members (BNA 2000a). The companies mainly come from the steel, oil, agriculture, electricity, rail and chemical industries. The associations include such important ones as the American Petroleum Institute, the U.S. Chamber of Commerce, the Chemical Manufacturers Association and the National Mining Association. GCC lost several prominent members, including Royal Dutch Shell, BP Amoco, DaimlerChrysler, Ford and Texaco. Shell and BP changed their position and support the Kyoto Protocol by now and Chrysler had to change its position after being taken over by Daimler. Ford and Texaco, on the other hand, left the coalition merely for image reasons as they considered their continued membership to be detrimental to their reputation. However, both companies have pledged to continue opposing the Kyoto Protocol as well as any other mandatory greenhouse gas emission cuts (BNA 1999, BNA 2000).

² As a substitute EU countries are now considering the imposition of minimum excise duties to a wide range of energy products. However, even this rather minimalist solution is currently blocked by opposition from environmental 'lagers' such as Ireland and Spain (ENS 1999).

³ Note that BTAs are only applicable for the imposition of a tax. They are not to be confused with so-called eco-tariffs, which are supposed to compensate for international differences in environmental compliance costs, whether these differences are due to taxes or not. Daly (1993, p. 26), for example, demands that 'whoever sells in a nation's market should play by that nation's rules or pay a tariff sufficient to remove the competitive advantages of lower standards'. Arden-Clarke (1993, p. 81) from the World Wide Fund for Nature (WWF) wants 'environmental leaders' to be able to 'take trade measures that "level the playing field" between environmentally sound and unsound goods.' The International Pollution Deterrence Act, unsuccessfully introduced into the 102d U.S. Congress as motion S.984 by Senator Boren (D-OK), called for countervailing duties equivalent to the cost that it would take a foreign firm to comply with U.S. domestic environmental standards (OTA 1992, p. 92).

⁴ This is the case, for example, with the German ecological tax reform, where energy-intensive manufacturing firms can get a rebate on their tax. The draft European Council Directive in its Article 10 promised this rebate for all energy-intensive firms. Similar exemptions apply with respect to the Danish and Swedish carbon/energy taxes (Brack, Grubb and Windram 2000).

⁵ For a detailed explanation of the quite complicated legal issues involved see Brack, Grubb and Windram (2000, pp. 81-90); Schoenbaum (1997, pp. 308-312); Dierkop (1994, pp. 820-823). However, a final judgement on this question cannot be made as no WTO panel has ever decided on it.