

Competitiveness and Climate Policies: Is There a Case for Restrictive Unilateral Trade Measures?

Introduction

The world is facing a situation in which temperatures are rising as a result of human activities involving unprecedented levels of emissions of greenhouse gases. Climate change is already causing and will continue to cause a rise in sea levels, a decrease in snow and ice, more frequent droughts, more intense tropical cyclones and other extreme phenomena. This in turn is affecting, and will affect, living conditions all over the world. Poor countries, which have contributed the least to climate change and are the least equipped to deal with the consequences, are being hit the hardest.

Further climate change seems inevitable. However, the damages can be limited if concrete and substantive action is taken to significantly reduce carbon and other green house gas (GHG) emissions.¹ This response has to be global. If the industrial countries alone were to severely restrain the emission of greenhouse gases it would not be enough. This is a big challenge. The last attempt to curb emissions through a global deal among nations, the Kyoto Protocol, failed to include the United States of America, the world's biggest emitter of carbon dioxide at the time. Under the Kyoto Protocol, developing countries were exempt from making binding reduction commitments based on the principle of "common but differentiated responsibility." Moreover, although marking an important first step, reductions resulting from the Protocol have so far been very modest. Hence, the international community has embarked on a quest for a global arrangement that will entail considerably larger reduction commitments and much broader participation, while respecting historical responsibility and the differences in capabilities among nations.

Although the optimal solution, a global deal resulting in the necessary cuts in global emissions, is well understood, it is by no means certain that world leaders will be able to achieve it. Views differ on who should bear the responsibility and who should pay.

If only some countries take action, there is a risk that their efforts will be rendered futile as some emissions could simply move to countries with less strict climate-change regulations, thereby resulting in so-called carbon leakage. This could also result in distortions to competitiveness, particularly for energy- and carbon-intensive industries, as producers



¹ The earth's most abundant greenhouse gases are water vapor, carbon dioxide, methane, nitrous oxide. Ozone and CFCs.

in mitigating countries would face costs for reducing emissions and compete against firms not burdened or burdened less by such costs. In response to these considerations and in order to leverage participation of developing countries in an eventual global deal, legislators, industry leaders and lobbyists have come up with the idea of using measures at the border, so-called border carbon adjustments (BCAs). However, multiple objections have been raised against such measures. These objections are based on questions of effectiveness as well as economic and legal concerns. Understanding the possible merits and impacts of the eventual use of BCAs is particularly relevant in the context of current uncertainty with respect to the outcome of the Copenhagen Climate Conference in 2009. If there is no success in securing a full-fledged global deal, national policies and measures, eventually including BCAs, may well end up acting as the primary instruments in curbing global carbon emissions.

This paper provides a short overview of some of the proposals related to BCAs and discusses them from an economic and legal perspective. It also takes a preliminary look at potential consequences for developing countries' production and trade should BCAs be introduced in major markets.

Describing and defining concerns

As mentioned above, two of the concerns underlying the proposals of border measures relate to competitiveness and leakage. Let us, therefore, start by describing and defining these concepts.

Competitiveness, as the expression is used in the discussion of BCAs, generally refers to the international competitive position of firms in countries with climate change mitigation policies compared with those of firms in non-mitigating countries. The concern relates to the situation where firms in some countries would face costs for carbon emissions related to their production, and compete with firms in countries without such costs. The firms in question are primarily in a few energy-intensive sectors exposed to international competition such as iron and steel, aluminium and copper, cement and glass, paper and pulp and chemicals.

It is important to bear in mind that the discussions do not, or at least should not, in our view, refer to the competitive position of a country. First, countries do not compete in international trade. Rather, the whole idea behind international trade is that all countries stand to win from an optimal allocation of resources. Second, as mentioned, discussions focus on a few sectors of semi-finished goods. Processing industries do face international competition, but their competitive positions as a result of climate change policy, or a lack thereof, are so far not generally addressed in discussions about BCAs.

International carbon leakage can be defined as the relocation of GHGs from climate-regulated and carbon-constrained economies to geographical areas under lesser carbon constraints, either through the actual migration of emissions-intensive industries or through a transfer of market share in emission-intensive goods. It is so to speak the environmental side of the issue of competitiveness.

Competitiveness in the Treaties and Negotiations on Climate Change

Since 1992 the United Nations Framework Convention on Climate Change (UNFCCC) has provided for the consideration of what can be done through international cooperation to reduce global warming and to cope with whatever temperature increases are inevitable.

Recognition of competitiveness and trade issues related to climate change is present and growing within the climate negotiations under the UNFCCC. Indeed, trade and climate negotiators and policy makers are aware that approaches to reducing GHG emissions, trade-associated and others could bring about shifts in the competitive positions of firms across the globe.

The climate treaties explicitly address concerns about compatibility with international trade rules. Parties to the UNFCCC clearly perceived the intersections and the potential risks of global action early on and included clauses to reduce negative or unintended consequences of the actions taken to address climate change. Article 3.5 of the UNFCCC

and Article 2.3 of the Kyoto Protocol state that measures taken to combat climate change should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade and should be implemented to minimize adverse effects, including on international trade, and social, environmental and economic impacts on other parties. Article 3.5 of the Convention further emphasizes the importance of parties cooperating to promote a supportive and open international economic system that would lead to sustainable economic growth and development for all. In this sense, the Convention promotes goals that are compatible with the core objectives espoused by the World Trade Organization (WTO).

Article 3.14 of the Kyoto Protocol asks that parties implement their commitments in a way that minimizes the adverse social, environmental and economic impacts on developing country parties. An implementing decision exists for this Article (Decision 31/CMP.1), which sets out a work plan to address the removal of subsidies and barriers to trade in this regard. Consequently, the discussions of the working group that negotiates reduction commitments by developed countries after the Kyoto Protocol expires in 2012 recently addressed the benefits and potential adverse effects of various kinds of actions with a view to determining which might be warranted, and in what circumstances. They included: policies and measures leading to changes in technologies; switching from international to local sourcing; the adoption of standards; and tariffs, taxes and subsidies or other trade-distorting policies². In principle, this work plan and its ensuing documents, workshops and debates could lead to further decisions on this issue under the Kyoto Protocol.

The current negotiations on a new global climate change “deal” that intend to complement the Kyoto Protocol and, in particular, incorporate the United

States and the largest developing country economies more meaningfully in addressing climate change, are heavily charged with competitiveness concerns. Specifically, BCAs have been a point of contention in the context of the current global climate negotiations and will likely continue to be so up to, and beyond, the negotiations in December 2009 at the Conference of the Parties (COP) in Copenhagen.

The explicit appearance of BCAs in U.S. draft national climate legislation has spurred developing countries to introduce specific language in draft negotiating text to prevent the use of such measures. The developing country text seeks to prevent developed countries from using “any form of unilateral measures, including countervailing border measures, against goods and services imported from developing countries on grounds of protection and stabilization of the climate.”³ They underline the potential infringement of UNFCCC Articles 3 and 4, which stress the principles of common but differentiated responsibilities, address the linkages between international trade and climate change and the responsibility to support mitigation actions in developing countries with financing and technology.

Another area of discussion that seeks to address questions of competitiveness is that of “cooperative sectoral approaches and sector-specific actions,” a specific subtopic in the current negotiations. From the outset, parties have argued over potential sectoral targeting - a concept that developing countries saw as a back door to mitigation targets for them. This discussion continues in the context of the cooperative approaches, which raise concerns of international labelling, benchmarking and standards. While proponents of sectoral targeting argue that it would provide focused approaches to mitigation, level the global playing field and support the strengthening of the global carbon market, developing countries that oppose this approach wish for sectoral discussions to focus exclusively

² The Climate Secretariat was tasked with producing an Information note that addresses carbon taxes and levies, subsidies, border carbon tax adjustments, cap-and-trade schemes, standards and labeling, among others. The information note provides a good analysis of potential impacts on developing countries of such measures taken by developed countries. The paper is available at FCCC/KP/AWG/2009/INF.3

³ “Developed country Parties shall not resort to any form of unilateral measures including countervailing border measures, against goods and services imported from developing countries on grounds of protection and stabilization of the climate. Such unilateral measures would violate the principles and provisions of the Convention, including, in particular, those related to the principle of common but differentiated responsibilities (Article 3, Paragraph 1); trade and climate change (Article 3 paragraph 5); and the relationship between mitigation actions of developing countries and provision of financial resources and technology by developed country Parties (Article 4, Paragraphs 3 and 7).”

on defining financial and technology support to developing countries to enhance their mitigation - an approach that reflects commitments made by developed countries under the UNFCCC.

Discussions have evolved to address sectoral cooperation for technology transfer, with specific attention to two sectors: agriculture and bunker fuels. The impacts of climate change to agricultural production and trade are predicted to be significant. In the negotiations, the issue unifies interests across developed and developing country lines, but also heightens sensitivities about potential trade impacts. A short paragraph in the current negotiation text on the issue not only stresses development priorities, but also emphasizes the need to ensure activities in the sector do not “result in barriers to or distortion of the international trade system of goods and products of the agricultural sector” - a clear reference to potential sectoral targets, carbon labelling, carbon ‘foot printing,’ BCAs or other national approaches that could impact global trade competitiveness. Bunker fuels from aviation and maritime transport is another area of specific focus that raises similar concerns about trade impacts and which parties are grappling with in the negotiation text, although these activities have previously been addressed by the International Civil Aviation Organization and the International Maritime Organization, respectively. Trade flows will be, by definition, inherently impacted by any cost-altering measures on bunker fuels. Moreover, distance and remoteness may be, most likely, particularly penalized.

Options to Deal with Competitiveness Concerns

To put BCAs in a broader context as a tool to deal with issues of competitiveness and leakage, this chapter briefly looks at the other main alternatives to tackle these issues.

Asymmetric levels of climate change regulation are likely to lead to carbon prices being higher in mitigating countries than in others, potentially leading to distortions in competitiveness. In order

to level the playing field, carbon costs could be adjusted between mitigating and non-mitigating countries. There are three main alternatives for doing so: first, adjust carbon costs downwards for domestic producers in energy intensive sectors that are also exposed to international competition; second, adjust carbon costs upwards or downwards at the border; or third, globalize carbon costs.⁴ Each of the three options can be achieved through different policy tools. The first two alternatives are politically interesting as they can be applied unilaterally, while the third alternative requires international cooperation. As mentioned above, discussions are indeed taking place in the UNFCCC about means of globalizing carbon costs through sectoral approaches. In this paper, we focus on the second alternative, border measures, albeit to get a clearer picture of the potential role for BCAs. We will also briefly appraise the two other alternatives.

Adjusting compliance costs downward for domestic producers

A well-known tool in this field is the allocation of free allowances. It means that emission allowances in a cap-and-trade system are distributed for free to certain industries. The industries can then choose either to continue emitting and thus use the emission allowances, or to make investment in cleaner technology and thus reduce their emissions and sell the emission allowances to firms with higher abatement costs. Although allowances are free, they are associated with a so-called opportunity cost. This tool is already in use in the European emission trading scheme (ETS) and is included in several other proposed ETSs.⁵ Free allowances can be useful in that they can support firm profitability while preserving price signals and incentives to reduce emissions. The value of the permits is unaltered by whether or not they are distributed free of charge. Therefore, firms have an interest in reducing emissions, so they can sell a permit rather than use it. Moreover, the approach may be useful as it limits the extent to which climate policy directly interferes with trade.

⁴ This section comes from Dröge (2009).

⁵ The discussion about free allowances is based on OECD SG/SD/RT(2009)3.

Another tool is investment subsidies, where the government could give subsidies to investment conditional on specific carbon-efficient technologies or on specific carbon-related standards.

A third option is to change the cost structure of production to reduce the non-carbon cost-burden. In order to keep up the carbon-price signal, other costs such as corporate taxes or labour costs could be reduced by governments.

Globalizing carbon costs

One approach to globalize carbon costs is to have sectoral agreements for energy-intensive industries, under which governments commit to actions intended to moderate or reduce GHG emissions from a given sector. Such agreements could take various forms, such as using standards, emission targets or a direct tax. Although less economically efficient than economy-wide programs in achieving emission reductions, they could be an interesting alternative as they may be politically more feasible. They are also likely to be more successful than border measures imposed unilaterally in addressing competitiveness concerns and reducing emissions.

A second tool would be linking the emissions trading schemes of different countries, with the ultimate goal of a global carbon market.

The Role for BCAs in OECD-Countries' Climate Change Mitigation Policies

In this section, we focus on a few major OECD economies and their potential use of BCAs. However, should one country introduce BCAs, it is possible that many other countries, including developing countries, would follow. Some analysts even talk about risks of a trade war or, to avoid that, the need for a system of multilateral disciplines that organize a new world of countries using BCAs.

The EU adopted an ETS on 1 January 2005. It accounts for about half of the GHG emissions in the Union, including electrical utilities that

combust fossil fuel, oil refineries, coke ovens, iron and steel plants and factories making cement, glass, lime brick, ceramics, pulp and paper.⁶ Although the depth of the emission cuts has so far been rather limited, the fact that the EU has been moving ahead of other industrial countries with respect to action on climate change has led to concerns among stakeholders about both the impacts on competitiveness of European industries and the environmental consequences linked to the possibility of carbon leakage. In light of this, various proposals about carbon equalization schemes at the border have been put forward, the most recent one linked to French president Sarkozy's proposal on a national carbon tax. So far, the EU has decided to keep the option of border adjustment in "the bottom drawer," while awaiting the results of the 2009 UNFCCC climate change negotiations in Copenhagen.

Competitiveness concerns were one major reason the United States failed to ratify the Kyoto Protocol in the 1990s. Right now, as the U.S. Senate is debating the Clean Energy Jobs and American Power Act (the "Boxer-Kerry bill"), competitiveness remains high on the agenda. At this stage, the bill does propose to include some form of BCAs, which are intended to be consistent with international obligations, without going into further detail.

The American Clean Energy and Security Act of 2009, (based on the "Waxman-Markey bill"), was passed by the U.S. House of Representatives in June 2009. The Act does include several measures, such as allowance requirement for imports, to prevent a loss in competitiveness for U.S. industries. This inclusion reflects a more general preoccupation with competitiveness concerns in U.S. policy-making.

So far, the Obama administration has not given its support to such measures. On the contrary, the U.S. Trade Representative, Ron Kirk, recently stated, "The Administration believes that the best approach to address concerns with carbon leakage is to negotiate a new international climate change agreement in the United Nations..."⁷

⁶ Nordström, Håkan (forthcoming).

⁷ Letter from USTR Ron Kirk to Joe Barton dated April 14 2009. The letter can be downloaded from <http://ictsd.net/downloads/2009/04/kirk-letter-14-04-09.pdf>.

Indeed, U.S. President Obama has on numerous occasions criticized the use of BCAs. During a press interview held in Washington, D.C. in June 2009, U.S. President Obama said, "At a time when the economy worldwide is still deep in recession, and we've seen a significant drop in global trade, I think we have to be very careful about sending any protectionist signals out there."⁸

Climate change policies of other major OECD countries are currently less centred on BCAs. Japanese climate change policy has generally been oriented toward voluntary measures rather than binding targets. Thus, there has been relatively little expression of competitiveness concerns and consequently, less frequent calls for BCAs.⁹ However, this may change now that the Japanese government has announced a new target of reducing emissions by 25 percent in 2020 relative to the levels of 1990.¹⁰ Canada has so far not contemplated the use of unilateral trade measures, because climate mitigation targets and implementation simply have not been stringent enough to generate sustained concerns about competitiveness loss. However, it is likely that Canada will decide to act in a way similar to the United States.¹¹ Australia's proposed scheme for climate change mitigation does contain measures to prevent leakage and losses of competitiveness, but these relate to tools, such as free allowances, rather than to BCAs.¹²

The Efficacy of Border Measures

As mentioned, countries contemplate the introduction of BCAs to deal with three issues: one, the risk of a loss of competitiveness, two, the risk for carbon leakage and three, to create leverage for developing countries to take action on climate change. In this chapter, we will look into the arguments for the two first issues from an economic perspective and explore whether BCAs are likely to be effective in dealing with them.

We will come back to the question of leverage in chapter 8.

Competitiveness concerns arising from unmatched climate change regulation

For most post-industrialized countries, competitiveness concerns related to climate change mitigation policies are not a large problem economically. The OECD has reviewed a number of studies and comes up with a span of 0.5-2 percent of post-industrial countries' GDP being exposed to significant increases in production costs due to the imposition of a carbon cost.¹³ In spite of this, concerns related to loss of competitiveness are a real political issue in some OECD countries, and it does constrain their leadership from taking on ambitious climate change policies. This should be seen against a backdrop in which heavy industries in many industrial countries have for a long time been under pressure from more competitive producers, mainly in emerging economies, resulting in declining market shares and losses in employment.

The experience of environmental policies so far and their impact on competitiveness does not give much reason to worry. If there has been any effect at all from such policies on competitiveness, it has been moderate and seems in many cases to have been compensated by complementary policies, such as tax rebates, investment subsidies and other measures.¹⁴ However, it should be noted that climate change mitigation efforts so far have been on a fairly small scale compared with the effort that will be required in the next decades. Moreover, affecting cost functions through policies aimed at altering the energy supply, its use and the carbon emissions of production is something new, which means that it is a delicate task to estimate their effects. It is, therefore, possible that more ambitious reduction targets may change trade patterns in the future.

⁸ *Bridges Weekly Trade news Digest* vol 13 no 39.

⁹ Torney and Gueye (forthcoming).

¹⁰ Statement by the Japanese Prime Minister Yukio Hatoyama at the United Nations Summit on Climate change, September 2009.

¹¹ Statement at a Workshop on Trade and Climate Change organized by the Canadian International Council in Toronto, October 2009.

¹² For a more complete discussion about the climate change mitigation policies of these countries, see Torney and Gueye (forthcoming).

¹³ OECD SG/SD/RT(2009)3.

¹⁴ National Board of Trade (2009), Kenber et al (2009).

Carbon leakage

Simulations of how much leakage could occur from climate change policies vary widely, depending on country and sector coverage, level of ambition of climate policy and other factors. Generally, higher leakage rates can be expected for more trade-intensive sectors with a high intensity of emissions or energy inputs. It can be noted, however, that none of the simulations in existing research focusing on sectoral leakage indicate a leakage near 100 percent.¹⁵ In other words, carbon leakage is not likely to entirely wipe out an effort to reduce emissions. Reinaud (2008) even shows that “the general notion that a cap in a country or region will result in even more emissions globally is contradicted by all quantitative studies.”

As in the case of competitiveness, it remains unclear how significant a risk leakage presents to the overall effectiveness of climate policy. Effects observed so far have been relatively small, with little evidence of major relocations.¹⁶ One possible explanation for this is that environmental policy is but one factor among others taken into account when firms take decisions about location. Another can be that mitigation policies so far simply have not been ambitious enough to incur serious costs for firms, or that compensatory schemes have dampened the effects. Nevertheless, there is theoretical support for leakage, which means that the more ambitious measures, which will be necessary the coming decades, may induce higher levels of carbon leakage if the country coverage is not wide enough. Intuitively, a wide country participation in climate change mitigation would reduce the risks for leakage as there would simply be fewer places able to attract investment or win market shares based on cheap carbon.

The effectiveness of border measures to deal with competitiveness issues and carbon leakage

The potential effectiveness of a border measure ultimately depends on its design.¹⁷ A number of

criteria would need to be fulfilled in order for BCAs to be able to address leakage and competitiveness.

First, to fully address competitiveness concerns, exports would need to be rebated, reflecting that competition does not only take place at home, but also to a high degree in export markets. However, rebating emission-intensive exports could seem questionable from an environmental point of view. Indeed, it could be difficult for governments to explain to voters why they would choose to subsidize exports of heavily polluting goods. This is probably the reason existing proposals on BCAs focus on imports.

Second, product coverage is essential. If only semi-finished goods, such as steel or aluminium ingots, are covered under a given scheme, that could induce gaming strategies from firms seeking to bypass the BCAs by further transforming their goods. However, including processed goods seems extremely complicated given the challenges that would imply in terms of determining the levels of emissions linked to their production.

A third issue with regard to the effectiveness of BCAs would be how to determine the climate policy cost for which the border measure is intended to compensate. To be effective, the border measure would need to minimize the climate policy cost differential for both direct and indirect costs. Not only will that be very hard to calculate, but also such costs will vary over time in emissions trading schemes. They are considerably easier to calculate in the case of a carbon tax.

Given all these preconditions, if rightly designed and if all practical and administrative difficulties can be addressed, there is some theoretical support to the idea of introducing BCAs as a means to reduce the risks for carbon leakage and losses in competitiveness.¹⁸ Economy-wide modelling does, however, cast doubts over their degree of potential

¹⁵ Reinaud (2008).

¹⁶ Stern (2006).

¹⁷ The section about the design of BCAs builds on Reinaud (2009).

¹⁸ Reinaud (2008).

effectiveness. The OECD has performed a review of studies about this, and reaches the conclusion that “while border tax adjustments may be a useful way to manage the domestic distributional effects of climate policy, it is likely to be less useful as a means of minimising the costs of climate policy or reducing leakage from the economy as a whole.”¹⁹ Recent World Bank modelling indicates that border measures would address the competitiveness concerns of producers and contribute to further emissions reductions, but with important losses in exports for developing countries. The estimation is based on across-the-board tariffs, rather than on a few sectors, contrary to what is being discussed in most current proposals.

One reason it is so hard to say with greater certainty whether or not BCAs would be efficient is that there are so many unknown variables. At this stage, we do not know how many or which countries will take on effective emission reduction policies, nor do we know their magnitude. Moreover, we do not know how potential BCAs would be designed or which countries and products would be targeted.

On top of this, there are most probably effects of BCAs that are political and, therefore, do not fit into economic theory or to econometric modelling, but that nevertheless play a crucial role. For example, it is likely that some countries, in particular the United States, see BCAs as a necessity in order to be able to take on reduction commitments. Indeed, if BCAs can help countries taking on climate change regulation, their potential benefit in protecting the climate can be considerably larger than the one arising from the marginal effect of the actual border measure on the limited quantity of internationally traded goods in a few sectors. At the same time, there is an opposite side of that coin: the potential use of BCAs may discourage others from taking on climate change mitigation, as they may feel that they are being pushed unfairly, and it may render more difficult the negotiations about a global climate deal. If BCAs would be the last straw causing this to happen, the damage done to climate change would be

considerable. Moreover, apart from the environmental effects, there is a risk that BCAs will cause bad will and open a Pandora’s box of protectionist measures, which could lead to a veritable trade war. The economic costs of such a situation would likely be substantial.

Would Border Measures be WTO-Compatible?

A great deal of the debate about BCAs focuses on their compatibility with international obligations, particularly WTO law. This chapter gives an overview of that debate. We briefly describe the articles in the General Agreement on Tariffs and Trade (GATT) that are relevant to BCAs and discuss their potential applicability.

Taxes that can be adjusted at the border - GATT Article II / SCM agreement

GATT Article II.2 (a) and the Agreement on Subsidies and Countervailing Measures (SCM Agreement) are relevant in examining at the outset the ability of WTO Members to apply border measures of the kind discussed in this paper. With respect to BTAs (of which BCAs are a *sui generis*) on imports, Article II.2(a) states that notwithstanding a country’s commitments under its Schedule of Concessions in the WTO, nothing shall prevent that country “from imposing at any time on the importation of any product (a) a charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article III in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part.” With respect to BTAs on exports, footnote 1 of the SCM Agreement states that “the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in excess of those which have accrued, shall not be deemed to be a subsidy.” On the other hand, this footnote must also be read in conjunction with Annex I of the same Agreement, which provides an ‘Illustrative List of Export

¹⁹ OECD SG/SD/RT(2009)3.

Subsidies’ - prohibited under the Agreement - in particular, par. (g) which refers to the “exemption, or remission, in respect of the production and distribution of exported products, of indirect taxes in excess of those levied in respect of the production and distribution of like products when sold for domestic consumption.”

It is well established under GATT law that only indirect taxes may be adjusted at the border. Indirect taxes are taxes that are levied on products, whereas direct taxes are levied on producers. In the sense that a carbon tax is imposed in relation to the production - or at least the process or method of production - of a good, there appears to be a reasonably close nexus between the tax and the product; further, given that a carbon tax is imposed at the border and ‘border taxes’ are classified as indirect taxes, it seems logical to classify a carbon tax as an indirect tax.

It remains unclear, however whether GATT Article II and the SCM Agreement apply to taxes on inputs that are not physically incorporated into the final product (such as the energy fossil fuels used in the production of a particular product) and which can be adjusted at the border. With respect to BTAs on imports, the discussion focuses on the question of whether these inputs can be considered “articles from which the imported product has been manufactured or produced in whole or in part” as required by GATT Article II.2 (a). With respect to BTAs on exports, the question is whether the carbon tax for which an exemption is granted is “borne by the like product when destined for domestic consumption” as required by footnote 1 of the SCM Agreement, and by cross-reference to Annex I, is an indirect tax “levied in respect of the production and distribution of like products.” Existing case law does not specifically address the issue of inputs that are fully consumed in the production process. If it will be found that a carbon tax levy on exports falls under footnote 1 of the SCM Agreement, such border tax adjustments will not be deemed a subsidy and thus not contrary to WTO rules in that respect.

The legal analysis below will focus on carbon tax adjustment for imports.

National Treatment Article III.2 and III.4

The principle of national treatment is one of the two most basic and important principles of the GATT and WTO. In simple terms, it means that once an imported product enters the market of the importing country, it must not be treated any differently than similar, domestically produced goods. The national treatment principle as spelled out in Article III.2 GATT states that imported products shall not be subject to internal taxes or charges in excess of those applied to like domestic products. In the case of BTAs, this would mean that if the tax on an imported product is not accompanied by a corresponding tax on a similar or like domestic product, the BTA would violate the principle of national treatment under Article III.2 of the GATT.

GATT Article III.4 further requires that imported products are, with respect to “all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use” treated no less favourably than “like” products of national origin. A carbon regulation in its design and implementation, thus, must not discriminate against imported products vis-à-vis like domestic counterparts.

Only if two products are considered “like” does the national treatment obligation apply. In the case of BTAs, a prejudicial question is therefore whether the manner in which goods - that are otherwise physically similar in appearance and function and classified under the same tariff line in the WTO - have been produced, can make products “unlike.” In trade jargon, this refers to non-product-related process and production methods or NPR-PPMs. In point, are products produced in a climate-friendly manner and products produced in a carbon-intensive manner “like products”?

Since carbon tax adjustments would discriminate between products on the basis of their production method, more specifically on the basis of the amount of greenhouse gases emitted during the production, NPR-PPM issues are critical for the compatibility analysis. NPR-PPM-based measures are controversial as they can be used to serve protectionist interests and may make it more difficult

and expensive for exporters, especially from developing countries to access rich country markets.

The GATT itself does not define the term “like products.” However, the Appellate Body in EU-Asbestos ruled that a determination of “likeness” consists of examining the following factors: the physical characteristics of the products, end-use, consumer tastes and habits and tariff classification.

²⁰ The prevailing view seems to be that physically like products cannot be considered to be “unlike” because of their production method. According to this view, products produced in a climate-friendly manner and products produced in a climate-unfriendly manner are “like products.”

On a separate note, even though the two GATT “Tuna-Dolphin” Panel reports²¹ found that process measures fall entirely outside the scope of Article III, these cases were not adopted by the GATT Contracting Parties and have mitigated persuasive value. More recent case law, such as the Shrimp-Turtle case²², supports the application of GATT Article III even to NPR-PPMs.

In the current discussions on border measures, focus has seemingly shifted away from tariffs toward importers’ purchases of emission allowances in the cap-and-trade scheme of the importing country, which could imply an equivalent burden as paying a domestic tax. However, the way in which an emissions trading scheme is designed plays a role when determining whether the measures qualify as a tax. In WTO practice the definition of “tax” in Article III.2 is a payment to the government that is compulsory and unrequited.²³ In a case where allowances are auctioned, there would be a payment required to be made to the government. However, should that payment be excused such that revenue due the government would not occur, this may be deemed a subsidy under the SCM Agreement. One such situation could be

the distribution of free allowances, such as they appear for instance in the EU ETS.

Article I GATT- the most favoured Nation principle

According to the most favoured nation (MFN) principle, any advantage granted by any Member to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in the territories of all other WTO Members. This requirement may be contravened if a carbon regulation imposes requirements on the importation of industrial products from a WTO Member that does not engage in the post-Kyoto regime, while such a measure is not imposed on the “like product” from another state.

In current discussions of BCAs, it is often understood that such measures would target developed or large emerging economies, while excluding smaller or poorer developing countries. However, excluding some countries depending on their stage of economic development would seemingly be a breach of GATT Article I. However, this stands in contrast to Article 3.1 of the UNFCCC, which obliges measures to comply with the principle of “common but differentiated responsibilities” and capabilities. This principle provides for different treatment of developing countries based on special needs and circumstances, future economic development and historical contributions to causing global warming.

To be made consistent with GATT Article I, one possible approach would be to have WTO Members agree to a decision waiving the application of the MFN principle, borrowing elements for instance from the General Council Decision on the Kimberley Process Certification Scheme²⁴ regarding trade in conflict diamonds. Other observers suggest that another approach could be to design a BCA on the basis of clear, objective and transparent criteria,

²⁰ See for example Appellate Body Report, *Japan - Taxes on Alcoholic Beverages*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted on 4 October 1996 and Appellate Body Report, *European Communities - Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 12 March 2001.

²¹ GATT Panel Report, *United States - Restrictions on Imports of Tuna*, GATT Document DS29/R, 16 June 1994, unadopted and GATT Panel Report, *United States - Restrictions on Imports of Tuna*, GATT Document DS21/R, BISD 40S/155, 3 September 1991, unadopted.

²² Appellate Body Report, *United States - Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 12 October 1998.

²³ OECD, *Note on the Definition of Taxes by the chairman of the Negotiating Group on the Multilateral Agreement on Investment (MAI)* (DAFFE/MAI/EG(96)3, 19 April 1996, at. 1.

²⁴ General Council Decision Waiver Concerning Kimberley Process Certification Scheme for Rough Diamonds, WT/L/158, adopted 15 May 2003.

the compliance with which entitles a WTO Member to be exempted from, wholly or in part, from the imposition of a BCA-related measure. This would be akin to elements of the EU Generalised System of Preferences intended to wean developing countries away from illegal drug production and trafficking, and which were upheld by the WTO Appellate Body in EU-Generalised System of Preferences²⁵

Article XX GATT- departures from GATT obligations

Article XX GATT permits limited and conditional departures from all the obligations contained in the GATT, and thus also the principle of non-discrimination. Therefore, if a BCA is found to violate a substantive GATT obligation, it may, nevertheless, be justified if it falls within one of the general exception provisions of Article XX (a)-(j), and if the application of the measure is not a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade, as specified in the so-called “chapeau” to Article XX.

Two paragraphs of GATT Article XX focus on environmental issues; paragraph (b) provides a provisional exception for measures “necessary to protect human, animal or plant life or health,” and paragraph (g) for measures “relating to the conservation of exhaustible natural resources.” It is more likely that countries seeking to justify BCAs would resort to Article XX (g) since, among others, the qualifier “necessary” in Article XX (b) is generally perceived as more difficult to meet than the requirement of “relating to” in Article XX (g) GATT.

The “relating to” test requires that there must be a “substantial relationship”²⁶ between climate legislation and the conservation of the planet’s atmosphere and climate. It is required that the “means are ... reasonably related to the ends,”²⁷ i.e., it should contribute to attaining its environmental goal. Therefore, the imposing country would have to demonstrate that the import

measures directly motivate foreign producers to lower emissions, or that it indirectly helps achieve the environmental goal by keeping industry in the country and preventing it from moving abroad where its emissions are not restrained.

Moreover, the measure must be taken in conjunction with restrictions on domestic production or consumption. This is an important and not yet extensively elaborated issue in those cases where domestic measures are taken at the production level. An “even-handedness” between domestic and import restrictions is required.²⁸ This requirement would be less restrictive for production requirements than for product requirements.

Finally, even if the conditions of one of the paragraphs of GATT Article XX were met, the measure sought to be justified would also have to fulfil the requirements in the Article XX chapeau, which requires that “Measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.”

There is some reference in existing case law on the applicability of Article XX to climate change. In the US-Gasoline case, both the Panel and the Appellate Body determined that clean air was an exhaustible natural resource within the meaning of GATT Article XX (g).

It should be noted that Article XX GATT cannot be invoked to justify a measure to offset competitive disadvantages for domestic industry as Article XX does not cater for economic arguments. Current discussions, however, emphasize the risk of losing competitiveness if GHG emission reduction commitments are undertaken only by some countries. This is particularly pronounced in the reports on deliberations on the proposed U.S. legislation on the subject. In order to justify a measure under Article XX, the environmental

²⁵ Appellate Body Report, *European Communities - Conditions for the Granting of Tariff Preferences to Developing Countries* WT/DS246/AB/R, 7 April 2004.

²⁶ Appellate Body Report, *United States - Standards for Reformulated and Conventional Gas*, WT/DS2/AB/R, adopted 29 April 1996, p. 19.

²⁷ Appellate Body Report, *United States - Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 12 October 1998, para. 141.

²⁸ See for example Appellate Body Report, *United States - Standards for Reformulated and Conventional Gas*, WT/DS2/AB/R, adopted 29 April 1996 and Appellate Body Report, *United States - Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 12 October 1998.

argument needs to be made. As previously stated, it may, however, be difficult to demonstrate the environmental purpose and impact of the measure.

With respect to the chapeau of Article XX, the Appellate Body has developed certain criteria in previous disputes. As applied to BCAs, these criteria are:

- i. Do the BCAs take account of local conditions in foreign countries or do they essentially require that foreign countries have to adopt their own policies?

Among the issues a panel may examine in this context are:

- Whether or not the country imposing the import measure has considered whether a foreign country already imposes emission cuts or otherwise addresses climate change;
 - Whether or not developing countries should, for historical reasons, carry the same burden as other countries. Under the UNFCCC, for example, protection of the climate system must be pursued "on the basis of equity and in accordance with (the parties) common but differentiated responsibilities and respective capabilities."²⁹ This may oblige the imposition of a graduated import regulation depending on the stage of economic development of the foreign country in question. It is not inconceivable that the signing of a post-Kyoto Protocol will be treated by a WTO panel as providing an objective criterion for discriminatory action against Kyoto-non-signatory nations.
- ii. Before imposing unilateral BCAs, did the imposing country engage in "serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements"³⁰ to address climate change?

According to the Shrimp-Turtle case, this does not require the actual conclusion of agreements, but at the very least good faith efforts by the imposing country to bring the foreign countries into the fold

of an international effort before making a move to the second- or third-best option of unilateral border adjustments.³¹ Such negotiations must also occur on a non-discriminatory basis with all countries affected.

- iii. Does the implementation and administration of the BCAs respect "basic fairness and due process"?

An unclear legal situation

The foregoing sections suggest that the legal compatibility of the possible border carbon measures with existing disciplines in the world trading system is uncertain. What seems to be certain is that if a country decides to impose unilateral BCAs, it is likely to be taken to dispute settlement in the WTO. If a case-by-case approach were to evolve, it would probably take a long time before clear and predictable guidelines become apparent. This has spurred experts to look for ways of clarifying the legal situation surrounding BCAs; for instance, Hufbauer and Kim³² have proposed:

- o the introduction of a 'Trade and Climate Code' either as a plurilateral agreement under the WTO Agreements or outside the WTO, with the purpose of agreeing in advance on a framework for trade-related climate measures in order to head off disputes.
- o an amendment or a waiver of GATT articles and other parts of the WTO legal texts to accommodate environmental controls.
- o the adoption of a time-limited peace clause (or rather, a moratorium), which would suspend the application of BCAs in imports and other extra-territorial controls, for a defined period.

Mindful of the difficulty in getting consensus on any agreement at the WTO and the prospects of other countries initiating their own border carbon measures as some form of 'levelling' strategy or policy, a number of senior trade officials and trade

²⁹ Article 3.1 of the UNFCCC.

³⁰ Appellate Body Report, *United States - Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, adopted 12 October 1998, para. 166.

³¹ *Ibid.*

³² Hufbauer & Kim (2009).

experts at the ICTSD Dialogue on Trade and Climate Change for the Asia-Pacific region in November 2009 broached the idea that, using the more progressive and non-binding nature the Asia-Pacific Economic Cooperation framework provides, countries from the region could consider developing disciplines in the use of BCAs that could subsequently be adapted to a multilateral setting. This will take further advantage of, for instance, APEC's well-regarded position as a proving ground or laboratory for forward-thinking initiatives (such as on trade facilitation) and the involvement of critical players in the debate like China and the United States.

These options all have advantages as well as drawbacks. However, it should be kept in mind that moving forward on any of these options would make it easier to, at some stage, introduce measures of a dubious utility with respect to climate change, as concluded in chapter 3. They would in other words not do anything to resolve the issues of efficacy arising from BCAs.

Development Aspects

There is little literature looking at the trade of developing countries following the possible introduction of border measures. Discussions tend to focus on China and India, as these appear as the main targets in the debate about competitiveness and leakage. However, it is likely that more countries would be the targets of future BCAs. Also, even countries that are not being directly targeted may be affected by the introduction of BCAs through the induced change in prices of carbon-intensive goods. Below we attempt to consider these issues. We also briefly discuss a few modelling results concerning the consequences for the trade of developing countries.

Modelling points to important losses for developing countries

Recent research from the World Bank,³³ based on econometric modelling in a multi-country, multi-sector general equilibrium model, indicates that across-the-board measures based on the carbon

content of imports would be the equivalent of imposing a tariff of over 20 percent on China and India, resulting in lost exports of up to 20 percent.³⁴ Should the trade action be based on the carbon content in the domestic production, applied symmetrically on exports and imports, the effects for developing countries would be less harmful.

In this context, it should be recalled that the focus today is on a number of energy-intensive sectors, which means that the consequences for developing countries would be less important. However, if border measures become an accepted tool nothing would prevent countries from imposing BCAs on a broader set of products than those currently under discussion.

Changing world market prices can affect developing countries

Climate change mitigation will imply higher costs for carbon emissions. That is likely to lead to higher world market prices of goods that are energy- and emissions intensive. If some countries impose BCAs, that would mean further increasing the prices of such goods in the domestic markets of these countries. However, this would at the same time lead to a reduced demand resulting in excess supply and lower prices at the world market. The effect on world market prices will be more important if rebates on exports are included in BCA-schemes. The magnitude of these effects would depend on the level of the border measure, on how many countries impose them and against which countries and which industries.

Is it realistic to expect that BCAs would have noticeable consequences on world market prices of energy- and emissions-intensive goods? Theoretically yes, if imposed by large economies, such as the European Union and the United States. However, BCAs would most likely not be a general tariff, but rather directed at a few countries. A preliminary analysis of the Waxman-Markey bill shows that as many as 25 developing and transition economies

³³ Mattoo et al (2009).

³⁴ Results from modeling should always be used with care. One reason for this is that the modeling always implies a number of basic assumptions, which are necessarily very simplified.

could be eligible for BCAs.³⁵ Intuitively, the more countries impose BCAs and the more countries are targeted and the larger the proportion of world trade that is touched, the more considerable price effects can be expected.

What would decreasing world market prices of the targeted goods as a consequence of BCAs mean? For exporting countries, those facing the tariffs and others, BCAs would mean reduced income for their exports of the concerned goods. This would also mean lower costs for domestic processing industries using the concerned goods as inputs. Lower world market prices will also affect non-targeted developing countries. However, since their producers do not face the additional cost of the BCA when exporting to imposing countries, there may be a margin for increased profits instead when competing with firms subject to compliance costs.³⁶

How individual developing countries would be affected by BCAs and consequent changes in world market prices. The extent of the effects also depends among other things on whether they are net-importers or net-exporters of the concerned merchandise. Intuitively, net importers will benefit from lower world market prices, while the opposite is valid for net-exporters. Houser et al (2008) claims that most of the demand from carbon-intensive products comes from developing countries, China in particular. Recent statistics from the WTO confirm that China is an important import market for both iron and steel and chemicals.³⁷ It is also well known that China has recently become a leading importer of many other raw materials, such as copper, that are essential in the early development phases of an economy.

Some suggest that the introduction of BCAs could induce a gaming strategy among firms seeking to bypass the BCAs by further transforming their goods. From a development perspective, that could be quite interesting; production of low-processed goods is often associated with vulnerability to shocks and to price fluctuations, and has few linkages to the rest of the economy. Upgrading and diversifying is therefore

essential for achieving economic development. In fact, historically tariff structures have rather been designed to protect the processing industries of importing developed countries through so-called tariff escalation, something that has generally been considered to hinder developing countries from adding value to their raw materials. However, there are many different grounds for investment decisions. A small tariff preference, with very little certainty of how long it is going to last, is likely to weigh lightly against other factors, such as infrastructure, access to factors of production, corporate taxes and the like.

Different consequences for different countries

As mentioned above, consequences vary for net-exporters and net-importers. It can also be expected that countries with a natural endowment of clean energy, such as hydropower, will be less affected by BCAs than countries with a high-energy intensity or with a fossil fuels' dominated energy mix. China is one country that is likely to be relatively more affected, since it has a high energy-intensity and a coal-dominated energy mix.

The economic structure of a country also plays a role when determining how it would be affected by BCAs. Countries relying to a high degree on energy-intensive manufacturing are likely to be particularly vulnerable to unilateral trade measures. At the same time, countries with a high degree of agricultural production and exports are likely to be more concerned by possible footprint-based measures, such as "food miles," climate labelling, certification and others.

Can border measures encourage developing country involvement in climate change mitigation?

This question has two dimensions: one economic and one political. The economic dimension centres on whether countries likely to impose BCAs are important markets for exports of the concerned goods from developing countries. Houser et al

³⁵ Preliminary analysis done by the ICTSD, listing the countries that account for more than 0.5 per cent of global carbon emissions and more than five percent of US imports in a number of trade-exposed energy intensive sectors at a two digit HS-level. Data used come from the US Department of Commerce and the US International Trade Commission.

³⁶ In this discussion, we assume that developing countries do not make any emissions reductions efforts. This is of course highly simplified.

³⁷ WTO (2009).

(2008) have looked at Chinese exports to the United States, and find that less than 1 percent of Chinese steel production, 3 percent of its aluminium and less than 1 percent of both chemicals and cement were sold to the United States. In fact, much of the demand for carbon-intensive products comes from developing countries, China in particular. Therefore, policies in these countries could be of greater importance when it comes to influencing exporting countries' decisions on production processes. BCAs would according to this line of reasoning have limited effect in creating leverage for developing countries to take action.

The second dimension is political, that is how developing countries will likely react to industrial countries' decisions to introduce border adjustment, regardless of the costs this would, or would not, induce for developing countries. So far, reactions from developing countries have been negative. A number of factors explain why developing countries are reluctant to take on reductions commitments, and why they are consequently negative to being pushed³⁸:

- the industrial world bears the historical responsibility for accumulated emissions.
- developing countries, through trade, are in part emitting GHG to meet the consumption needs of rich countries.
- low economic development and more acute poverty define policy imperatives whilst limiting developing countries' institutional and technological capabilities to tackle environmental concerns, including climate change.

Moreover, a significant number of developing countries already do take action to reduce their emissions, but they do so without having bound their commitments internationally. In the light of this, and given the medium- and longer-term nature of policies on climate change, many developing countries tend to see talk of BCAs as a stick rather than a carrot. Zhang describes the discussion of border measures as "counterproductive" in reaching a global agreement on climate change.³⁹

Conclusion

Climate change is an immediate and acute danger to humanity. Action needs to be taken now and within the next few years if we are to avoid life-threatening levels of global warming. Emission reductions need to be global. Although the big OECD-economies that for decades have been disproportionately emitting relative to others bear the responsibility for the lion's share of the situation, they alone cannot solve the problem. Other countries need to participate in a commensurate manner. To this end, they must be given assistance to transform their economies and to avoid relying on polluting activities for their development, without compromising growth.

Today, negotiations about how to tackle climate change through global cooperative action take place within the context of the UNFCCC. Although the optimal solution, a global deal with the necessary global emission cuts, is well known, it is by no means certain that world leaders will manage to accomplish this. A fear that differentiated policies and commitment among countries would result in impacts on the current terms of competitiveness between industries based on their location, and that ensuing leakage of emissions may occur, has led to proposals aimed at levelling the playing field. As a possible tool to handle this, suggestions about equalizing the price of carbon at the border through border tax adjustment or by including imports in domestic cap-and-trade systems are being set forth. Such measures appeal to politicians as they allegedly protect both the environment and domestic jobs. At the same time, they are hard to accept by countries whose trade is likely to be affected.

Dealing with carbon and GHG emissions, economy-wide, is a field in which empirical evidence cannot help; it is really the first time in history that it will be done. Therefore, tinkering with it should be done not only with utmost responsibility, but also with a deliberate intent to avoid collateral damage. When it comes to BCAs as a tool to deal with climate change, we show in this paper that there are reasons to be sceptical and cautious. The conditions necessary for BCAs to be effective in addressing carbon leakage and competitiveness concerns are generally not fulfilled in most existing proposals. In other words,

³⁸ *National Board of Trade (2008).*

³⁹ *Zhang (2009).*

border measures would probably not do the job they are intended to do. From a policy implementation view, even if conditions would be fulfilled, the administrative costs involved when it comes to determining and demonstrating the carbon contents in the traded products would be so considerable that potential economic benefits would risk being marginalized. Moreover, there seem to be important risks associated with BCAs. In particular there is a risk that BCAs would create bad will both in the climate change negotiations and in the multilateral trading system, with potentially negative consequences both for climate change and for the world economy.

Apart from economic considerations, there is also the question of the compatibility of BCAs with WTO rules. The legal option that seems to have the most support as grounds for border carbon measures

would be to show that they are necessary deviations from the general principles of the WTO in order to protect exhaustible natural resources. However, as the discussions leading up to existing proposals on BCAs focus highly on the protection of domestic jobs and economies, it may be difficult to persuade a WTO panel that the environment is the real reason for restricting trade.

The effect of BCAs on developing countries is something that would need to be studied in greater detail by countries imposing such measures. Indeed, the world is committed through the Agenda 21, the Millennium Development Goals as well as through the UNFCCC and the WTO to strive for sustainable development. Policies that protect the environment at the expense of welfare and opportunities for the poor and poor countries cannot be sustainable.

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