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World Trade Organization

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THE INTERFACE BETWEEN THE TRADE AND CLIMATE CHANGE REGIMES:

SCOPING THE ISSUES

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THE INTERFACE BETWEEN THE TRADE AND CLIMATE CHANGE REGIMES: SCOPING THE ISSUES

by

Patrick Low*, Gabrielle Marceau* and Julia Reinaud**

ABSTRACT

As governments increasingly adopt policies to reduce greenhouse gas emissions, concern has grown on two fronts. First, carbon leakage can occur when mitigation policies are not the same across countries and producers seek to locate in jurisdictions where production costs are least affected by emission constraints. The risk of carbon leakage raises questions about the efficacy of climate change policies in a global sense. Secondly, it is precisely the cost-related consequences of differential mitigation policies that feed industry concerns about competitiveness. We thus have a link between environmental and competitiveness perspectives that fuses climate change and trade regimes in potentially problematic ways as governments contemplate trade actions to manage the environmental and/or competitiveness consequences of differential climate change policies. On the trade side of this relationship, we have the reality that the GATT/WTO rules were not originally drafted to accommodate climate change policies and concerns. The purpose of this paper is to analyze the relevance of certain WTO rules to the interface between climate change and trade, focusing in particular on border measures, technical regulations on trade, standards and labelling, and subsidies and countervailing duties.

It concludes that in the absence of clear international understandings on how to manage the climate change and trade interface, we run the risk of a clash that compromises the effectiveness of climate change policies as well as the potential gains from specialization through trade.

Keywords: Border adjustments, carbon leakage, climate change, competitiveness, GATT/WTO, standards, trade

JEL Classifications: F13, F18, K33, Q54

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I. INTRODUCTION

As national and international policies are developed to mitigate climate change, concern is growing about the compatibility of climate change regimes with international trade rules. This potential source of tension has two dimensions. First, carbon leakage may arise where countries implement asymmetric climate policies. When an industry in one country assumes additional costs in order to reduce greenhouse gas (GHG) emissions and those same industries in other countries incur lesser (or zero) costs, this may affect geographical patterns of investment, production and trade. If climate-related changes in relative costs result in a shift of economic activity to less carbon-constrained jurisdictions, the cost-augmenting environmental efforts of the more constrained country will be invalidated or at least diminished. Emissions would not be reduced, but simply shifted to other national locations.

The second dimension is linked to the first. Industries in more carbon-constrained countries will feel aggrieved about additional competitive pressure from the same industries in less constrained countries. This will induce them to demand policy responses from their governments to redress this loss of competitiveness - in other words, to restore a "level playing field". Such policy responses, should they be forthcoming, will inevitably affect international trade - be they tax adjustments at the border, regulation, or subsidy.

Can the environmental and competitiveness aspects of this situation be de-linked? There could be one way, but it would require a far greater degree of international cooperation than national trade-related responses. If all countries embraced carbon constraint policies at the national level, carbon leakage from one jurisdiction to another could be neutralized in the aggregate through inter-sectoral adjustments to GHG emission polices within the country where leakage led to increased emissions. If, for example, some steel manufacturers migrated from a more carbon-constrained jurisdiction to a less constrained one, the latter jurisdiction could adjust its GHG emission policies in, say, the forestry sector in order to maintain the same national level of climate change mitigation effort.

Two factors would make this approach challenging. The first is the requirement that all major economies, including some emerging economies not covered by Kyoto Protocol emission reduction commitments, would need to subscribe internationally to GHG emission caps at the national level. Even though such commitments would undoubtedly vary in line with the recognized UNFCCC principle of "common but differentiated responsibilities", agreement on the distribution of the burden may prove elusive. The second is that changes in international competitiveness at the industry level arising from differential carbon constraints would need to be seen in a similar light to changes in comparative advantage rather than as a reflection of unfairness in a sectoral context arising from the apportionment of the burden of addressing climate change. The possibility that governments will indeed apply policies with a significant trade impact to address carbon leakage and competitiveness issues is the motivation of this paper, which analyzes the relevance of certain WTO rules to the interface between climate change policy and trade policy.[1] Attention focuses on border measures, technical regulations on trade, standards and labelling, and subsidies and countervailing duties. Other areas of WTO rules important in the climate change and trade policy discussion are either treated more briefly or not addressed at all. These include preferential trade agreements and rules of origin, government procurement, customs valuation, anti-dumping, trade-related investment measures (TRIMS), trade in services (GATS), and trade-related intellectual property rights (TRIPS).

Before entering into the detailed policy areas involved, we wish to emphasize that any analysis of the interface between trade policy and climate change policy should take into account the

[1] The trade and WTO implications of other approaches to managing climate change policy internationally, such as an agreement on carbon taxes, are not addressed in this paper.

fact that the existing GATT and WTO rules were not drafted to address climate change problems and policies. This sometimes leads to legal awkwardness. Let us take two examples.

Firstly, the basic GATT non-discrimination principle is applicable to the treatment of imported versus domestic products and prohibits distinctions that are based on process and production methods which frequently are not product based. However, climate change related policies targeting GHG reductions often do not deal with products *per se* and generally address process and production methods, while focusing on broader variables such as sectors, industries, firms or installations. The result is that these more broadly based climate change policies may discriminate among related products on the basis of non-product criteria. This will clash with the non-discrimination requirements of the GATT's national treatment provisions (Article III), which are applicable only to products and focus on product-related criteria when distinguishing among products.

A second example concerns border adjustments on exports. While the GATT traditionally allows a government to rebate or remit domestic taxes imposed on exported products (indirect taxes), it prohibits such treatment of domestic taxes on firms or industries (direct taxes) producing for export. Since climate change subsidies and taxes tend to target firms, sectors or nations rather than products per se, such measures are likely to fall foul of WTO disciplines. Moreover, divergence between WTO rules and climate change action raises additional challenges when attempting to define comparable action between countries and comparable effects of GHG-related measures. Underlying all this is the question whether Members manage to negotiate or implicitly accept varying approaches towards actions at the interface of trade and climate change policies, or whether the WTO dispute settlement system will be called upon to assess the WTO compatibility of specific GHG-related measures affecting trade.

II. GATT /WTO RULES APPLICABLE TO GHG-RELATED POLICIES AND MEASURES

In what follows we first examine so-called "border measures"[2] and the related GATT rules. We distinguish between price-based and non-price-based measures and also analyze the different legal treatment accorded to border measures and internal measures applied at the border. The rest of Section A contains an analysis of the public policy exceptions provided for in GATT Article XX and how they might apply to trade-related policies aimed at addressing climate change.

A. GATT/WTO MARKET ACCESS RULES – AND BORDER MEASURES

In the climate change context, two types of (import or export) border adjustments may be deployed -- price-based and non-price based restrictions or regulations. In the latter case, market access is restricted to products complying with specific standards (e.g. the level of GHG emissions resulting from the production of an exported good), or compliance with certain other types of requirements (such as notification or reporting). In the context of climate change measures, price-based border adjustments can take two main forms – (i) border tax adjustments on imports and (ii) mandatory carbon offset purchases (of GHG emission permits or allowances by importers). Border adjustments can also be made on exports, including in the form of export tax rebates.

WTO rules do not restrict the set of taxes and regulations that a nation may impose domestically on products. But they do require non-discrimination in the application of such policies to both domestic and imported products – what is known as "national treatment", and among imported products - what is known as the "most-favoured nation principle". For example, nothing in the WTO

[2] In the context of the climate change and trade debate many have interchangeably used border adjustment measures or border tax adjustments and in some circumstances border rebate adjustments. Each of those expressions refers to specific and distinct legal situations explained in the text hereafter.

prevents a nation from imposing a sales tax on imports from a country as long as it is applied to "similar" or "like" domestic products and imported products from all other nations.

These WTO rules ensure that border measures are not disguised protection. Specifically, the rules allow a nation to impose taxes and regulations on imported goods, that are "no less favourable" than those imposed on similar domestic products. While this sounds simple in theory, in practice it can be quite difficult. Comparability is not always easy to identify when climate change measures such as taxes, permits and regulations are at stake.

What follows below is an attempt to identify the appropriate legal steps to be followed when assessing whether a specific GHG measure is consistent with GATT market access rules and its related border adjustment provisions. We divide the discussion between issues relating to price-based and non-price based measures. For each type of GHG measure, we will take into consideration its nature as an internal or border measure.

1. Price-based measures: is a GHG measure a border measure or an internal measure applied at the border?

GATT provisions regulate two types of governmental measures in the present context: border measures and internal (domestic) measures. Article II governs the imposition of import tariffs at the border, which thus apply only to imported products. Article III allows the imposition of taxes and regulations on both imported and domestic products. Although Article II of GATT provides that generally only tariffs should be imposed at the border of an importing Member, it also contains a list of other price-based measures that can be applied in addition to and independently from tariffs. These price-based measures include, notably, the application of domestic taxes to imports.[3] This means that domestic taxes and regulations, otherwise governed by Article III, can be applied, or adjusted, at the border before the goods enter the market.

As WTO rules on border measures differ from those applicable to domestic measures, the first legal step when assessing WTO compatibility of a GHG measure is to determine whether it is a "border measure" or an "internal measure that can be applied at the border".

In China – Measures Affecting Imports of Automobile Parts, the Panel and the Appellate Body determined criteria to distinguish a border measure, in the form of a tariff governed by GATT Article II and an internal tax enforced upon imports at the border,[4] and thus governed by Article III on national treatment. The Panel emphasized that if the obligation to pay a charge accrues due to an internal event, such as the distribution, sale, use or transportation of the imported product then it is an internal charge governed by Article III. If the charge is imposed "on importation" and independently

[3] GATT Article II: 2 also includes two other types of border (price) adjustment measures: i) anti-dumping and countervailing duties (Article VI); and ii) charges for services rendered (Article VIII). The provision on countervailing duties could become relevant in the context of climate change if collected against allegedly subsidized exports that result in injury to domestic industry. We discuss this situation in Section III of this paper.

[4] See Panel Report, *China-Measures Affecting Automobile Parts ("China-Autoparts")*, WT/DS339/R, WT/DS340/R, WT/DS342/R, adopted 18 July 2008, where the Panel noted, in contrast to ordinary customs duties, the obligation to pay internal charges does not accrue because of the importation of the product at the very moment it enters the territory of another Member, but because of internal factors (e.g., because the product was re-sold internally or because the product was used internally), which occurs once the product has been *imported* into the territory of another Member. The status of the *imported* good, which does not necessarily correspond to its status at the moment of *importation*, seems to be the relevant basis upon which to assess this internal charge. The distinction between ordinary customs duties and internal charges, which is of "fundamental importance", would be blurred if the obligation to pay an ordinary customs duty could accrue based on the status of the product *after* importation, rather than on its status at the moment of *importation* (i.e., "on ... importation").

of its distribution in the domestic market, then it is a border measure subject to the requirements of Article II. This was reinforced by the Appellate Body:

> "This leads us, like the Panel, to the view that a key indicator of whether a charge constitutes an 'internal charge' within the meaning of Article III:2 of the GATT 1994 is whether the obligation to pay such charge accrues because of an *internal* factor (e.g., because the product was *re-sold* internally or because the product was *used* internally), in the sense that such 'internal factor' occurs *after the importation* of the product of one Member into the territory of another Member."[5]

Note that the non-discrimination obligation of the most-favoured nation principle of Article I is applicable to both price-based border measures under GATT Article II, and to price-based domestic measures under GATT Article III.

(a) Is a price-based GHG measure a border measure per se?

(i) GATT Article II and Article I are relevant if the price-based GHG measure is a border measure on imports. .

Article II of the GATT allows "tariffs" to be collected at a level no higher than the agreed binding. If a GHG-related measure can be collected in the form of an increased tariff below the level of a binding, such GHG measures could be consistent with Article II of the GATT.

However, to the extent that the level of such a GHG-related additional tariff varies depending on the origin of the imported products (which is likely to be the case if such charges aim to offset differences in non-identical GHG regimes in each country of origin) such tariffs may be challenged as contrary to GATT Article I (on the most-favored nation principle), which prohibits discrimination among imported like products. We shall discuss the issue of like products below, but for now many would argue that it will be difficult to maintain that two physically similar and competing products are nonetheless "unlike" based on their respective level of GHG emissions, since this is not a product related criterion, but rather relates to a process and production method).

(ii) GATT Article I is relevant if the price-based GHG measure is a border measure on exports.

The GATT does not contain any discipline on export taxes or any price-based measures other than the most-favoured nation principle. It is not clear to what extent national climate change programmes will lead to action on exports. However, some authors have suggested that countries whose GHG emissions are related to products destined for export may respond to threats of border tax adjustments abroad with the adoption of their own export taxes, thus internalizing the amount of GHG tax their exports may otherwise pay in the importing country.

(b) Is a price-based GHG measure considered an internal measure?

(i) National treatment obligations and non-product criteria (including PPMs) in GATT: Article I, Article II and Article III are relevant if an internal measure is applied on imports at the border.

If a GHG-related measure is a domestic or internal measure, the rules of Article III on national treatment will apply. The main discipline of Article III on national treatment is that no imported product should be treated less favourably than a like domestic product. Note again that the

[5] Appellate Body Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products ("China - Audiovisual Services")* WT/DS363/AB/R, adopted 12 December 2009, para. 163.

focus of Article III is on products. Before discussing the details of such an obligation as it applies to imported products, we briefly examine how environmental measures, and in particular price-based GHG-related measures, can be applied to goods at three different levels.

- The most straightforward case is to apply the measure to the good itself, say a tax or subsidy applied to light bulbs, refrigerators or cars, according to their energy efficiency levels.

A significant difficulty here is that not all existing policies relating to climate change focus on products per se. Many GHG-related policies target items broader than individual products – such as installations, firms, industry, sectors, or nations -- and attempt to make distinctions relevant to trade on this basis rather than in terms of specific products. .

- The next most straightforward case is a price-based measure that is applied to an intermediate input used in the production of the good.

Under its Superfund programme, for example, the United States taxed certain domestically produced chemicals that were used in the production process of other chemicals. It is clear that in some sense the derived chemicals are also taxed, and therefore a border tax adjustment on imported derived chemicals might be warranted. As further discussed below, some authors have argued that GHGs emitted during the production of goods could be viewed as a necessary part of the production of the taxed product. The problem is that the carbon emissions are not literally an "input" into the production but rather an output.

Less straightforward applications concerning taxes or subsidies on the production processes used in making the good or concerned with carbon emissions that occur during production of the good.

A government may wish, for example, to discourage the use of a particularly polluting production process. It may therefore tax the good when it is produced with one process but not when it is produced with another. GHG and other environmental taxes used in many countries result in competitive gains for renewable energy projects compared with fossil fuel projects. Countries such as Denmark, Finland, the Netherlands, Norway, Sweden, Switzerland and the UK have implemented taxes to reflect environmental costs based on the GHG content of energy sources. Subsidies, implemented in many countries, may also be used for this purpose. In such cases, the domestic industry may consider that such taxes put them at a disadvantage in relation to foreign producers who do not face similar production process taxes. A government may therefore be tempted to impose a border tax adjustment on imported goods.

As we shall see, WTO law traditionally considers a priori WTO-inconsistent taxes (and regulations) applicable to "production processes and production methods" (including carbon emissions) that are not "physical" inputs into a product. Two distinct sets of problems repeatedly arise when considering the WTO compatibility of border taxes or regulations on imported products. First, there is the definition of similar products (the specific WTO term for "similar products" is "like products"). Only if the imported and domestic products are like, does WTO prohibit protectionist or unjustifiable protection. Second, there is the definition of "no less favourable" treatment, which considers the situation where a domestic measure treats imported like products less favourably. As discussed in more detail later, the issue of less favourable treatment (or the comparability of GHG measures and their effects on production costs) is especially complex when dealing with domestic regulations aimed a mitigating climate change.

Before delving more deeply into WTO law, we give a small example of how difficulties can arise in determining likeness. Suppose a nation taxes energy-inefficient refrigerators as part of its climate policy. Under WTO rules, the nation is allowed to impose the same tax at the border on

imported energy-inefficient refrigerators because the tax relates to a physical characteristic of the product, i.e. energy-efficient versus energy-non-efficient refrigerators. What is prohibited by Article III is the imposition of a border tax that has the effect of discriminating against similar imported refrigerators. This could arise for example, if the importing nation used an unusual definition of product and considered that imported energy-efficient refrigerators were not like domestic energy-efficient refrigerators. Alternatively, a national tax scheme might always classify imported refrigerators under a higher tax category. Plainly the issue is whether imported and domestic refrigerators are "like" products -- and thus must be charged the same tax -- or are not "like" products, thus can be taxed differently. The definition of "likeness" is likely to be controversial in the climate change context when applied to questions such as whether a tonne of steel made with clean energy is "like" a tonne of steel made with dirty energy.

Likeness in Article III

A determination of likeness between two products (imported and domestic) depends on whether they "compete"[6] in the market. In the context of climate change, the debate is based on one fundamental issue: whether two products can be differentiated and considered unlike based on criteria relating to GHG emissions. For instance, would it be permissible to differentiate (and therefore treat differently) products based on: i) the level of GHGs emitted in production; ii) the level of GHGs emitted within the sector producing such a product; iii) the level of GHGs emitted nationally by the exporting country; or iv) the GHG-related policies or actions of an exporting or importing country?

Box 1: Likeness

The Appellate Body (AB) ruled in *Japan – Alcohol* that likeness is established by comparing products on the basis of i) product characteristics, ii) end uses, iii) consumer preferences and iv) tariff classification. The aspect of consumer preferences involves a comparison between products based on the competitive relationship between them in the marketplace. Any determination of likeness will be made on a case-by-case basis and will require an overall assessment based on these criteria as well as relevant facts.

The scope of the concept of likeness must be determined by the particular provision in which the term 'like' is encountered as well as by the context and the circumstances. The 'likeness' of Article III:4 and Article I GATT is considered to be broader than Article III:2, since the latter also refers to *directly competitive or substitutable products (DCS)*. Likeness in Article III:2 refers to perfectly substitutable products, while DCS products are imperfectly substitutable, but they are in a competitive relationship. In the analysis of DCS, emphasis is placed on the market place, or in other words, the consumer preferences characteristic. However, DCS and the competitive relationship between products is not to be analyzed exclusively by reference to current consumer preferences. According to the AB in *Japan – Alcoholic Beverages*, the word substitutable indicates that the requisite relationship may exist between products that are not, at a given moment, considered by consumers to be substitutes, but which are, nonetheless, capable of being substituted for one another. Likeness in Article I and III:4 is broader than likeness under Article III:2, but not broader than DCS.

In *EC – Asbestos* the AB clarified that the determination of likeness is essentially a determination of the competitive relationship between imported and domestic products. If they compete they are presumed to be like, if they do not, then they must be unlike. Products may be treated differently if they are not like. They may also be treated differently if they are like, as long as the resulting treatment of the imported product is no less favorable in terms of its opportunity to compete in a market.

[6] Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products ("EC-Asbestos")*, WT/DS135/AB/R, adopted 12 March 2001, para. 98.

A key determinant of likeness rests on the distinction between product characteristics and the manner in which they are produced (production and process methods, or PPMs). As discussed in Box 2, PPMs may be product-related or non-product-related.[7]

Box 2: PPMs

A PPM is a process and production method, which refers to the way in which a product is made. It covers any activity that is undertaken in production, such as activities related to the production of a good, activities in bringing a good to the market and the extraction of natural resources for incorporation into goods.

A PPM can come in different forms. The purpose of including PPMs in the context of climate change policies is to incorporate the (social/environmental) cost of production in the price of products so as to give an incentive to both producers and consumers to limit the use of carbon intensive or environmentally unfriendly products.

A distinction can be made between (i) *product related PPMs* which by definition affect the physical characteristics of the final product and (ii) *non-product related PPMs* (npr-PPMs) which are not physically incorporated in the product and thus do not enter into the physical description of the product. The latter would include npr-PPMs designed for a social purpose, such as the rights of workers. The WTO does not question the right of Members to discriminate based on product-related PPMs. However, the status of npr-PPMs is more controversial. Many countries have domestic environmental legislation based on npr-PPMs, for example how to treat waste or how much pollution is permissible. Traditional GATT case law did not seem to accept the possibility of applying such measures internationally and discriminating at the border between otherwise like goods based on a npr-PPM, as illustrated by the un-adopted *US-Tuna* panel report. It led to the presumption that products which differ only on the basis of their npr-PPMs are like products and therefore should be treated no less favorably than their like products comparators, regardless of their respective environmental effects.

Notwithstanding the unadopted *US-Tuna* ruling, recent case law seems to take a different direction. The *EC – Asbestos* case suggests that if npr-PPMs affect the competitive relationship between two products, the npr-PPM will become relevant in the likeness determination. They could be considered in the analysis of consumer preferences or they might be reflected in market studies. But most often market determination will lead to the conclusion that products embodying different npr-PPMs are competitive and thus like products. Moreover, Article XX has been interpreted as allowing governments to justify discrimination on the basis of PPM considerations so long as they respect the prescriptions of Article XX.

Thus, greenhouse gases emitted in the production process -- whether directly by the producer or indirectly by a producer of an input (such as electricity generation) – would, as a non-product-related PPM, not be considered a determining factor of likeness where an imported and domestic product compete in the relevant market. Therefore, any measure applied to an imported product on the

[7] On the issue of PPMs and the GATT/WTO generally, see Jochem Wiers, 'WTO Rules and Environmental Production and Processing Methods (PPMs), *ERA Forum*, No. 4, (2001), p. 101-111; Sanford Gaines, 'Processes and Production Methods: How to Produce Sound Policy for Environmental PPM-Based Trade Measures', *Columbia Journal of Environmental Law*, Vol. 27, No. 2, (2002), p. 396 and further; Steve Charnovitz, 'The Supervision of Health and Biosafety Regulation by World Trade Rules', *Tulane Environmental Law Journal*, Vol. 13 (1999-2000), p. 271-302; Steve Charnovitz, 'The Law of Environmental "PPMs" in the WTO: Debunking the Myth of Illegality', *Yale Journal of International Law*, Vol. 27, No. 59, (2002), p. 59-110.

basis of differences in non-product-related PPMs would be deemed to treat differently otherwise like imported and domestic products, and could thus be deemed in violation of GATT Article III. The issue of how WTO Members are allowed to deal with non-product related PPMs is therefore very important and has been debated for decades.

Some authors have nevertheless argued in the context of price-based GHG measures, the level of GHG emissions attributable to a product should be considered "part of" the imported product. The suggestion is that emissions are covered by the language of Article II.2(a) which authorises "charges on imports equivalent to internal taxes imposed *in respect of an article from which the imported product has been manufactured or produced in whole or in part*." Others have also suggested that the broad language of Article III.2, which states that imports "shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products", also supports the idea that internal climate change measures based on criteria related to non-incorporated PPMs (level of GHGs emitted) could be imposed at the border against imported like products consistently with the national treatment provisions on like products.[8] On the other hand, some have argued that the French version of Article II:2(a) on border tax adjustments provides that only taxes on items "incorporated" in the imported product can be collected at the border. This would appear to exclude any tax on GHGs from a border adjustment.[9]

It is important to note that Article II and Article III:2 provisions mentioned in this context only refer to taxes and charges, i.e. to price-based measures and not to regulations. As climate change mitigation policies often rely on non-price regulations (standards) or on emission permits, such as under the EU's Emissions Trading Scheme (ETS), it is unclear what the practical scope of this suggested interpretation of like products in the context of GHG price-based measures would be for non-price based measures.

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[8] See Joost Pauwelyn, 'U.S. Federal Climate Change Policy and Competitiveness Concerns: The Limits and Options of International Trade Law', Nicholas Institute for Environmental Policy Solutions, Duke University, (April 2007), NI WP 07-02, Working Paper at p.19-20. Available at: http://nicholas.duke.edu/institute/internationaltradelaw.pdf (last accessed July 2010); See also the excellent discussion on this matter in 'Trade and Climate Change: WTO-UNEP Report, (2009) at p. 98 and following., available at: http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf (last accessed July 2010).

[9] Note that the GATT *US-Superfund* case seems to provide support for treating a tax on energy as eligible for border adjustment. The Panel in that case allowed the United States to impose a tax, domestically applied to certain chemicals, on imports that had used the same chemicals in the production of the imported goods. However, the panel did not specify whether these chemicals had to be physically present in the imported product. See GATT Panel Report, *United States – Taxes on Petroleum and Certain Imported Substances ("US-Superfund")*, L/6175 - 34S/136, adopted 17 June 1987, p. 17-19. A tax on energy, however, is not necessarily the same as a tax on GHGs. Even if a precedent may exist for taxing inputs that are not physically incorporated, GHG emissions are not an input but an output. Moreover, an interpretation of the *Superfund* panel report that would allow a tax on GHGs to be adjusted at the border would seem to clash with the conclusions of the 1975 Working Party on Border Tax Adjustments. The Border Tax Adjustment Report concluded that a regulation which distinguishes between products on the basis of their production methods is inconsistent with Article III, as this criterion is not related to the product *per se*. It is noteworthy, however, that the report of the Working Party on Border Tax Adjustments did not specify whether taxes based on non-product-related PPMs can be adjusted at the border. The pre-WTO case *US Tuna- Dolphin II* shared this view. It was mentioned in paragraph 5.8 that the Ad Note of Article III "*could not apply to the enforcement, at the time or point of importation, of laws, regulations or requirements that related to policies or practices that could not affect the product as such, and that accorded less favorable treatment to like products not produced in conformity with the domestic policies of the importing country."* See GATT Panel, *United States – Restrictions on Imports of Tuna (Tuna Dolphin II)*, DS29/R, 16 June 1994, not adopted, para. 5.8.

Less favourable treatment of imported like or directly competitive products

In the context of price-based measures, the WTO national treatment obligation distinguishes between situations where imported and domestic products are very much "like" in a narrowly defined sense, and almost identical (governed by the first sentence of GATT Article III:2), and situations where the products are substitutable and directly competing (governed by the second sentence of GATT Article III:2). Under the first sentence of Article III.2 even a minimal tax differential between imported and domestic products is fatal. Under the second sentence, the *Ad* Article is taken into consideration in referring to like domestic and imported products that are 'not similarly taxed'. In this case, a slight tax differential may not be sufficient to show that the like imported product is 'not similarily taxed', and thus it requires proof that the differential tax burden on the imported product is greater than *de minimus*, as determined on a case-to-case basis.

It is important to note that in the context of climate change border measures, the calculation of the precise level of the border adjustment will be difficult to determine and thus claims of less favourable treatment will be difficult to contest. Precise calculation would require, among other things, intricate information on input and output prices, the technical coefficients of production, the age of efficiency of capital equipment that emits GHGs, and the carbon emission characteristics of particular technologies.

In addition, any simple averaging procedure,[10] applicable to all imports categorized within a group of products based on their GHG emissions, could result in too high a border adjustment for some products. This is a significant complication in the Article III context, even if the same policy instrument were being used in both the jurisdictions concerned, particularly in a sector where there are multiple producers, and the difficulty is simply compounded if comparisons are necessary between entirely different policies (see below for further discussion in the context of comparable effectiveness under Article XX).

(ii) Direct and indirect taxes and GATT Article I, Article II and Article III are relevant if internal measures (adjustments) are applied on exports at the border.

The GATT/WTO rules on border adjustments for exports maintain a parallel distinction between direct taxes (on firms) and indirect taxes (on products) and only allow the latter to be rebated at the border on exports. This is in line with the traditional focus of the GATT on discrimination between products and the prohibition on the use of non-product related criteria for distinguishing between products including for the purpose of border adjustments on imported products.

The 1975 Working Party on Border Tax Adjustments articulated the distinction between indirect taxes that could be adjusted at the border and direct taxes that could not be so adjusted. This was upheld in *US - FSC*, which ruled that the United States could not rebate or otherwise adjust its direct taxes, finding that on the contrary, they constituted export subsidies.[11]

In dealing with border adjustments on exports, the Agreement on Subsidies and Countervailing Measures (SCM) and its Annexes focus on whether an input is consumed in the

[10] Panel Report, *United States – Standards for Reformulated and Conventional Gasoline ("US-Gasoline")*, WT/DS2/R, adopted 29 January 1996, paras. 6.10 – 6.16. Appellate Body Report, *United States – Customs Bond Directive for Merchandise subject to Anti-Dumping/countervailing duties ("US-Customs Bond Directive")*, WT/DS345/AB/R, adopted 16 July 2008, para. 184.

[11] See the more detailed discussion in Part III of this paper. But essentially the SCM agreement provides that tax on products (indirect taxes) that are rebated on exports do not constitute export subsides. This is not so for direct taxes.

production process and not whether it is physically incorporated. The Agreement also specifies that border rebates of indirect taxes paid on energy and fuels cannot be considered an export subsidy.[12]

The approach to defining acceptable tax remissions or rebates on exports in the SCM Agreement might tilt the argument in favor of allowing import-related border adjustments on non-product related PPMs, provided one were to consider that import and export border adjustments should be treated symmetrically.[13] Once again, it should be noted that this issue arises in the context of tax measures and not regulations.

In economic terms, allowing border adjustments on indirect taxes but not on direct taxes could only be justified by tax shifting or pass-through assumptions under which consumers paid all indirect taxes and producers paid all direct taxes. This is the difference between the destination principle (for indirect taxes) and the origin principle (for direct taxes). It has been well understood for a long time[14] that in economic terms, this distinction is arbitrary. The incidence of any tax is strictly an empirical matter, depending on the conditions of competition in the market. The GATT rules, however, seem to have been drafted on the basis of an invariant tax shifting assumption.[15]

This WTO distinction, allowing export rebates only for indirect taxes, will have important consequences in the context of GHG measures. To the extent that most GHG emission charges fall on producers, including at the plant level, such direct taxes could not be rebated upon export and any use of border tax adjustments (rebate) on exports could appear to be *prima facie* inconsistent with GATT Article II, Article III and the SCM Agreement.

2. Non-price based measures: is the measure a border measure or an internal measure applied at the border?

(a) GATT Article I and Article III are relevant if a GHG non-price based internal regulation is applied at the border.

As with price-based measures, (such as taxes or auctioned GHG emission permits or allowances), the Ad note to Article III explicitly allows the application of a domestic regulation on a good upon its importation at the border. The Ad Note repeats that such border-imposed regulatory measures remain subject to the disciplines of Article III and are deemed internal measures. This is another form of border adjustment. Note that contrary to price-based measures, Article III does not allow for any form of regulatory rebate upon exports and does not explicitly exempt those products destined to export from complying with domestic regulatory requirements.

In such a situation, the border adjustment (the imposition of the domestic regulation at the border) is possible so long as imported like products are not treated less favorably than competing domestic products.

(i) Like products

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[12] Pauwelyn, *supra*, footnote 8, p.17-19.

[13] There is an efficiency argument for symmetry, but it would seem that member governments have not opted for symmetry.

[14] OECD, 1968; Patrick Low, 'The Definition of Export Subsidies in GATT', *Journal of World Trade Law*, Vol. 16, No. 5, (1982) p. 375-390; Hufbauer, Fundamental Tax reform and Boder Tax Adfjustments, January 1996 (Institute for International Economics) No 43 Policy Analyses in International Economcis.

[15] A practical consideration behind the rules is that while indirect taxes may be adjustable at the border with relative ease, in the case of direct taxes it would be more difficult, necessitating the apportionment of a share of the overall tax liability to only a part of total production and associated revenues. However, even in the case where indirect taxes on inputs were meaningfully attributable to specific products, detailed knowledge of the production process would be required. Countries that make such adjustments on exports have experience of these challenges.

We refer to our discussion above on like products and Box 1, noting the extent to which a product emitting a lot of GHGs and one emitting less will nonetheless "compete" in most markets and thus be considered "like" with respect to the application of any GHG-related regulation.

(ii) Less favourable treatment

Article III on national treatment includes a prohibition on regulations or taxes that treat imported like products less favorably through modifying the "the conditions of competition to the detriment of imported products". This is the benchmark used to assess the existence of "protectionism" condemned by Article III – ie. whether the internal measure is "so as to afford protection to like domestic production".[16]

The criteria to determine whether less favourable treatment was imposed by a non-price based measure on imported like products seem to provide for more policy space than when dealing with price-based measures. While the national treatment obligation of Article III prohibits less favourable treatment of like products, it does not require identical treatment (except when dealing with like products narrowly defined under the first sentence of article III:2 for the purpose of price based measures).[17] Some have indeed argued that Article III allows for legitimate regulatory distinctions between "like" products. As noted in Box 3, recent jurisprudence seems to accept that the existence of a measure on a given imported product does not necessarily imply that this measure accords less favourable treatment to imports if the "detrimental" effect is explained by factors or circumstances unrelated to the foreign origin of the product. For some, Article III would thus allow for different treatment of otherwise like products if based, for instance, on different government and consumer "perceptions" of those otherwise like products.[18]

Box 3: Less Favourable Treatment

In *Japan – Taxes on alcoholic beverages*, the Appellate Body introduced a distinction between a situation where two products are like (narrowly defined) pursuant to the first sentence of paragraph III:2, and a situation where the products are substitutable and directly competing pursuant to the second sentence of Article III:2. Under the first sentence a simple, even minimal, distinction in tax rates between imported and domestic products is fatal. Under the second sentence, a tax differential between imported and domestic like products must be above *de minimis* to violate the 'not similarly taxed standard'.

When dealing with a domestic non-price based measure, the AB in *Korea—Various Measures on Beef* reversed the Panel, which had concluded that a regulatory distinction based exclusively on the

[16] Appellate Body Report, *EC-Asbestos, supra,* footnote 6, paras. 96 and 98: "…in endeavouring to ensure 'equality of competitive conditions', the 'general principle' in Article III seeks to prevent Members from applying internal taxes and regulations in a manner which affects the competitive relationship, in the marketplace, between the domestic and imported products involved, 'so as to afford protection to domestic production.'"

[17] *Ibid.*, para. 100 and Appellate Body Report, *Dominican Republic -Measures Affecting the Importation and Internal Sale of Cigarettes ("Dominican Republic-Cigarettes"),* WT/DS302/AB/R, adopted 25 April 2005, para .96.

[18] The sense of the argumentation in the *EC- Biotech Products case* has been made explicit in the General Agreement on Trade in Services, where Article VXII:2 states that a Member may meet its national treatment obligation by according trading partners "either formally identical treatment or formally different treatment to that it accords to its own like services and service suppliers". It goes on to say in Article XVII:3 that any treatment given will only be considered less favourable if it alters the conditions of competition between domestic and foreign supplies and suppliers to the advantage of the former. See Panel Report, *European Communities-Measures Affecting the Approval and Marketing of Biotech Products ("EC-Biotech Products"),* WT/DS291/R, WT/DS292/R, WT/DS293/R, adopted 29 September 2006.

origin of the product necessarily violated Article III. The Appellate Body emphasized the fact that "differential treatment" may be acceptable, so long as it is "no less favourable". Article III only prohibits discriminatory treatment which "modifies the conditions of competition in the relevant market to the detriment of imported products.

The obligation to provide no less favourable treatment has been clarified by WTO jurisprudence. The Appellate Body in *EC-Asbestos* stated that the term "less favorable treatment" expresses the general principle, in Article III:1, that internal regulations "should not be applied (…) so as to afford protection to domestic production."

A formal difference in treatment is neither necessary nor sufficient to show a violation. Whether or not imported products are treated less favorably should be assessed by examining whether a measure modifies the conditions of competition in the relevant market to the detriment of imported products. In other words, the examination of whether less favorable treatment exists must be based on a careful analysis of the contested measure and of its implications in the market place.

The *EC – Asbestos* report concluded that different treatment of like products may not necessarily result in less favourable treatment; it reads as follows: ' . . . a Member may draw distinctions between products which have been found to be "like", without, for this reason alone, according to the group of "like" *imported* products "less favourable treatment" than that accorded to the group of "like" *domestic* products'. In *Dominican Republic –Cigarettes*, the Appellate Body continued this line in stating that 'the existence of a detrimental action on a given imported product resulting from a measure does not necessarily imply that this measure accords less favourable treatment to imports *if the detrimental effect is explained by factors or circumstances unrelated to the foreign origin of the product*, such as the market share of the importer in this case'. In *EC – Biotech Products*, the Panel agreed with the EC that its GMO regulation was not "less favourable" to imports because the different treatment was not based on origin but on different government and consumer perceptions that treated imported and domestic GMOs and non-GMOs in the same way.

In the context of climate change mitigation measures, an argument can be made that while the national treatment obligation of Article III prohibits less favourable treatment of like products, it is legitimate to make regulatory distinctions within the treatment accorded to foreign products on the basis of a GHG-PPM so long as they are treated similarly to domestic producers. Such treatment would not constitute 'less favourable treatment' and therefore would not necessarily constitute a violation of the national treatment obligation.

Note, finally, that the non-discrimination obligation of the most-favoured nation principle of Article I is applicable to non-price-based domestic measures subject to Article III. Therefore a domestic regulation that is imposed or adjusted at the border against imported products must treat all like imports without discrimination.

Less favourable treatment and the determination of equivalence of policies

From an environmental perspective, policy equivalence would be a matter of comparable effectiveness in terms of the underlying policy objective. In the case of climate change policy, this would mean that we were interested in whether different policy approaches yielded the same degree of effectiveness in terms of controlling or reducing GHG emissions. This is the comparable effectiveness discussed below in relation to the Article XX public policy justifications for measures that restrict trade.

In the context of border adjustments that may be defended in terms of carbon leakage but which are motivated to a significant degree by competitiveness concerns, we confront a different

problem -- that of establishing cost equivalence. A GHG-related dispute over differential carbon constraint costs that had led to the imposition of border adjustment measures may call for a comparison between different kinds of measures to determine whether less favourable treatment was accorded to foreign products. For example, if an importing country maintained a cap and trade system (also called emissions trading) and an exporting country constrained carbon through direct regulation, a comparison would be required between a price-related and a non-price related regime. The essential question is whether policy measures with trade consequences may be judged in terms of equivalent effects on costs of production. As already noted, climate change mitigation policies may involve price or non-price interventions -- including taxes, GHG permits or allowances, prescriptive regulation[19], economic (dis)incentives of one form or another, and subsidies.[20] While these different approaches can all be evaluated in terms of their consequences for emission levels [21], the cost imposed by regulatory or administrative policy measures (standards, voluntary agreements or unilaterally-set emission or efficiency targets) are far more difficult to assess.[22] In theory, it is possible to render different policy-imposed costs comparable by attaching values to all relevant elements in production and output pricing that are attributable to the policy intervention in question. But economic tools that "convert" non-price-based policies to price-based equivalents raise both analytical and practical challenges. We know from trade theory on the non-equivalence of tariffs and quotas, for example, that even if price equivalents are calculated, different kinds of intervention carry different resource allocation consequences which can affect the conditions of competition in the market.

First, calculating the impacts of non-price related policies would require determining a sector's 'business-as-usual' trends (i.e. what would happen in the absence of a specific policy). National circumstances surrounding industrial activities subject to international trade vary considerably. Other than climate policy, factors such as energy costs, labour costs, infrastructure, and access to technology can differ widely from one country to the next and can change over time unexpectedly.[23] In particular, a myriad of factors affect production decisions (and hence production process emissions).

Second, economic models generally simplify assumptions such as varying degrees of substitutability among like products from different origins, and pass-through estimates of the impact of carbon costs on product prices. Such simplifications do not serve well where precision is required in calculating price equivalents between relatively straightforward price instruments (e.g. taxes) and regulatory policies (e.g. standards). In sum, economic analyses cannot fully project the costs of a regulation or a standard without making simplifying assumptions.

However, GATT Article XI is relevant if a GHG non-price based measure is a form of import or export quota. Article XI prohibits quantitative import and export restrictions enforced at the border. If, for example, a GHG programme or mechanism to control the level of GHGs emitted by imported products or foreign producers resulted in the maintenance of quantitative restrictions (on imports or

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[19] Prescriptive policies are regulations, mandates and agreements that directly compel specific actions by, or communicate expectations to, industry companies and/or associations. They can be: technology-prescriptive as in the case of equipment standards; management-prescriptive as is in the cases of auditing, conservation planning and energy management standards; or performance oriented as in the cases of plant, firm or sector regulation and agreements concerning benchmark targets and absolute energy savings goals.

[20] An extensive literature -- not reviewed here -- has developed on the relative merits of alternative carbon constraint policies. Taxes, for example, provide cost certainty for businesses because the tax rate is known in advance. Emissions' trading potentially offers lowest-cost solutions for the economy, but the price of allowances (or permits) is not known in advance and will be determined by trading in the market.

[21] R. Baron, *et al.*, 'Sectoral Approaches to Greenhouse Gas Mitigation - Exploring Issues for Heavy Industry', IEA Information Paper, IEA/OECD, Paris (2007). Page 66

[22] Comparability of costs of different climate change mitigation policies can be analysed either from a top-down level, through general equilibrium models, or using bottom-up cost analyses. See Baron *et al.*, *supra*, footnote 21. (pages 18-19)

[23] *Ibid.* pages 18-19

on exports), Article XI could become relevant. The mechanism used to control GHG-related imports might not be the same as that imposed on domestic producers.

Depending on the form and the nature of the requirements imposed on foreign producers and products targeted by a national climate change program, such non-price based GHG measures will be legally considered as either a border measure governed by GATT Article XI or an internal non-price based measure applied (adjusted) at the border. In *China – Autoparts*, a test was created to assist in the determination of whether a measure is to be considered a price-based border measure (tariff) or an internal measure enforced at the border (tax).[24] However, there is no easy rule and each situation must be determined on its own facts. Recall that under the GATT, the Panel considered that the PPM related domestic regulation on the method of fishing tuna could not be covered by the discipline of Article III of GATT (as it was PPM-based) and it was thus automatically considered a border import restriction in violation of Article XI. The distinction between a border measure covered by an Article XI prohibition on quantitative restrictions and an internal or domestic regulation enforced at the border is not always simple and the complexity and sophistication of the climate change policy design will not help this fundamental legal distinction.

Note finally that a non-discrimination obligation exists for quotas and tariff-quotas that are imposed consistently with Article XI of the GATT. This is provided for in Article XIII. There are only very few situations where an Article XI restriction could be WTO consistent, including situations of safeguards, situations covered by Article XI:2 specially relevant for export quotas or justified under Article XX of GATT.

3. Conclusion

As discussed above, many of the climate change related national programs will impose measures on foreign products and foreign producers which would appear to lead to *prima facie* violations of basic GATT market access provisions. This arises in a number of legal contexts and in no small part is due to the fact that the basic GATT rules were not drafted with climate change considerations in mind. However, if a GHG-related measure were to fall foul of the provisions discussed above, the challenged member is entitled to invoke the flexibilities of Article XX.

B. ARTICLE XX JUSTIFICATIONS

If a tariff or an internal measure applied at the border (border adjustment measure) is found to be inconsistent with Article I (MFN violation), Article II (tariff collected above bound level), Article III (on grounds that like products are treated less favourably), or Article XI (illegal quantitative measure), Article XX may nevertheless confer consistency on the measure under certain circumstances. Article XX of GATT 1994 allows Members to take measures otherwise inconsistent with the GATT obligations on public policy grounds. Article XX (a) to (j) constitutes an exhaustive list of public policy exceptions to the mainstream GATT rules. These exceptions include the protection of human, animal or plant life or health, and the conservation of exhaustible natural resources.

1. Imputing motives

The conceptual underpinning of Article XX raises a question which has been debated for many years and which is problematic for economic analysis: whether the Appellate Body prohibited

[24] See Appellate Body Report, *China-Measures Affecting Imports of Automobiles ("China-Automobiles")*, WT/DS339/AB/R, WT/DS340/AB/R, WT/DS342/AB/R, adopted 15 December 2008, paras. 127-182.

the use of "aims-and-effect" to distinguish like products[25] because of the impossibility to determine the "intent" of the legislator. Yet it is the essence of Article XX to allow a Member to invoke one of the listed policies to justify GATT violations. If, generally, in the WTO, only specificities of a measure can be challenged, an assessment under Article XX calls for the examination of the goal of the entire measure at issue. Article XX is concerned with the policy goal of the measure or program that may include WTO inconsistent provisions. Nevertheless, the focus of the analysis is not whether the violation of the GATT relates to the conservation of natural resources (paragraph g) or is necessary to the protection of health (paragraph b) but rather whether the entire measure at issue is one concerned with the conservation of natural resources etc – a part of which may include WTO inconsistent provisions.

This requires the imputation of motive in deciding the permissibility of a policy, including an adjustment at the border. In Article XX, the process of assigning differing degrees of legitimacy or values to different public policy objectives requires a value judgment. Economic analysis leaves little room for this, focusing instead on measurable outcomes from policy interventions. The essential problem is how to distinguish between hidden protectionist motives and a focus on public policy objectives such as the protection of the environment, deemed to transcend the primacy of economic welfare maximization measured in terms of income. In the *EC-Asbestos* case, the Panel argued that the protectionist application of a measure could be discerned from its design, architecture and revealing structure.[26]

2. The rights and obligations of Members under Article XX - Key Features of Article XX

Box 4: Key Features of Article XX

A measure that is aimed at protecting the environment may have the consequence of restricting trade. However, Members are authorised to pursue certain policy objectives, including environmental ones, provided that these objectives "have been recognized as important and legitimate in character." GATT Article XX provides for two main grounds to justify an environment-related measure: where the measure is necessary to protect human, animal or plant life or health (Article XX(b)); or where it relates to the conservation of exhaustible natural resources (Article XX(g)).

The Appellate Body has articulated a two-tier test to determine whether an environmentally related trade restriction may be justified under Article XX. First, the disputed measure must fall under one of the two justifications in paragraph XX(b) or (g). Second, the measure may not constitute (i) arbitrary or unjustifiable means of discrimination between countries where the same conditions prevail, nor (ii) a disguised restriction on international trade. The second part of this test no longer deals with the objective of the measure, but with the way the measure is applied or implemented, and whether this has been done in a reasonable manner and in good faith. This applies to both substantive and procedural elements.

The Appellate Body has observed that "conditioning access to a Member's domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the exceptions ... of Article XX". However, the application of a measure may be

[25] Appellate Body Report, *European Communities – Regime for the Importation, Sale and Distribution of Bananas ("EC- Bananas III")*,WT/DS27/AB/R, adopted 9 September 1997, para. 241. Appellate Body Report, *Japan – Taxes on Alcoholic Beverages ("Japan-Alcohol")*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted October 1996, p. 33 (" Although it is true that the aim of a measure may not be easily ascertained, nevertheless its protective application can most often be discerned from the design, the architecture, and the revealing structure of a measure".)

[26] Panel Report, *European Communities – Measures Affecting Asbestos and Products Containing Asbestos ("EC-Asbestos")*, WT/DS135/R, adopted 18 September 2000, para. 8.236.

considered unduly coercive in respect of the specific policy decisions of other foreign governments where it is applied rigidly or fails to take into account the different conditions existing in other countries.

The acknowledgement by the Appellate Body that unilateral actions may be legitimate for environmental protection can be contrasted with two pre-WTO GATT panel rulings in the Tuna/Dolphin disputes. Moreover, WTO Members have also recognized that certain environmental concerns may be of a transboundary or global nature. This was reflected in a report by the WTO's Committee on Trade & Environment (CTE). This report, as well as Principle 12 of the Rio Declaration on Environment and Development, were referred to by the Appellate Body in support of its decision in US – Shrimp.
As regards the possibility that a measure may be a disguised restriction on trade, such protectionist intent can be discerned from its design, architecture and revealing structure. This could involve analyzing the comprehensive, or overall strategy adopted to reach the objective and could involve looking at the transparency and predictability of the process. The measure as a whole will be analyzed, not merely its discriminatory element.

1, Analysis of the paragraph

For analysis under the first step mentioned above, the Appellate Body has developed a test to assess when a measure is "necessary" for, say, the protection of animal or plant health or the environment. It calls for a weighing and balancing of a series of factors, including: (i) "the relative importance of the common interests or values" pursued by the measure; (ii) the "contribution of the measure to the realization of the end pursued"; and (iii) its trade impact.

The Appellate Body has stated that "[t]he more vital or important those common interests or values are, the easier it would be to accept as 'necessary' a measure designed as an enforcement instrument." In EC- Asbestos the AB clarified that health is "both vital and important in the highest degree." Similarly, in Brazil – Tyres the AB mentioned, "few interests are more "vital" and "important" than protecting human beings from health risks, and that protecting the environment is no less important." In this case, Brazil had imposed an import ban as well. In addition to being important, the measure has to make a meaningful contribution to the protection of human, animal, plant life or health. A contribution exists when there is a genuine relationship of ends and means between the objective and the measure. It must bring about a material contribution to the achievement of its objective. There is no fixed methodology to establish this. A demonstration that the measure is apt to produce a material contribution could consist of quantitative projections in the future, or of qualitative reasoning based on a set of hypotheses that are tested and supported by sufficient evidence.

It is for the complainants to prove that there are no reasonable, WTO-consistent alternatives available for achieving the desired aim. Whether alternatives are reasonably available depends on similar factors such as (i) the extent to which the alternative measure contributes to the realization of the end pursued; (ii) the difficulty of implementation; and (iii) the trade impact of the alternative measure compared to the measure at issue in the dispute. In addition to being 'reasonably available', the alternative measure must also achieve the level of protection sought. A Member does not have to explore and exhaust any possible alternative measure – it only has to address those potential alternatives which are raised by the complainant.

2. Analysis of the chapeau

In regard to the second step of the Article XX GATT noted above, a Member's right to rely upon one of the policy objectives covered by the exceptions is limited by the requirement that it must comply with the introductory clause (or chapeau) of those provisions. The purpose of the introductory clause

is to prevent the "abuse or illegitimate use of the exceptions to substantive rules available in Article XX."

The chapeau's first requirement, that there may not be an arbitrary or unjustifiable discrimination between countries where the same conditions prevail, can arise between exporting countries, but also between exporting Members and an importing country. An important part of the non-discrimination requirement is that Members must take into account the different conditions that may occur in the territories of other Members. This obligation is twofold, since discrimination occurs i) when countries in which the same conditions prevail are treated differently and ii) "when the application of the measure does not allow for an inquiry into the appropriateness of the regulatory program for the conditions prevailing in those exporting countries".

In order to prevent arbitrary or unjustifiable discrimination the measure needs to be sufficiently flexible and consider measures other Members have enacted, which are comparable in effectiveness, to address the same policy objectives. A country may be obliged to impose lower requirements or none on countries that have their own legislation (comparable in effectiveness). Moreover, the same regulation may not be appropriate for countries where the same conditions do not prevail, for example as between developing and developed countries. A country may also be obliged to consider whether developing countries should carry the same burden as developed ones. More flexibility may need to be given to them.

This part of the chapeau also contains the obligation of good faith; a country should engage in serious efforts to negotiate and conclude an agreement to address concerns before resorting to trade restrictive measures and an Article XX justification. The WTO recognizes the need for concerted and cooperative efforts and the ruling in US-Shrimp indicated that efforts should be made to secure the legitimate policy goal through negotiations and consensus instead of unilateral and non-consensual procedures. Such negotiations should be conducted with all Members and all need to be given similar opportunities to negotiate. While negotiations need not be identical, comparable efforts need to be made. However, there is no obligation to reach an agreement. This has been an important development, since it carries the recognition that, in principle, Members may act unilaterally to protect the environment.

No clear test exists for the chapeau. However, a review of the cases in which GATT Article XX has been addressed, as well as the points made above, suggest a number of factors that may be relevant in assessing whether the application of a measure by a Member complies with the chapeau requirements (depending on the circumstances of any particular case). These include: i) if there is discrimination, whether that discrimination was foreseen by the Member, or whether it was merely inadvertent or unavoidable; ii) whether less-discriminatory courses of action are available; iii) whether "serious, good faith efforts" have been made by the Member to lessen any discriminatory effects; iv) whether similar or comparable opportunities have been provided by the Member, or consideration given, to all exporting Members to negotiate; v) whether the application of a measure is flexible enough to take into account the specific conditions prevailing in the exporting Member's economy; and vi) whether the application of the measure complies with other WTO standards, such as in relation to due process and transparency.

In WTO dispute settlement, it has most often been a failure to demonstrate compliance with the introductory chapeau of Article XX GATT, which has led to findings that certain measures are not justified by those provisions. But, as in the US – Shrimp case, following such a finding, Members may make changes to their original measure in order to bring it into full compliance with Article XX GATT. The importance of Article XX GATT may increase in the coming years, since the AB in China - Publications ruled that Article XX is available as a defense to claims under paragraph 5.1 of China's Accession Protocol. This implies that Article XX might be invoked as a "defense" to a claim of violation of the obligations in Agreements outside of the GATT.

3. The operation of Article XX

Essentially, then, the legal considerations to be assessed when a WTO Member invokes Article XX are whether: i) under the relevant listed sub-paragraphs of Art XX, the challenged measure is *apt to contribute to the policy goal*[27] in question; and ii) under the *chapeau* of Article XX, whether the application of the measure is done in good faith so as to ensure that there is no *arbitrary or unjustifiable* discrimination between countries *in the same conditions* or that it constitutes a *disguised restriction* to trade.

Arguably the greatest challenge in invoking Article XX to justify a GATT-inconsistent border measure is to find justification for any prior invocation of "competitive concerns" as the basis for such a border measure. The reason for this is that competitiveness concerns are not one of the listed public policies in Article XX. The policies that can be invoked are those listed in paragraph (a) to (j), where those in paragraphs (b) on the protection of health and (g) on the conservation of natural resources or the environment are the most likely to relate to climate change programs.

(a) Is the measure at issue relevant to one of the public policy objectives listed in the sub-paragraphs of Article XX? –

(i) Is the GHG-related measure part of a programme that is apt to make a material contribution to the achievement of its objective (paragraph (b))?

The evolution of WTO legal rulings helps in the interpretation of criteria determining the WTO-legitimacy of public policy action justified under the exceptions of Article XX. Early on[28], the Appellate Body developed a three-pronged Article XX necessity test involving a "weighing and balancing" of the values at issue. The criteria related to the: i) importance of the value protected; ii) effectiveness of the measure in attaining the stated public policy objective; and iii) trade restrictiveness, including in terms of the availability of a WTO-consistent alternative that guarantees the desired level of attainment of the public policy objective. This approach contrasted with the GATT, where the degree of trade restrictiveness was the predominant issue. Dispute settlement cases[29] have continued to expand the scope of the Article XX exceptions and broaden the policy space availabe to WTO Members to address non-trade concerns.

There was some shift in emphasis in *Brazil – Retreaded Tyres*, where the Appellate Body focused on one essential element of the determination, namely, whether the restrictive measure at issue -- the import prohibition on retreaded tyres – was "apt to make a material contribution to the achievement of its objective"[30]. The AB insisted that such an assessment was to be qualitative and quantitative and noted in particular that the contribution does not have to be immediately observable[31] adding that "it may prove difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the

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[27] Appellate Body Report, *Brazil - Measures Affecting Imports of Retreaded Tyres ("Brazil-Tyres")*, WT/DS332/AB/R, adopted 3 December 2007, para. 150, and see further paras. 145-151.

[28] Appellate Body Report, *Korea—Measures Affecting Imports of Fresh, Chilled and Frozen Beef (Korea-Beef)*, WT/DS161/AB/R and WT/DS169/AB/R, paras. 161- 164, 175-176.

[29] Appellate Body Report, *EC-Asbestos, supra*, footnote 6, paras. 170-175. Panel Report, *Dominican Republic - Import and Sale of Cigarettes ("Dominican Republic – Cigarettes")*, WT/DS302/R, adopted 26 November 2004, paras. 7.213-7.215. Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services ("US-Gambling")*, WT/DS285/AB/R, adopted 7 April 2005, paras. 304-311, 323, 324.

[30] Appellate Body Report, *Brazil-Tyres, supra*, footnote 33, para 151: A contribution exists when there is a genuine relationship of ends and means between the objective pursued and the measure at issue. To be characterized as necessary, a measure does not have to be indispensable. However, its contribution to the achievement of the objective must be material, not merely marginal or insignificant …"

[31] *Ibid.*, para. 151.

same comprehensive policy".[32] So the issue of "alternatives" has become particularly pertinent to WTO members when invoking environmental or health policies to justify a trade restriction otherwise inconsistent with GATT.

Are there WTO consistent alternative measures[33]?

This is an area where the jurisprudence has taken a 180° turn. In the GATT days, it was understood that the country invoking the exception would have to prove the absence of alternatives.[34] Under the WTO, the Appellate Body changed this and concluded that "while the responding Member must show that a measure is necessary, it does not have to show, in the first instance, that there are *no* reasonably available alternatives to achieve its objectives".[35] It will therefore be for those challenging the effectiveness of any climate change program to prove that alternative measures would have been reasonably available in light, *inter alia*, of the development level of the country taking such a measure. In particular, a measure justified on environmental or public health grounds cannot be rejected by pointing to a less trade restrictive alternative unless that alternative is technically and financially within reach for the specific Member concerned, and unless it provides at least the same level of protection as that desired by the Member adopting the measure.[36]

(ii) Is the GHG measure part of a programme that relates to the conservation of natural resources and applied jointly with domestic restrictions on production and consumption? (paragraph (g))

If the recent *Brazil-Tyres* dispute seems to have brought the test under paragraph (b) (measure necessary for the protection of health of human, animals and plants) closer to the test under paragraph (g) (measure relating to the conservation of natural resources) – it remains the case that paragraph (g) contains an explicit requirement that even-handed domestic policies are also undertaken in pursuit of the public policy objective.[37]

In the context of climate change, whether restrictions on domestic consumption and production are "even-handed" with actions affecting trade will require a complicated comparison of climate change programmes, an issue we will discuss further.

(b) The chapeau of Article XX – assessing whether the application of a measure is in good faith.

A measure considered to benefit from the justification of one of the sub-paragraphs of Article XX must also comply with the chapeau of Article XX, which attempts to determine whether the challenged measure is applied as a disguised restriction to trade, implying, unjustifiable discrimination. As noted above, the head-note of Article XX states that a public policy measure may not constitute: i) *arbitrary or unjustifiable discrimination* between countries where the *same conditions prevail*; nor ii) a *disguised restriction* on international trade. The *chapeau* of Article XX is

[32] *Ibid.*

[33] Note that we purposely used the term "WTO-consistent alternative" and not "WTO less-trade restrictive". The WTO Appellate Body's jurisprudence is ambiguous on this issue but the more recent case law seems to require that a WTO-consistent alternative be put forward by the complainant. It may be difficult to assess the level of trade restrictiveness between two inconsistent measures (for instance, is a violation of article XI worse than a violation of MFN?)

[34] GATT Panel Report, *United States–Restrictions on the Imports of Tuna (Tuna Dolphin I),* DS21/R - 39S/155, 3 September 1991, not adopted and see GATT Panel, *United States – Restrictions on Imports of Tuna (Tuna Dolphin II),* DS29/R, adopted 16 June 1994, for example paras 3.64 and 3,81.

[35] Appellate Body Report, *US-Gambling, supra,* footnote 35, para. 309. (original emphasis).

[36] Appellate Body Report, *Brazil-Tyres, supra*, footnote 33, para. 171 citing, at the end of the quotation Appellate Body Report, *US–Gambling, supra,* footnote 35, para. 308.

[37] Appellate Body Report, *US-Gasoline, supra*, footnote 31, p. 20-21.

considered to be "but one expression of the principle of good faith".[38] Panels and the Appellate Body have thus required Members introducing trade-restrictive measures to make a legitimate effort to achieve the policy goal in question through cooperative multilateral action, which is often crucial to the effective pursuit of environmental ends.

(i) Prevailing conditions and development considerations

The Article XX *chapeau* wording "where the same conditions prevail" has been interpreted as as requiring a consideration of the development conditions of the Member taking the measure or the of Member(s) affected by the WTO violation justified under Article XX as well. The prohibition against "arbitrary or unjustifiable discrimination between Members where the same conditions prevail" seems to recognize that different conditions in different Members call for different treatment.[39] The same regulation might not be appropriate for countries where the same conditions do not prevail.[40] In a similar vein, the *EC – Tariff Preferences* finding interpreted language in the Enabling Clause to allow discriminatory preferential treatment conditional upon compliance with development criteria so long as countries in similar conditions were treated similarly.[41]

Among such different "conditions", one might argue that measure in respect of which Article XX is invoked should provide for development considerations in the broad context of its framework and operational features. This would be consistent with the non-reciprocity and special and differential treatment provisions of the WTO. It would also be in line with the language in the preamble to the Marrakesh Agreement on sustainable development, where Parties to the Agreement seek "both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development." Such an interpretation of the chapeau of Article XX could imply a form of principle parallel to that of "common but differentiated responsibility" enunciated in the 1992 Rio Declaration and would be supported by the sustainable development objective articulated in the Preamble of the WTO Agreement.

(ii) Comparable effectiveness

The language of the chapeau of Article XX also implies that while the importing Member invoking Article XX cannot insist on a particular policy approach towards a public policy objective, it can nevertheless require that exporting Members maintain specific environment policies and measures that are comparable in effectiveness in dealing with the policy concern it is invoking.[42] In the first *US – Shrimp* case, the Appellate Body found that the United States required other WTO Members to "adopt a regulatory program (with respect to shrimp harvesting) that [was] not merely comparable, but rather essentially the same, as that applied to the United States shrimp trawl vessels." This was considered to be too "rigid and unbending", because it did not take into account whether exporting countries might be using other measures to protect sea turtles.[43] In the second *US – Shrimp* dispute, the US measure was considered to be consistent with Article XX because the US introduced

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[38] Appellate Body Report, *US-Shrimp, supra,* footnote 29, paras. 158-160.

[39] *Ibid.,* para. 164.

[40] It may be argued that this is the case for developing versus developed countries. It may oblige a country to consider whether developing countries should carry the same burden. More flexibility might need to be given to developing countries, which would be in line with the '*common but differentiated responsibilities'* statement under UNFCCC. Thus, any measure must not be rigid or inflexible and should involve a comparison with other countries. *Ibid.,* para. 177.

[41] Appellate Body Report, *European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries ("EC-Tariffs"),* WT/DS246/AB/R, adopted 7 April 2004, para. 273.

[42] *Ibid.,* para. 144. It may oblige a country to impose lower or no requirements on countries that have their own (comparable in effectiveness) climate legislation.

[43] *Ibid*., para. 163.

flexibilities in its import regulation that allowed imports from countries that demonstrated policies of comparable effectiveness in dealing with the protection of turtles.[44]

Article XX would therefore require a comparison of the effectiveness of alternative policy approaches adopted by Members. As with the assessment of the comparative costs of alternative climate change policies discussed above, measuring comparable effectiveness in terms of environmental objectives is undoubtedly challenging. In the case of climate change policy, the focus of the comparison would be the health or environmental effectiveness of the policies subject to comparison.

4. Conclusion

It may be concluded from the above that the scope of Article XX is being expanded over time to justify public policies that would otherwise be inconsistent with the GATT/WTO, particularly involving environmental considerations,. This takes the WTO in the direction of providing policy space for GHG-related measures that are *a priori* WTO-inconsistent but which would nonetheless be justified.

Until recently, it might have been supposed that the scope of Article XX was limited to GATT provisions. However, in *China Audiovisual Services,* the Appellate Body ruled that Article XX was available as a defense to claims under paragraph 5.1 of China's Accession Protocol.[45] In *US-Shrimp Anti-Dumping from Thailand and India* it was submitted *"in arguendo"* that such Article XX justifications could be used against allegations of violation of the Antidumping Agreement[46] and the Appellate Body entertained the argumentation.[47]

Some may suggest that Article XX could be invoked against allegations of violation of the Agreement on Subsidies and Countervailing Measures to the extent that the SCM Agreement could be considered to interpret and implement Article VI and Article XVI of GATT. This may be relevant in the context of the debate over the WTO implications of free allocations of emission permits, for example, where some Members may want to invoke Article XX to justify some subsidies otherwise inconsistent with the SCM Agreement. Therefore, in the context of climate change-related disputes, and in the absence of the first-best option of an international agreement, the operation of Article XX may become crucial.

A clear issue for the multilateral trading system is whether this growing tendency to rely on public policy argumentation to determine the acceptability of trade policy actions will evolve into a stable equilibrium in international trade relations or whether it will usher in growing uncertainty and a lack of predictability. To avoid the latter while embracing the need to accommodate environmental imperatives, it would seem that governments may need to emphasize negotiation over litigation as they address the interface between climate change policy and trade policy.

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[44] *Ibid.*, para. 144.

[45] Appellate Body Report, *China – Audiovisual Services, supra,* footnote 5, paras. 205-233.

[46] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade, 1994.

[47] [47]Appellate Body Report, *United States— Measures Relating to Shrimp from Thailand ("US-Shrimp (Thailand)"),*WT/DS343/AB/R, adopted 16 July 2008, paras. 308-310, 319, and Appellate Body Report, *United States– Customs Bond Directive for Merchandise Subject to Anti-Dumping/Countervailing Duties ("US-Customs Bond Directive"),* WT/DS345/AB/R, adopted 16 July 2008, p.117 and further. In Panel Report, *Colombia – Indicative Prices and Restrictions on Ports of Entry ("Colombia-Ports of Entry"),* WT/DS366/R, adopted 27 April 2009, para. 7.498, it was also stated that: "In any cases where a measure may violate a particular provision of the WTO Agreements, a number of exceptions – notably those included in Article XX of the GATT 1994 – allow WTO Members to justify a WTO-inconsistent measure." This panel was however only dealing with claims of violation of GATT provisions.

III. TECHNICAL BARRIERS TO TRADE AND STANDARDS

Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues is also covered by the disciplines of the Agreement on Technical Barriers to Trade (TBT Agreement - see Box 5). In contrast to the border adjustment discussion relating to taxes and charges, technical regulations already establish border adjustment in the form of a threshold requirement that is extremely unlikely to be calibrated or varied in any way (for example, a standard content of GHGs for all goods exported from a country). Short of not applying the standard, no offset is called for because the import in question will simply not pass the border. The discussion above on non-product-related PPMs and their standing in relation to article III and Article XX also applies in this context.

Box 5: TBT

The TBT Agreement lays down rules for standards and technical requirements, for example technical performance standards, labelling requirements and energy efficiency requirements. While GATT establishes a relative standard of treatment for trade in goods, TBT requires certain absolute standards of treatment. A distinction is made between i) technical regulations, which are mandatory measures, and ii) standards, which are non-mandatory standards and which are covered in a less stringent manner by the TBT Agreement.

Technical regulations refer to mandatory regulations applied to an identifiable product and that lays down one or more characteristics of the product. Product characteristics include features and qualities intrinsic to the product as well as those that are related to it, such as means of identification. There is controversy whether technical regulations, standards and conformity assessment procedures relating to or based on a non product related PPM or a life cycle approach of the product fall within the scope of application of the TBT Agreement.

A standard is considered a "document approved by a recognized body, which provides, for common and repeated use, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method".
The TBT Agreement sets out several obligations, among which is a non discrimination obligation similar to the GATT. In addition, regulations may not create unnecessary obstacles to trade or be more trade restrictive than necessary to fulfil a legitimate objective, taking into account the risks non-fulfilment would create. Relevant elements of consideration are, inter alia: available scientific and technical information related processing technology or intended end-uses of products. As laid out in Article 2.2 TBT, the least trade restrictive means must be used. This obligation requires that all measures, whether or not they are discriminatory, are no more trade restrictive than necessary. Thus, a government should assess all technical regulations on their trade restrictiveness. The reference to "necessary" implies a similar necessity test as under the GATT Article XX exceptions. While the state may establish its own desired level of protection, the necessity test analyzes i) the effectiveness of the (alternative) regulation of reaching the objective, ii) the importance of meeting the objective and the risks of not meeting it, and iii) less trade restrictive alternatives.

A. TECHNICAL REGULATIONS ON TRADE

The TBT Agreement authorizes technical regulations that restrict trade so long as they are 'not . . . more trade-restrictive than necessary to fulfill a 'legitimate objective', with the protection of the environment and of sustainable development being a legitimate objective. While the Member may establish its own desired level of protection, the necessity test analyzes: i) the effectiveness of any

(alternative) regulation in reaching the objective in question; ii) the importance of meeting the objective and the risks of not meeting it; and iii) less trade restrictive alternatives. This test, involving notions of importance, effectiveness and trade-restrictiveness, may complicate the choice between available domestic regulatory options for states. This is relevant to questions regarding the importance of climate change and the role of uncertainty in determining whether a measure is necessary. Moreover, the requirement that a measure makes a meaningful contribution to the public policy goal in question -- here sustainable development via the mitigation of climate change and the respect for special and differential treatment, both legitimate objectives of the WTO -- may influence decisions on how broadly to outline the objective. Several technical regulations exist on GHG mitigation action. Regulations on equipment efficiency, which commonly take the form of minimum efficiency performance standards (MEPS), are generally applied on products in the residential, commercial and automotive sectors. They are used less frequently in the industrial sector, where they are applied to some relatively uniform, widely-used industrial technologies, such as boilers and electric motors.

Regulations most directly affect equipment manufacturers and importers -- preventing them from selling inefficient equipment. MEPS for electric motors, boilers and industrial equipment have been implemented in the EU, North America, Australia, Brazil, China and Mexico. Standards for maximum heat loss from combustion facilities are used in Germany.[48]

Regulations can also be used to influence full process efficiency and/or process configurations in industrial sectors. For example, cement plants may be required to attain certain overall benchmark efficiency levels, or iron and steel plants may be required to use coke dry quenching processes. At present, process efficiency and configuration regulations are only used in China[49] and are planned for implementation in India. More typically, governments define energy efficiency goals for specific processes, factory or industry sector, based on best domestic or international practice – enumerated as benchmark targets – through negotiated agreements or non-binding targets.

The nature of the necessity test under the TBT Agreement applicable to all those technical regulations raises questions about measuring their effectiveness in addressing climate change mitigation. An additional issue is how to compare different systems and whether the quality of climate change action should be assessed on the basis of its effects or not. That in turn weighs on whether the evaluation of policy costs should be undertaken on a sector-by-sector or economy wide basis, issues discussed above in the context of Article XX.

B. LABELLING

It is worth noting that technical regulations include "packaging, marking, or labelling requirements as they apply to a product, process or production method". Note that in the context of labelling there is no reference to "their related" PPMs, which has been interpreted by some as an indication that the rules on labelling encompass non-product-related PPMs. Many developing

[48] See IEA Energy Efficiency Policy and Measures', Paris: OECD/IEA, 2004, available online at: http://www.iea.org/textbase/pm/?mode=pmdm (last accessed July, 2009); European Union, 'Summary of legislation : Ecodesign for energy-using appliances', 2008, available online at: http://europa.eu/scadplus/leg/en/lvb/l32037.htm (last accessed April, 2008); NRCAN (Natural Resources Canada), 'Canadian Industry Program for Energy Conservation (CIPEC)', 2008, available online at: http://www.oee.nrcan.gc.ca/industrial/cipec.cfm?attr=24 (last accessed September 2008); A.G.P. Garcia, A. S. Szklo, R. Schaeffer, M. A. McNeil, Energy-efficiency standards for electric motors in Brazilian industry, *Energy Policy*, Vol. 35 No. 6, (2007) p. 3424-3439; NDRC – National Development and Reform Commission, 'China Medium and Long Term Energy Conservation Plan', China Environmental Science Press, 2005, ISBN 7-80209-035-0; and Yanjia Wang, 'Energy Efficiency Policy and CO2 in China's Industry: Tapping the Potential', background information for presentation at Annex I Expert Group Seminar in Conjunction with the OECD Global Forum on Sustainable Development, March 2006.

[49] See NDRC (2005) and Wang (2006), *supra*, footnote 54.

countries, however, have argued that non-product-related PPM regulations are not "covered" and have politically challenged notifications of labelling requirements based on social considerations and timber production processes that have no physical impact on the products traded. It would seem, however, that the non-application of the TBT Agreement to non-product-related PPM regulations would not make such regulations incompatible with WTO law. If the TBT Agreement does not cover or apply to non-product-related PPM regulations, these would be examined under Article III and Article XI of GATT, and may find justification under Article XX. To remove non-product-related PPM regulations from the coverage of the TBT Agreement would exempt them from the other requirements of the Agreement, including those on notification, harmonization and mutual recognition. Furthermore, unlike in the case of the Sanitary and Phytosanitary Agreement dealing with technical regulations imposed on agricultural products to address health risks, the TBT Agreement contains no presumption of compliance with GATT.

It would seem inefficient if product-related PPM technical regulations were subject to the more stringent requirements of the TBT Agreement, while the less transparent non-product-related PPM technical regulations -- possibly justifiable under Article XX of GATT -- were not. Whether non-product-related PPM regulations generally are included in the definition of technical regulations depends on how one reads "characteristics" of the products and "their related process and production methods". The competitive nature and capacity of products surely constitute characteristics of the same products. On the other hand, the Tokyo Round Standards Code made an explicit distinction in Article 14.25 in allowing challenges against "drafting requirements in terms of processes and production rather than in terms of characteristics of products".[50]

Panels and the Appellate Body have rarely addressed the definition of labelling, and only within the context of determining whether a labelling measure is in fact a technical regulation. Nevertheless, the jurisprudence has been consistent. Primarily, in *EC-Asbestos*, the Appellate Body defined a technical regulation as a document that lays down "product characteristics" and thus determining that "distinguishable marks" such as labels fall within this category of characteristics. The Appellate Body stated that the category "product characteristics" includes not only features and qualities intrinsic to the product itself, but also related "characteristics" such as the means of identification…of a product".[51] It further affirmed that a lone labelling requirement is sufficient to fulfil the definition of "technical regulation".[52]

The Panel in *EC*-Sardines briefly examined the ordinary meaning of labelling and concluded that labels (as well as naming requirements) are a "means of identification of a product"[53], a definition that the Appellate Body later supported through referring to *EC-Asbestos.*[54] The Panel in *EC-Trademarks and Geographical Indications* also addressed labelling requirements, stating that a measure that "expressly sets out a requirement that concerns what must be indicated on "the label" of a product"[55] is a labelling requirement, reaffirming that 'the label on a product *is* a product

[50] See Marceau and Trachtman, 'A Guide to the World Trade Organization Law of Domestic Regulation of Goods', in *The Oxford Handbook of International Trade Law*, eds. D. Bethlehem, D. Mcrae, R. Neufeld, and I. van Damme (Oxford: OUP, 2009). See also Marceau and Trachtman, 'Revised version: TBT, SPS and GATT: A Map of the WTO Law on Domestic Regulations of Goods', *Columbia Studies in WTO Law and Policy*, vol. 1: Trade & Health, eds. George Bermann & Petros Mavroidis, (Cambridge: Cambridge University Press, 2006).

[51] Appellate Body Report, *EC-Asbestos, supra,* footnote 6, para. 67

[52] *Ibid.*

[53] Panel Report, *European Communities – Trade Description of Sardines ("EC-Sardines"),* WT/DS231/R, adopted 29 May 2002, para 7.40, 7.41.

[54] Appellate Body Report, *European Communities – Trade Description of Sardines ("EC-Sardines"),* WT/DS231/AB/R, adopted 26 September 2002, para 191.

[55] Panel Report, *European Communities- Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs (EC-Trademarks and Geographical Indications),* WT/DS174/R, adopted 15 March 2005, para 7.448.

characteristic"[56] and that consequently any document that outlines the contents of a label, is outlining a product characteristic.[57]

Despite the relative consistency of the treatment of labelling in the WTO, ambiguity and unresolved questions may increase as governments continue to resort to measures aimed at managing climate change. Labels can be voluntary or mandatory, along the same lines as the distinction maintained in the TBT Agreement between mandatory and voluntary measures. Traditionally, voluntary labels were not considered to be governed by the GATT/WTO, which focuses on mandatory governmental actions. But the TBT Agreement contains a Code of Good Practices on voluntary standards to be (voluntarily) accepted by standardizing bodies. The Code contains comparable provisions to those applicable to technical regulations on trade. If the use of voluntary labels provides preferential market access to domestic like products, they could be considered more restrictive than necessary or as providing less favourable treatment contrary to article III.

Many national GHG programmes may rely, *inter alia*, on labelling regulations. Efficiency labels for manufacturing equipment (e.g., motors) are often used to inform the consumer on the efficiency levels of different products. Jurisdictions in which they are used include Canada, the EU, and the United States. GHG labels indicating the level of GHGs emitted during the production process have not been implemented so far in any country. Nonetheless, voluntary GHG labelling schemes are gaining support. For example, the Carbon Trust is looking to publish a standard for the measurement of the carbon emissions in any product or service and to set up The Carbon Label Company to enable quality carbon labelling programmes.

From an economic perspective, product labels play an important part in conveying information to consumers. To some degree, they may be seen as a substitute for regulation aimed directly at determining the ingredients of a product, its characteristics, its performance and the manner in which it is made. If information contained in labels affects consumer preferences, it may also affect the conditions of competition in the market. Over time, this could imply changes in the legal determination of likeness. In short, from an economic perspective at least two reasons why labelling matters is that it can, in some circumstances, substitute for more intrusive and probably more costly policy intervention, and it can also affect competition in the market. However, because labels can be false or misleading, the legal regime for labelling is clearly important. Legal arrangements also matter in ensuring that labelling does not become an unwarranted barrier to trade.

C. INTERNATIONAL STANDARDS[58]

1. The TBT encourages harmonization of national standards

The TBT Agreement encourages Members to harmonize national technical standards with existing international standards, with a view to reducing trade costs. The presumption that national standards should be based on internationally recognized standards is consistent with efforts to reduce trade costs. Article 2.4 requires that Members use relevant international standards, "or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued...".This provision was interpreted to mean that international standards should be "used as the principal constituent or fundamental principle for the purpose of enacting the technical regulation"[59]. Furthermore, one standard cannot be the "basis" for another if the two are

[56] *Ibid.*, para. 7.449.

[57] *Ibid.*, para 7.451.

[58] Also relevant is how to deal with private standards - those that may be set up by the industry itself – can they be attributed to their local states? WTO law is not clear on this question. This paper does not address the important issue of private standards.

[59] Appellate Body Report, *EC-Sardines, supra,* footnote 60, para. 243.

contradictory.[60] Notwithstanding the preference for international standards, nothing in the TBT Agreement prevents individual Members from adopting a more stringent standard than that set out in a relevant international standard.[61]

2. Presumption of WTO compatibility of the national regulation complying with an existing international standard

Importantly, the TBT Agreement provides that a national technical regulation that complies with an existing international standard is presumed to be consistent with the TBT Agreement. This presumption can be very useful in the context of international coherence and governance, but a difficulty arises from the fact that there is no comprehensive definition of what constitutes an "international standard".

Conscious of the potential importance of such international standards negotiated outside the WTO, Members adopted, in 2000, the "Decision of the Committee on Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement"[62]. This decision provides principles and procedures that should be observed when international standards are elaborated. These include the need to ensure that the forum where such international standards are negotiated provides transparency, openness, impartiality, consensus, effectiveness, relevance, and coherence. Consideration of the concerns of developing countries is also called for. Such criteria should be taken into account when interpreting and applying the provisions of Article 2.4 and 2.5 of the TBT Agreement.

In *EC- Sardines*, the European Communities argued that only standards adopted by consensus may qualify as "relevant international standards". The argument, relating to the interpretation of the definition of "standard", is rooted in Annex 1 of the TBT Agreement[63], which simply refers to a document "approved by a recognized body," without specifying the need for consensus. In addition, an explanatory note to this definition adds the following two sentences: "Standards prepared by the international standardization community are based on consensus. This Agreement covers also documents that are not based on consensus." The Appellate Body accepted the panel's interpretation that the latter sentence serves to include within the definition of an international standard documents that are not based on consensus.[64] One possible interpretation of this ruling is that in a relevant forum, a sub-group of the WTO membership could arguably develop climate change-related international standards, all of which could benefit from the WTO presumption of compatibility even if the cumulative operation of a multitude of standards would not be environmentally effective, economically efficient or appropriate in terms of the development objectives of developing countries.

IV. SUBSIDIES

A. THE TYPES OF SUBSIDIES IN CLIMATE CHANGE POLICY

So far, we have focused on taxes and regulations that are likely to have competitiveness implications by raising costs to producers. However, governments may also choose to encourage GHG mitigation through subsidies. Policies such as direct tax reductions and concessionary financial support (loans and grants) seek to influence the cost-effectiveness of technical actions. Subsidies can

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[60] *Ibid*., para. 248.

[61] See for example: Appellate Body Report, *EC-Sardines, supra*, footnote 60, paras. 306-309; Appellate Body Report, *European Communities –Measures Concerning Meat and Meat Products ("EC-Hormones")*, WT/DS26, 48/AB/R, adopted 16 January 1998, paras. 159-173.

[62] G/TBT/9 13 November 2000

[63] It should be noted here that standards are defined as voluntary in the TBT Agreement, whereas technical regulations are mandatory.

[64] Appellate Body Report, *EC-Sardines, supra*, footnote 60, para. 222.

focus on one or several sectors, depending on the subsidy base. As discussed in the previous two sections, subsidies can also take the form of direct tax rebates upon exportation.

In general, subsidies are performance-oriented, aiming at energy savings or energy intensity improvement goals. Policies formulated in this way do not mandate specific industrial action, but shape economic incentives for energy efficiency and/or GHG emission reductions. Governments typically use subsidies as a "carrot" to induce reduced GHG emissions. In some cases, however, they may be tied to energy saving efforts such as achieving a sectoral energy or GHG emission targets, or to energy efficient investments.

Concessionary financial support (or tax reductions) can also be technology-prescriptive as in the case of equipment-specific subsidies, or management-prescriptive as is the case of subsidized audits. These subsidies have lower financial risks and reduce obstacles to industry investments in new or additional technologies. For example, in some cases, energy efficiency or GHG emission reduction investments can be deducted from the taxable base of companies. In others cases, investments are given faster depreciation schedules, *de facto* reducing the company's tax liability.

Direct financial compensation can also be made available for companies suffering a loss of competitiveness as a result of a new climate policy.[65] Direct costs could be mitigated through the recycling of revenues in the case of permit auctions, or through the distribution of freely allocated permits.[66] But beyond direct costs, governments could choose to compensate for the indirect costs of the cap and trade system (CATS – e.g. electricity price increase because of a cap on this sector's GHG emissions).[67]

A government could also subsidize certain producers indirectly by softening the regulatory impact of an emissions trading scheme for sectors exposed to carbon leakage. One route would be to lower the level of effort to reduce GHG emissions.

A final point worth stating here is that the discussion of subsidies in this context does not need to make a distinction between the abatement of carbon emissions and climate change adaptation (adjusting to a specific level of emissions). This is because similar measures can be used for both purposes and the WTO treatment of subsidies, at least so far, is not sensitive to the distinction.

B. SUBSIDIES IN THE WTO

At one extreme, subsidies could be defined as any price-based or regulatory intervention that changes relative costs or returns in the market to the advantage of a subset of producers or consumers.

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[65] In the case where subsidies are used to mitigate the competitiveness effects of climate change policies, they could be provided up to a baseline (see Z.X Zhang, 'Greenhouse-gas Emissions Trading and the World Trading System', in *Inter-Linkages: The Kyoto Protocol and the International Trade and Investment Regimes*, eds. W.B. Chambers, Tokyo: United Nations University Press, 2001) or as a one-time subsidy to deal with the 'first shock' of meeting emission reduction obligations (L. Assuncaõ, and Zhang, Z.X., 'Domestic climate policies and the WTO', *United Nations Conference on Trade and Development Discussion Paper* No. 164, Geneva: UNCTAD, November 2002, p.5). Van Hasselt, Harro and Frank Biermann, 'European emissions trading and the international competitiveness of the energy-intensive industries: a legal and political evaluation of possible supporting measures', *Energy Policy* Vol. 35, No.1, (2007): 497-506.

[66] Beyond the treatment of existing installations, the allocation mode is also an important factor for investment decisions – both to open new or increase existing capacity and to close installations.

[67] A potential downside to the use of this measure is that such a system could reward laggards, in fact subsidising their lack of GHG improvements, and maintain inefficient production processes on-line. This requires coupling the funding with emission reduction efforts, even though in principle, emission reductions should occur if the GHG price signal is effective. See Julia Reinaud, 'Issues behind Competitiveness and Carbon Leakage – Focus on Heavy Industry', *IEA Information Paper*, Paris: IEA/OECD, 2008, available online at: http://www.iea.org/textbase/papers/2008/Competitiveness_and_Carbon_Leakage.pdf (June 2010).

Under this definition, one economic agent's subsidy, implicitly or otherwise, is another's tax, on account of the redistributive consequences of the intervention. Although some of the instruments and targets used in climate change policy arguably approach this broadly defined subsidy frontier, subsidy provisions are more narrowly drawn in the WTO, as is the discussion above of climate-related subsidies.

Under WTO rules, subsidies are not subject to the same disciplines as regulations governed by the national treatment obligations on like products. GATT Article III:8(b) states that its provisions "shall not prevent the payment of subsidies exclusively to domestic producers...". Subsidies are rather governed by two basic sets of disciplines -- those included in the Agreement on Subsidies and Countervailing Measures (SCM Agreement) and those specific to agricultural products in the Agreement on Agriculture. Subsidies to firms (or sectors) are not necessarily prohibited; it all depends on their operating content.

1. Subsidies under the SCM Agreement

The SCM Agreement contains disciplines for two main types of subsidies -- actionable subsidies and prohibited subsidies. An actionable subsidy may be countervailed (see below), or ruled illegal in a dispute if it causes adverse effects (serious prejudice, injury, nullification or impairment) to the interests of another Member. A prohibited subsidy is one that is contingent upon export performance (export subsidies) or upon the use of domestic rather than imported products in production (domestic content requirements). A prohibited subsidy may be challenged in dispute settlement or it may be countervailed.

(a) Definition of subsidies

Article 1 of the SCM Agreement defines a subsidy as a "financial contribution" by a "government or any public body" that confers a "benefit". In addition, a subsidy must be deemed "specific" to be actionable or prohibited.

The Agreement identifies four types of financial contributions -- a direct transfer of funds or potential direct transfer of funds or liabilities, foregone government revenue, governmental provision of goods or services or purchase of goods, and the creation of a funding mechanism. In addition, the Agreement regulates the provision of income or price support. In either case, the measure must confer a benefit in order to constitute a subsidy, and WTO case law has made clear that the existence of benefit must be determined by reference to the market.

Climate change related governmental support fitting within the definition under Article 1 of the SCM Agreement could be legally challenged if considered prohibited (that is, if they are export or local-content type subsidies), or on the grounds of their adverse effects. They may also be countervailed if they are the source of injury to a domestic industry in another jurisdiction.

One issue that has received some attention is whether the free allocation of GHG permits might constitute a subsidy within the meaning of the SCM Agreement. Such allocations might be challenged if they could be shown to cause adverse effects to the interests of another Member. If we assume the GHG permits allocated free of charge could be subsequently traded against financial remuneration, some have argued that this could be treated as a "financial contribution" in the form of a "direct transfer of funds" within the meaning of sub-paragraph (i), "revenue ... foregone" within the meaning of sub-paragraph (ii), or the provision of a "good" within the meaning of sub-paragraph (iii). As to the "benefit", one might argue that the free receipt of an instrument with financial value, or foregone government revenue, necessarily confers a benefit by reference to the market. One might also argue that free allocation represents revenue forgone and thus a benefit to the company receiving the allocation.

(b) Actionable subsidies

In order to be actionable in the WTO, a subsidy must be specific. Legally, a subsidy is *specific* if access is explicitly limited to certain enterprises, industries or regions; if, however, a subsidy is widely available in the economy it will not be considered specific.[68] A subsidy is not specific if eligibility is limited by objective criteria or conditions that do not favor certain enterprises over others, are economic in nature, and horizontal in application. A subsidy, which is not on its face specific, may nevertheless be found to be specific in fact, based on the consideration of criteria such as limited, disproportionate or predominant use of the subsidy in practice.

Whether subsidies aimed at addressing climate change would be deemed specific is a matter upon which there is no WTO case law to assist us, but it is fundamental. Important elements of such a determination would be whether climate change considerations can be viewed as economic in nature and can be applied on the basis of objective criteria that do not favour certain enterprises over others. If so, such subsidies would not be specific and therefore would not be covered by the SCM Agreement.

For a specific subsidy to be successfully challenged on the grounds that it causes adverse effects on the interests of another Member, it must cause: i) injury to the domestic industry of another Member; or ii) nullification or impairment of benefits, or iii) serious prejudice to the interests of another Member. In short, to be actionable through dispute settlement (as opposed to being potentially subject to countervailing duties), a subsidy must be specific and cause adverse effects to the interests of another Member. A causal relationship must be established between the subsidy and the adverse effects.

The identification of adverse effects is complex, and depends on the facts of a given case. Article 6.3 of the SCM Agreement describes various scenarios in which serious prejudice might arise. For example, a Member could invoke Article 6.3(a) to claim that its exports were "displace[d] or impede[d]" from the market of the subsidizing Member by virtue of a competitive disadvantage *vis-à-vis* the subsidized enterprises or industries. In doing so, the complaining Member would need to demonstrate that its exports would have had a larger share of the market in the subsidizing Member were it not for the subsidy. In the climate change context, whether a subsidy can be successfully challenged depends upon its trade effects and not upon the purposes for which it is provided. The fact that a subsidy advances an environmental objective, however important, is not legally relevant under the SCM Agreement.

In the context of climate change related subsidies, the mere fact that GHG permits are provided free of charge is not *per se* inconsistent with the SCM Agreement. In order to challenge subsidization through the free allocation of permits, other Members would need to demonstrate that such subsidization causes "adverse effects" to their interests. At this stage, it would appear to be very difficult to determine how such alleged subsidies could actually influence prices in GHG markets. This is in part because GHG prices are typically volatile in carbon markets. Until criteria for trading emissions licenses are stabilized under existing and future GHG trading systems, determining the effects of such alleged subsidies -- let alone whether they cause "adverse" effects -- would pose serious challenges. As noted earlier, a government that deems free allocation a subsidy may choose to impose countervailing duties on imported products benefiting from such an allocation although the

[68] A subsidy ceases to be specific if it is sufficiently broadly available throughout an economy as not to benefit a particular limited group of producers of certain products. See Panel Report, *United States – Subsidies on Upland Cotton ("US-Upland Cotton")*, WT/DS267/R, adopted 8 September 2004, para. 7.1142. However, the availability of a subsidy which is limited by the inherent characteristics of the good cannot be considered to have been limited by 'objective criteria. See Panel Report, *United States – Final Dumping Determination on Softwood Lumber from Canada ("US-Softwood Lumber V")*, WT/DS264/R, adopted 13 April 2004, para 7.116, footnote 179.

imposition of such CVD measures may be challenged by an exporting country under the WTO dispute settlement system.

(c) Prohibited subsidies

As noted above, the SCM Agreement deems the following subsidies to be "prohibited": those contingents, in law or in fact, upon export performance; and those contingents upon the use of domestic over imported goods. Prohibited subsidies are presumed to be specific and are subject to an expedited timetable in the case of a dispute, and if it is found that the subsidy is indeed prohibited, it must be immediately withdrawn.

Even if the free allocation of permits were considered specific subsidies, some element of linkage to exportation or the use of domestic inputs would be needed in order for such subsidies to be prohibited. In the context of climate change, some authors[69] have argued that free allowances based on the level of trade (trade sensitive allowances) can be considered to be export-related and thus constitute a *de jure* or *de facto* export subsidy.

(d) Green subsidies in SCM?

Article 8 of the SCM Agreement defines certain subsidies as non-actionable, including specific types of support to promote adaptation of existing facilities to new environmental requirements. However, these exceptions in the SCM Agreement lapsed in 1 January 2000.

Some have suggested that based on the recent case law one could argue that the exceptions of GATT Article XX might be invoked to justify a violation of the SCM Agreement. It was once debated by the Appellate Body, arguendo, whether an Article XX justification might be applicable to violations of the Antidumping Agreement.[70] Such a possibility could become relevant when dealing with the free allocation of permits (if deemed a subsidy – see below) or other types of subsidies that could be considered climate change friendly or efficient if such subsidies were considered to cause adverse effects or if they appear *de jure* or *de facto* prohibited subsidies under the SCM Agreement. Such a broad exception would be subject to the type of Article XX analysis referred to above in relation to the effects of measures and the possible availability of alternatives. A determination of the appropriate level of a subsidy would also be required. These are not issues that have been explored nor brought before a dispute panel.

2. Subsidies under the Agreement on Agriculture

An overall goal of the Agreement on Agriculture is to integrate agricultural products into mainstream WTO rules, including the SCM Agreement. Agricultural subsidies -- both production and export subsidies -- were first subject to specific reduction commitments in the Uruguay Round.[71] Domestic support measures which have, at most, a minimal impact on trade ("green box" policies) are excluded from reduction commitments. The other policies provided on either a product-specific or non-product-specific basis constitute the Aggregate Measurement of Support (the AMS) and, along with export subsidies, were to be reduced during the implementation period set out in the Uruguay Round.

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[69] Warren H. Maruyama, 'Trade and WTO aspects of U.S. climate change legislation: cap-and-trade or carbon tax? A study for the fair trade centre', (2010); also V. Boyd-Wells, D. Feaver, W. MacGoldrick, 'Is Australia's EAP a Prohibited Export Subsidy?', *Journal of World Trade*, Vol. 44, No. 2, (2010) p. 319.

[70] See Appellate Body Report, *US-Shrimp (Thailand), supra,* footnote 53, and Appellate Body Report, *United States– Customs Bond Directive, supra,* footnote 53, p. *117 et seq.* where the application of Article XX to the AD Agreement was discussed. See also the Appellate Body Report, *China – Audiovisual Services, supra,* footnote 5, paras. 205-233 where Article XX was applied to the provisions of China's Protocol of accession.

[71] The Agreement on Agriculture does not define a subsidy and the case law has used the SCM Agreement definition.

One provision in the Agreement on Agriculture worthy of note is the Article 9:1(c) definition of the following export subsidy:

> "[P]ayments on the export of an agricultural product that are financed by virtue of governmental action, whether or not a charge on the public account is involved, including payments that are financed from the proceeds of a levy imposed on the agricultural product concerned or on an agricultural product from which the exported product is derived."

This provision was interpreted in *EC – Sugar*[72] to include subsidies for which there is no governmental disbursement of funds but where governmental regulations allow or even favour the provision of subsidies by producer groups -- for instance, doubled with regulatory import protection and other protective governmental actions, as was the case for the EU sugar regime challenged in the above-mentioned case. It may be worth considering whether such kinds of regulatory subsidies could be introduced to deal with climate change or whether scheduled ceilings for accepted levels of subsidies could be used, in the context of climate change, at least during a transitory period

3. Countervailing duties against industrial (SCM) or agriculture subsidies (AoA)

Countervailing duties (CVDs) are a form of border adjustment listed in Article II.2. In order to impose a CVD, a subsidy has to be specific and it must be shown that subsidized imports have caused injury to a domestic industry. Injury to domestic producers is understood to mean material injury, a threat of material injury or the material retardation of the establishment of a domestic industry. A determination of injury must be based on positive evidence.

When examining the impact of a subsidy on a domestic industry, all relevant economic factors shall be evaluated. These factors include employment, market share, profits, sales, productivity and wages. Therefore to the extent that an importing Member considers that the climate change related actions of an exporting country constitute a subsidy, the importing Member can protect itself and impose a border measure in the form of a CVD. The determination of the level of such a measure can take into account competitiveness-related criteria, such as loss of employment and productivity. On the other hand, if the importing Member is invoking Article XX, these elements do not fall within the specified public policy objectives.

V. OTHER AREAS OF WTO RULES RELEVANT TO CLIMATE CHANGE AND TRADE INTERFACE

As stated in the Introduction, we have limited our analysis to only some WTO disciplines relevant to climate change policies. There are many others, including such matters as preferential arrangements under regional trade agreements, rules of origin, government procurement – and to what extent climate change considerations can condition market access as regulated by those agreements. Specific agreements such as the Customs Valuation Agreement and the Antidumping Agreement could also be called into question. The same may be argued for the TRIMS Agreement in relation to climate change-related investment measures. The rules on trade in services could also become relevant as they prohibit discrimination among foreign service providers. The General Agreement on Trade in Services (GATS) rules on investment (mode 3), as well as those on financial services, could also matter in the context of national and regional carbon trading schemes. The WTO Trade-Related Intellectual Property Rights Agreement (TRIPS) is also relevant for the climate change debate. Intellectual property right issues – including patents and compulsory licenses – are closely linked to issues of technological progress and innovation. These issues are central to ongoing climate change discussions, but we have not analyzed them here.

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[72] Appellate Body Report, *European Communities – Export Subsidies on Sugar ("EC-Export Subsidies on Sugar")*, WT/DS265/AB/R, WT/DS266/AB/R, WT/DS283/AB/R, adopted 28 April 2005.

A particular example of climate change policy which could raise questions within the scope of the GATS is the EU Emission Trading Scheme (ETS) or cap-and-trade scheme. As the cornerstone of the EU's climate change policies, the ETS was designed to ensure that states fulfil their commitment to reduce GHG emissions in a cost-effective manner.[73] The idea is based on the premise that overall GHG emissions are reduced to a set amount (capped) and are thus divided among the parties in the form of certificates or allowances. Through creating transferable units, the ETS established a system where parties had an economic incentive to buy and sell emissions allowances, creating the first international trading system for GHG emissions. Despite the inclusion of provisions in the Kyoto Protocol and the UNFCCC to remedy negative effects on international trade[74], there are still several unanswered questions with regard to WTO compatibility.

One of the primary questions posed when discussing compatibility with WTO rules is whether trade in allowances can be considered trade in products or in services, according to the WTO definition. One approach might be to place them under the category of "financial assets," as defined in the Annex to GATS.[75]

If the ETS is thus placed under the category of "financial assets", then the question becomes whether ETS rules are GATS compliant. Primarily, under GATS, the EU members have used the Understanding on Commitments in Financial Services to schedule their obligations. Under the 'market access restrictions' heading, Members (those who accepted the Understanding without reservations) are obliged to allow their residents to purchase, in the territory of another Member, financial services as outlined in the Annex. Further, by virtue of the national treatment obligation, members must allow non-residents also to provide these financial services within their territory. They must also remove effects of non-discriminatory measures that limit financial service suppliers from providing financial services in their territory. The EU Member States have also made market access commitments with regard to financial services under Mode 1 (cross border supply) and Mode 2 (consumption abroad). Since the ETS does not require Members to place market access restrictions on trading in these certificates *per se*, there should, in principle, be coherence between the EU's obligations under GATS and the ETS. In any case, GATS Aricle XIV may be applicable in justifying any violations of commitments based on environmental considerations.[76]

Another aspect that must be considered is the investment dimension of GATS, based on mode 3 (commercial presence), relating to foreign direct investment. GATS contains a prohibition on imposing local content requirements that adversely affect competitive conditions for like foreign services and service suppliers. The Marrakesh Accords grant host states the right to determine whether a Clean Development Mechanism (CDM), for instance, contributes to sustainable development and thus allows Members to reject foreign projects based on local content requirements which could lead to a violation under GATS. The question remains whether such a measure could be justified under GATS Article XIV for environmental reasons. [77]

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[73] The international regime for emission trading certificates was created initially under the Kyoto Protocol, which outlined the general principles upon which the regime should function, and the 2001 Marrakesh Accords which include more detailed rules specific to the system. The rules contained in the Marrakesh Accords were later adopted by the parties to the UNFCCC in the COP 7 meeting in 2001.

[74] Kyoto Protocol: 'the Parties included in Annex I shall strive to implement policies and measures under this article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade…' and the UNFCC: 'measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade', at Art 3, para 5.

[75] E. Vranes, 'Climate Change and the WTO: EU Emission Trading and the WTO Disciplines on Trade in Goods, Services and Investment Protection', *Journal of World Trade*, vol.43, no. 4 (2009), p. 719. See Annex on Financial Services, Art 5, paras (x)-(xiv).

[76] *Ibid*., p.724

[77] *Ibid*., p.732

Another point of potential conflict is the fact that the Marrakesh Accords prohibit a private party from transferring and acquiring Certified Emissions Reductions (CERs) if their home country is ineligible to use them under the Kyoto Protocol. Such a prohibition could trigger a GATS violation under Mode 3 based on discrimination against foreign services or service suppliers. Nevertheless, the success of this type of complaint is purely theoretical because the complaint would have to be instituted by the home country which had initially failed to comply with the Kyoto obligations and thus had become ineligible for the CER use, giving rise to procedural obligations such as *abus de droit.*[78]

With regard to the relationship between the TRIPS Agreement and climate change policies, the dissemination of climate change technologies, known as Environmentally Sound Technologies (ESTs), is at the core of the climate change debate. The challenges of technology transfer have been addressed within the framework of climate change through two proposed approaches: "push factors" (technology transfer by governments of developed countries) and "pull factors" (conditions in developing countries favourable to attracting technology through trade and investments). TRIPS also contains these approaches; the objectives of the Agreement, as outlined in Article 7, typically set the stage for pull factors through encouraging the transfer and dissemination of technology, while the Agreement itself contains provisions that provide for push factors such as patent protection standards. Thus to a certain degree there is overall coherence in the aims sought by the TRIPS Agreement and the climate change policies already on the table.[79]

Nevertheless, in the implementation of "pull factors" for instance, Article 66.2 of the TRIPS Agreement requires developed countries to provide incentives for technology transfer, but has only led to a few technical programmes with the aim of protecting patent rights and an obligation for developed countries to submit yearly reports on their efforts. It is probable that firms are more likely to invest in or export their patented products to countries with strong intellectual property regimes. Thus, it may be argued that as developing countries are now party to the TRIPS Agreement and cannot derogate from minimum standards of protection, the Agreement has actually encouraged the technology transfer of ESTs from developed to middle income and large developing countries, where carbon emissions tend to be increasing. However, this is not the case with smaller and least developing countries who "are not responsive to patent rights"[80]. Although licensing is provided for within TRIPS and supported by a strong regime, the question of dissemination of ESTs still falls prey to whether domestic firms in developing countries can afford to purchase these patented technologies.

More specifically on the topic of compulsory licensing there has already been evidence, in the context of environmental protection, of patent holders refusing to license patented technologies to developing countries out of fear of competition. There is concern that the practice of refusing licensing will continue to grow as the climate change regime evolves. This is simply because as carbon emissions increase and as states continue to seek long term solutions to these increases, there will be more incentive for firms to invest in EST's and they will thus seek to maintain their competitive advantage. The question still remains how effective compulsory licensing under the TRIPS Agreement will become in ensuring the transfer of technology, taking into consideration the conditions that must be met under Article 31 of the TRIPS Agreement. There are several questions that may arise, including whether the refusal to license is in of itself sufficient ground for compulsory licensing (taking into account the exclusive rights granted to patent holders in Article 28.1 and 28.2) and whether, under Article 31(f), a developed country may impose compulsory licensing to supply an export market in a developing country or if the waivers granted in the Doha Declaration on Public Health would be applicable.

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[78] *Ibid*.

[79] C. Hutchinson, 'Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?', *University of Ottawa Law and Technology Journal*, 2006, p. 591. Available at http://ssrn.com/abstract=1019365 (last accessed, October 20, 2010).

[80] *Ibid*., p. 528.

In general, the climate change discussions do not appear to pose many questions of legal conformity with the TRIPS Agreement, in the same manner that climate change policies have the potential of violating other WTO rules. The design of the TRIPS Agreement includes flexibilities that allow countries to encourage the transfer and dissemination of technology without violating its provisions. However, as applied, the provisions of the TRIPS Agreement do not necessarily encourage solutions within the climate change framework, particularly since it sets minimum standards and thus states are often not obliged to take decisive action in promoting the dissemination of ESTs. Although it has been argued that compulsory licensing could be used in the context of climate-related technology transfer in order to soften the impact of patents, more analysis would be required in order to clarify whether existing TRIPS provisions are appropriate or whether a waiver would be required.

VI. CONCLUSIONS

Policies to mitigate climate change are not costless. They inevitably have an impact on relative costs and returns among economic activities at the national and international level. The size of these effects depends on a range of factors, including the relative level of mitigation efforts among countries, the degree of uniformity of different jurisdictions in the approach to combating climate change, the efficiency of the measures adopted, and the contribution of innovation and technological discovery. All these elements feed into the competitiveness consequences of climate change policies. The focus of this paper has been on the nature of the response to these consequences on the part of governments, and the implications of that response for the interaction between the climate change policy and trade policy.

Different levels and types of climate change mitigation effort among countries have direct environmental consequences because of leakage. The international mobility of resources and the presence of trade mean that carbon constraints in one country can lead to the relocation of economic activity to another country where carbon constraints are less costly. If countries were to accept carbon emission constraints at the national level, sectoral leakage could be neutralized through adjustments in carbon constraints anywhere else in the economy chosen by a government. That would mean that the leakage problem was addressed from a purely environmental perspective, but in the context of inter-sectoral resource shifts among countries. The only way to ensure the absence of inter-sectoral consequences would be with an internationally uniform climate mitigation policy such as a carbon tax or a unified carbon price based on auctioned emission permits. Neither of these policies are likely to see the light of day.

It is against this reality that consideration of the competitiveness consequences of climate change mitigation policies is inevitable. Carbon leakage and competitiveness concerns appear inseparable in practical terms. One can think of a spectrum of alternative ways of reacting to this reality. The view at one end of the spectrum is simply to recognize that there will be competitiveness effects as the global community faces up to climate change. Once the externality is internalized, it is just a matter of comparative advantage - economic activities shift location across frontiers all the time as a result of changes in relative efficiency. That is the history of economic progress in an internationalized economy. At the other end of the spectrum is the view that climate change policies should result in no changes in relative levels of competitiveness. If national climate change mitigation efforts have different sectoral impacts, these should be accounted for in trade policy.

The essential question is where governments might settle on this spectrum. The optimum spot would be one that maximizes climate change policy effectiveness, minimizes economic costs and minimizes international friction through the attainment of a stable understanding of how trade policy and climate change policy should interact. It is the last of these issues upon which the paper primarily focuses.

In broad terms, two approaches are available for addressing the competitiveness consequences of climate change policy from a pure competitiveness perspective. First, governments may attempt to raise the cost of imports through adjustments at the border to neutralize additional domestic production costs incurred by sectors as a result of GHG emission reduction policies. Second, they may use subsidies to lessen the competitiveness consequences of carbon constraint costs, thus relieving pressure on border adjustment measures. In practice, governments might resort to a combination of these approaches, and each of them has been analyzed in this paper.

The ability to compare alternatives and outcomes is at the heart of any effort to shape policies that address regime differences. Comparisons among policies are also central to legal determinations of WTO-consistency. One challenge in thinking about a trade policy context for policies aimed at fixing climate is that the latter are frequently directed at the plant or firm level in given sectors. Except where the base for a climate change mitigation policy is consumption and a product (e.g. a tax on fuel consumption), this complicates determinations in the WTO because in that context most of the measures affect products, not production entities or facilities.

A related problem is the need for comparability between different kinds of measures deployed to reduce GHG emissions. If one country prefers regulation to taxation or cap-and-trade, for example, some notion of equivalence is required. Two kinds of equivalence are relevant. One is "comparable effectiveness", which looks at the environmental side of the equation. Governments are virtually certain to deploy different means of mitigating GHG emissions and there is a range of circumstances where policymakers need to know the relative effectiveness of the alternatives. The other kind of equivalence relates to competitiveness and is the cost equivalence of alternative GHG emission control policies. These may be determined in some instances through price or price-equivalent differences attributable to given climate change policies.

Given the fact that governments rely on price and non-price interventions, as well as different kinds of non-price intervention, methodologies are required to make comparisons. This requires operating assumptions and will never be perfect. This is regardless, for example, of whether the effort to make a comparison is between a regulatory intervention and a market-revealed carbon price generated through a cap and trade regime, or is between distinct non-price policies.

Another complication in international comparisons of climate policy costs arises from the fact that a decision is necessary as to the point in the production process from which the presence or absence of carbon constraints is calculated. At one end of the spectrum, the calculation could have a general equilibrium character and calculate the entire carbon footprint associated with a product. This requires an assessment of all prior stage activities leading to the end-stage production process. At the other end, the assessment could be made only on the emissions immediately associated with production of the final good.

Potential clearly exists for friction that could both weaken climate change efforts and undermine the trading system. This danger could be minimized if governments were to find ways of identifying mutually beneficial trade-offs as they react to the need to avoid climate change. But deeper cooperation would be needed than what we have so far witnessed. A first approach could be to reduce uncertainty by systematically identifying where the potential clash points are between climate change and trade policy, and then considering how to manage them.

A more profound analysis is needed of how to manage both environmental degradation and sustainable development. In terms of the impact of trade policy and the WTO rules on this relationship, it would be useful to explore further the interaction between potential border adjustment measures and subsidies, and the way they interact. More fundamentally, against the background of a constructive interpretation of the principles of sustainable development and common but differentiated responsibility, we need to agree how far competitiveness considerations should shape both climate change policy and trade policy.

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