

Thinking Ahead on International Trade (TAIT) – 2nd Conference
Climate Change, Trade and Competitiveness: Issues for the WTO

The interface between the trade and climate change regimes: Scoping the issue¹

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I. INTRODUCTION

As national and international policies are developed to mitigate climate change, concern is growing in some quarters about the compatibility of climate change regimes with international trade rules. Almost certainly, the greater the degree of international agreement on climate change policies, the less potential friction there should be with trade policy. Nevertheless, even with international agreement on rights, obligations and the allocation of responsibilities among nations for addressing climate change, competitiveness concerns are likely to arise. The cost implications of carbon constraining policies may provoke trade frictions that translate into deliberative and legal issues for the WTO. Moreover, even with a fully specified international agreement on climate change, including in respect of the interface between climate change and trade policy, there would always be the possibility of a legal challenge in the WTO if one party considered that its trade interests were being prejudiced by the actions of another. And then the WTO would have to decide whether the justification invoked was consistent with the WTO.

This paper analyzes the ways these problems might manifest themselves. Before entering into the detailed policy areas involved, we consider briefly some of the fundamental issues arising at the interface between climate change policy and trade policy.

A. THE LEVEL OF APPLICATION OF MEASURES OFTEN DIFFERS BETWEEN CLIMATE CHANGE AND TRADE REGIMES

A first point relates to inter-regime coherence, which can be a challenge because of the way policy is articulated. This is essentially about the target, the base or the level of aggregation at which a policy aims, and it may differ between UNFCCC and WTO obligations, as well as at the national level. Table 1 sums up the issue.

Table 1: Different levels of application of climate change mitigation obligations

UNFCCC compliance	Domestic climate policies ¹	WTO provisions
National level	National level	Product
	Sector	Process (sometimes only)
	Firms	Firms
	Installation	National policies
	Product or process	Standards

It is not difficult to see how a country might be in conformity with UNFCCC, but face issues with its trading partners in regard to sector-specific CO₂ reduction policies. Or a domestic policy may be set at a sectoral level, while WTO provisions operate at the national level. Such situations raise challenges when it comes to defining comparable action and comparable effect. A large number of issues may arise since the relevant WTO provisions are concerned with products and allow for product-based export rebates. Climate change policies, by contrast, generally address process and

¹ In terms of domestic policies, there is no ranking of policies

production methods, sectors, or installations, all of which targeting national level GHG emission reductions.

B. IN ADDRESSING CARBON LEAKAGE: DO WE WORRY ABOUT THE ENVIRONMENT, INTERNATIONAL COMPETITIVENESS, OR BOTH?

A second point relates to carbon leakage and the lens through which it is viewed. Environmental (GHG or CO₂) leakage focuses on the climate change implications of differential mitigation costs among nations on geographical patterns of investment, production and trade. If one country's emission controls induce producers to shift activities to a less constrained jurisdiction, this will invalidate or at least diminish the efforts of the first country. Emissions would not be reduced, but simply shifted to other national locations. The same outcome occurs if producers choose to source carbon-intensive inputs from less carbon-constrained jurisdictions. Mitigation costs will have been incurred without environmental benefits.

Carbon leakage arises when countries implement asymmetric climate policies at the international level. A related concern is that uneven carbon constraints would enhance the competitiveness and increase the market share and profits of non-carbon-constrained producers. A sector that is carbon constrained in one jurisdiction could expand in another.

While environmentalists might promote national targets as the most suitable medium for international cooperation, governments and producer interests find it harder to commit to emission reductions without insulating sectors from vulnerability and a competitive disadvantage. This distinction is important because of the risk that by associating sector- or even firm-level interests with the public policy imperative of avoiding unmanageable climate change, protectionist outcomes could become dominant. Standard Ricardian arguments about comparative advantage and the gains from trade are no less valid in the face of an environmental externality, provided the latter is addressed. The question is who should address it. In line with the UNFCCC principle of "common but differentiated responsibility and respective capabilities", and the WTO principle of "special and differential treatment", it is far from obvious that all nations should share equally in the burden of mitigating carbon emissions, whether at the national or sectoral level. Yet much of the competitiveness-driven carbon leakage discussion seems to be predicated on the notion that no international relative cost effects at the sectoral level should be permitted to result from climate change policy.

If the concern about carbon leakage were only environmental, countries' carbon constraint commitments (met with nationally defined targets) could be supplemented with additional actions to offset any environmental leakage arising from the relocation of economic activity. Governments could choose where in the economy to focus their efforts and there would be no need to define or control for sectoral impacts. This, of course, assumes that the countries concerned are committed to specific emission targets, the credibility of which would likely be enhanced by international commitment.

It is no doubt unrealistic to contemplate a world in which competitiveness concerns associated with climate change policy can be set aside. But a dominant focus on this aspect of what ultimately is an environmental challenge may compromise the effectiveness of efforts to address that challenge. These considerations emphasize the value of a shared vision of how to proceed in addressing climate change, and the premium attached to effective international cooperation. The greater the degree of constructive engagement internationally the less dominant will be the focus on competitiveness.

C. COMPARING DIVERSE POLICY APPROACHES IN TERMS OF THEIR EFFECTS

A third challenge, related in certain ways to the second, is how to render alternative national approaches to mitigating climate change comparable in order to ensure compatibility with certain WTO rules. In the absence of internationally harmonized policy approaches -- surely an unattainable objective -- how will comparisons be made in order to gauge the degree of equivalence of GHG mitigation efforts among countries? This difficulty is most acute in the context of a sectoral focus as compared to nationally defined targets that prescribe overall GHG emission limits. Climate change policies may involve price or non-price interventions -- including taxes, GHG permits or allowances, prescriptive regulation, economic (dis)incentives of one form or another, and subsidies.² Moreover, such measures can cover different emission sources, ranging from usage of equipment, to processes, facilities, companies and entire sectors. While these different approaches can all be evaluated in terms of their consequences for emission levels, such an evaluation is not straightforward. WTO rules on these types of regulations are not well developed and there is limited guidance from the jurisprudence.

Governments can emphasize different approaches to achieving greater harmony between their climate change policies and their international consequences, both in terms of environmental effectiveness and the economic fallout. They may choose to support their own industries in order to reduce their competitive disadvantage arising from carbon constraint policies. This could be done in different ways, such as through lower emission caps, fiscal subsidies, or the redistribution of tax liabilities. Alternatively, the authorities may choose to raise the costs of foreign suppliers in the home market if they are deemed to glean a competitive advantage through weaker mitigation policies. This could occur through carbon-related adjustments at the border, or the imposition of standards. Another approach is to provide support to foreign producers in the climate change field in order to elicit comparable GHG emission obligations. This might take the form, for example, of facilitating access to technology or (sectoral) GHG crediting. We do not analyze this last approach here, but it would doubtless be an important part of a successful international outcome.

D. ORGANIZATION OF THE PAPER

The paper is divided into three main sections. Section II examines the issues of carbon border adjustments, including in terms of both price and non-price measures, and international standards. Section III turns to subsidies. Both Section II and Section III will compare commonly deployed climate change policies with the relevant WTO provisions in order to identify where issues and tensions may arise. Section IV concludes.

II. BORDER ADJUSTMENTS

The issue of carbon leakage and competitive effects arising from the differential implementation of GHG policy constraints at the national level has triggered discussions and proposals on adjustment measures at the border. These border adjustments essentially address differing GHG mitigation costs by dealing explicitly with imports and exports, based on the cost of the climate policy. As will be discussed below, the design details of any particular border adjustment are also decisive in determining whether it is effective in addressing carbon leakage (Reinaud, 2008).

² Note that these policies are not mutually exclusive and that a country may use a mix of policy instruments.

In the climate change context, two types of 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 content of GHG emissions for all goods exported from a country), or compliance with certain other types of requirements (such as notification or reporting). Such measures may also apply to a subset of imported products. In the context of climate change actions, price-based border adjustments can take two main forms -- border tax adjustments (on imports and, less commonly, on exports) and mandatory carbon offset purchases (of GHG permits or allowances by importers), with or without rebates of GHG costs for exports.

A. WTO RULES

GATT regulates border adjustment measures. Article II of GATT provide that generally only tariffs should be imposed at the border of an importing Member. But Article II contains a list of other price-based measures that can be applied at the border, in addition to and independently from tariffs.³ These border adjustment measures include, notably, the application to imports of domestic taxes. Indeed, Article III allows a Member to impose a tax (Article III:2) or regulation (Article III:4) on imported like products similarly imposed on domestic like products. The Ad note to Article III explicitly allows the imposition of a tax or regulation upon importation at the border, even though such measures are to be deemed internal measures. Article XI, which prohibits quotas, recognizes that taxes can be collected at the border (border tax adjustments). The interpretation and application of GATT Article III and Article II of GATT can become very relevant in the context of climate change actions, notably border adjustments.

1. Basic obligations on national treatment and on border adjustments

Article III embodies a non-discrimination requirement in respect of all taxes and regulations applied to products. Foreign products may not be treated any less favourably than like national products.⁴ Nonetheless, different treatment is allowed under GATT rules so long as it does not lead to less favourable treatment of like products. The notions of "likeness" and "less favourable treatment" require further examination.

(a) Likeness

A determination of the likeness of two products depends on whether they "compete"⁵ in the market. The main criteria that have been used to make the relevant determination are: i) the physical characteristics of the products; ii) their end use; iii) consumer preferences (as measured by the substitutability of the products in the market); and iv) the tariff classification applied to each product. In the context of climate change debates one fundamental issue is whether two products can be differentiate and considered unlike based on criteria relating to GHG. For instance, would it be permissible to differentiate (and therefore treat differently) products based on: i) the level of CO₂ emitted during their production; ii) the level of CO₂ emitted by the industrial sector of such product;

³ Article II:2 also includes two other types of border (price) adjustment measures: : i) anti-dumping and anti-subsidy 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 imports alleged to have been subsidized and that result in injury. We discuss this situation in Section III of this paper.

⁴ This provision is similar to the non-discrimination requirement under GATT Article I, which requires that foreign products may not be treated less favourably than other 'like' foreign products.

⁵ Appellate Body Report, *EC - Asbestos*, WT/DS135/AB/R, (12 March 2001), para. 98

iii) the level of CO₂ emitted nationally by the exporting country; or iv) based on the CO₂ policies or actions of the exporting or importing Member?

(i) *non-product PPM criteria and GATT Articles II and III*

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). PPMs may be product-related or non-product-related. In contrast to a product-related PPM, a non-product-related PPM is one that is not physically incorporated in a product -- that is, there is nothing describing physically the product that is attributable to the PPM in question.⁶

Thus, GHGs emitted in the production process -- whether directly by the producer or indirectly by a prior stage producer of an input (such as electricity generation) -- would be considered not to affect the determination of likeness where an imported and domestic product compete in the relevant market. Thus under Article III, products are generally like regardless of how they have been produced. Therefore, any measure applied to an imported product on the basis of differences in non-product-related PPMs would be deemed to treat differently imported and domestic like products. By contrast, a product-related PPMs that affected the competitive relationship between an imported and a domestic product would confer non-likeness on the two products. The non-discrimination requirement of Article III does not apply to unlike products. 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 argued, however, that the above interpretation of Article III in relation to non-product-related PPMs may be called into question by the language of Article II.2(a), dealing with border adjustments, permitting 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." The wording of Article II:2(a) also refers to Article III.2, which says that imports "shall not be subject, directly or indirectly, to internal taxes or other internal charges of any of any kind in excess of those applied, directly or indirectly, to like domestic products." It is the references in these provisions to inputs into the final product used in whole or in part (Article II:2) and direct and indirect taxes or internal charges (Article III:2) that have been cited to support the idea that border adjustments may be permissible on non-incorporated PPMs, and therefore consistent with the national treatment provisions on like products.⁷ 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, as CO₂ is not incorporated in the imported product.

Even if border adjustments on non-incorporated PPMs were rules acceptable in a dispute settlement ruling on the basis of the above arguments, two points should be made. First, the Article II and Article III provisions mentioned in this context only refer to taxes and charges, and not to regulations. As climate change mitigation policies often rely on non-price regulations (standards) or on administrative GHG permit allocations, it is unclear what the practical scope of this would be.

⁶ Within the category of non-product-related PPMs a further distinction can be made between those that are linked directly to the production process itself and those that are more broadly based on social values such as the rights of workers. This distinction is not germane to the present discussion.

⁷ See Joost Pauwelyn, WTO and Climate Change <http://nicholas.duke.edu/institute/internationaltradelaw.pdf> at p.19-2; see also the excellent discussion on this matter in WTO-UNEP report on Trade and Climate Change at p. 98 and following.

Secondly, GATT and WTO jurisprudence⁸ has argued that any internal taxes or charges must ensure no less favourable treatment for imports in comparison to like domestic products. The calculation of precise border adjustment measures to meet this standard would be extremely difficult under Article III, and any simple averaging procedure⁹ would 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).

A different line of argument refers to the definition of adjustable taxes on the export side in the Agreement on Subsidies and Countervailing Measures (SCM Agreement). The suggestion is that the approach to defining acceptable tax remissions or rebates on exports in the SCM Agreement might tilt the argument in favour 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. In dealing with border adjustments on exports, the SCM Agreement and its Annexes focus on whether an input is consumed in the 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.¹⁰

Furthermore, the GATT *US-Superfund*¹¹ case seems to provide support for treating a tax on energy or CO₂ as eligible for border adjustment. The Panel in that case allowed the United States to impose a domestic tax on 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. Otherwise, this interpretation 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 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.¹²

This brief discussion of how likeness is treated with respect to product and process methods reveals a complicated and uncertain picture in the climate change context. Commentators have argued that the difficulties likely to be encountered in using Article III and Article II justifications for border adjustments in relation to differential carbon constraint policies argues for consideration of the public

⁸ Appellate Body Report, *Japan – Alcohol*, WT/DS75,84/AB/R, (17 February 1999) p 19-20, 24-25, 28. Appellate Body Report, *Korea – Alcohol*, WT/DS8,10,11/AB/R, (1 November 1996) paras. 119-120. Appellate Body Report, *Chile – Alcohol*, WT/DS87,110/AB/R, (12 January 2000) para. 60.

⁹ Panel Report, *US – Gasoline*, WT/DS2/R, (29 January 1996). *US – Customs Bond Directive for Merchandise subject to Anti-Dumping/countervailing duties*, WT/DS345/AB/R, (16 July 2008).

¹⁰ Joost Pauwelyn, 'U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law', Nicholas Institute for Environmental Policy Solutions, Duke University, (April 2007), p17-33. <http://nicholas.duke.edu/institute/internationaltradelaw.pdf>

¹¹ GATT Panel report, *US – Superfund*, L/6175 - 34S/136, (Report adopted 17 June 1987), p17-19.

¹² 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.” GATT Panel, *US – Tuna Dolphin II*, DS29/R, (16 June 1994) para. 5.8.

policy exceptions of Article XX, in particular including those relating to health and environment. This is taken up below.

(ii) *Direct or indirect taxes and GATT Articles II and III*

Related to this issue of what can be adjusted at the border and whether non-product PPM tax or regulation can be adjusted or imposed at the border, is the GATT traditional distinction between direct and indirect taxes. Direct taxes apply to factors of production and indirect taxes apply to products. The 1975 Working Party on Border Tax Adjustments articulated the distinction between indirect taxes that could be adjusted at the border and indirect taxes that could not be so adjusted. This was upheld in *US -- FSC*, which rules that the United States could not rebate or otherwise adjust its direct taxes which on the contrary constituted export subsidies.¹³

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 (OECD, 1968; Low, 1982; Hufbauer 2006) that 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 seem to have been drafted on the basis of this assumption.

To the extent that CO₂ emission charges fall on producers, including at the plant level, it appears that this would complicate the use of border tax adjustments. This is an instance where legal practice and economic reality may fall apart. In the case of border tax adjustments, it is not obvious that the tax will have been factored into the price by the producer rather than being passed through to the consumer, regardless of whether the domestic tax that is being adjusted at the border falls on a producer or a product. Once again, it should be noted that this issue arises in the context of tax measures and not regulations. It is also important to recognize that this economic-reality-free legal convenience is relevant in the case of Article III, but would not apply in public policy determinations under Article XX.

(iii) *Conclusion*

In sum, it is yet not clear whether a domestic tax or regulation could consider two competing products as "unlike" based on GHG criteria. Article III prohibits discrimination between "like" products. If two products are "unlike", Article III is not applicable and such products can be taxed or regulated with discrimination. If non-product related PPMs do not suffice to make two products unlike, then the Article III prohibition on the provision of "less favorable treatment" on imported like products becomes relevant.

(b) *Less favourable treatment*

The less favourable treatment criterion involves an "effects test". In *Korea—Various Measures on Beef*, the Appellate Body reversed the Panel, which had concluded that a regulatory distinction based exclusively on the 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

¹³ 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 subsidies. This is not said for direct taxes.

favourable". Article III only prohibits discriminatory treatment which "modifies the conditions of competition in the relevant market to the detriment of imported products".¹⁴

Is this "modification of the conditions of competition to the detriment of imported products" the benchmark to assess the existence of "protectionism" condemned by Article III? In *EC—Asbestos*, the Appellate Body reiterated that the "broad and fundamental purpose" of the obligation of national treatment of Article III GATT is "to avoid" the application of "protectionist" internal measures. This determination is based on whether such internal measures are applied in a manner which affects the competitive relationship, in the marketplace, between the domestic and imported products involved, "so as to afford protection to like domestic production".¹⁵ This decision established a two-step analysis, wherein the first step requires a determination whether like products are treated differently, and the second step determines whether this differential treatment amounts to "less favourable treatment".

While the national treatment obligation of Article III prohibits less favourable treatment of like products, it does not require identical treatment.¹⁶ It is legitimate to make regulatory distinctions between "like" products where appropriate. The *EC – Asbestos* report concluded that different treatment of like products may not necessarily result in less favourable treatment; at para 100 (original emphasis), 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 – Import and Sale of 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'.¹⁷ In *EC – Biotech Products*¹⁸, 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.¹⁹ This jurisprudence would suggest that distinct treatment accorded a foreign product on the basis of a PPM might not constitute 'less favourable treatment' and therefore may not necessarily constitute a violation of the national treatment obligation.

The sense of the argumentation in *EC -- Biotech Products* 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 of formally different treatment to that it accords to its own like services and service suppliers". It goes on to say in

¹⁴ Appellate Body Report, *Korea—Various Measures on Beef*, WT/DS161/AB/R and WT/DS169/AB/R, at para. 137.

¹⁵ Appellate Body Report, *EC—Asbestos*, WT/DS135/AB/R, at 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.'"

¹⁶ Appellate Body Report, *EC – Asbestos*, para. 100 and Appellate Body Report, *Dominican Republic -- Import and Sale of Cigarettes*, WT/DS302/AB/R, (adopted 19 May 2005), para/ 96.

¹⁷ Appellate Body Report, *Dominican Republic – Import and Sale of Cigarettes*, at para. 96 (emphasis added).

¹⁸ Panel Report, *European Communities – Measures affecting the approval and marketing of biotech products*, WT/DS291/36, (adopted 23 November 2007), paras. 7.2509, 2516.

¹⁹ Panel Report, *EC – Biotech*, para 7.2514.

Article XVII:3 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.

2. Basic Article XX justifications

If a border adjustment measure is found inconsistent with Article III on grounds that like products are treated less favourably, 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.

(a) The rights of Members under article XX

The first Appellate Body report (*US -- Gasoline*)²⁰ made it clear that WTO Members have the *right* to prioritize policies other than trade, so long as those policies meet the conditions of Article XX, including of its *chapeau*. Public attitudes towards the protection of the environment have evolved in recent years. In the WTO context this has been reflected in the new reference to "sustainable development" in the WTO preamble,²¹ which the Appellate Body has said "gives colour, texture and shading to the rights and obligations of Members under the WTO Agreement".²² This, together with the creation of the Committee on Trade and Environment,²³ has bolstered the Appellate Body's view that it is entitled, or even obliged, to read the provisions of GATT Article XX in a more expansive manner to ensure that Members' rights to take environmental measures are not "illusory".²⁴

This, in turn, has been taken to mean that WTO Members possess a fundamental right, firstly, to take measures to protect the environment at a level they consider appropriate, and secondly, to make relevant determinations unilaterally in certain circumstances. This orientation does not place measures beyond legal challenge, but it certainly implies that governments are presumed to act in good faith when they adopt environment-related measures, and it also goes some way in shifting the burden of proof towards the complainant in the case of a legal challenge. But protectionism is always monitored and prohibited.

(i) *The right to determine the level of protection*

On the first point concerning the level of environmental protection, the Appellate Body declared that each Member had an "undisputed right to determine the level of risk that it [was] willing to accept in

²⁰ Appellate Body Report, *US – Gasoline*, WT/DS2/AB/R, (29 April 1996), pages 28-29.

²¹ *Marrakesh Agreement Establishing the World Trade Organization*, 15 April 1994, 1867 UNTS 154; 33 I.L.M. 1144 (1994).

²² Appellate Body Report, *United States — Import Prohibition of certain Shrimp and Shrimp Products (DS 58) ('US – Shrimp')*, (12 October 1998), para. 155.

²³ Established through the accord of Ministers at the Meeting of the Trade Negotiations Committee in Marrakesh on 14-15 April 1994. See: Decision on Trade and Environment, 15 April 1994, available online at: http://www.wto.org/english/docs_e/legal_e/56-dtenv_e.htm (last accessed 21 April 2009).

²⁴ WTO Appellate Body report on *US – Gasoline* (WT/DS4/ABR) at p. 27. See Marceau and Wyatt, "Trade and the environment, The WTO's efforts to balance economic and sustainable development" in *Economie, Environnement Ethique de la responsabilité sociale et sociétale* (Ed) Rita Trigo Trindade, Henry Peter, Christian Bovet; Schultess (2009), at p. 225.

the circumstances and the level of protection it consider[ed] appropriate in a given situation".²⁵ Moreover in *Australia -- Salmon* it was deemed that a Member could even decide that the appropriate level of protection, or acceptable level of risk, should be as close to "zero risk" as possible.²⁶ In the *EC – Asbestos* dispute, France (as part of the EC) was entitled to measures adopted on the basis of a zero-risk level against cancer.²⁷ This fundamental right is also explicitly recognized in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the TBT Agreement, which grant Members the right to protect health and the environment at the level they see fit. There is accordingly no authentic "proportionality"²⁸ test in the WTO, since a Member cannot be asked to reduce its desired level of protection even if this were to diminish greatly the trade restrictiveness of a measure.

(ii) *The right to take unilateral actions that condition market access*

Regarding the right of unilateral determination of public policy with possible trade effects, the Appellate Body noted that measures falling within the scope of one or other of the exceptions of Article XX frequently condition market access on whether exporting members comply with a policy that has been unilaterally prescribed by the importing Member. The Appellate Body clarified 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 (a) to (j) of Article XX".²⁹ This finding buried the two controversial GATT Tuna-Dolphin disputes that appeared to subject trade restrictions associated with environmental measures to mandatory negotiations and the conclusion of an international cooperation agreement. While full multilateral cooperation in pursuit of an environmental objective is always preferred, the *US – Shrimp* report opened up the possibility that a Member which finds itself in a small minority of parties unwilling to cooperate on an international environmental issue may suffer trade consequences.³⁰

²⁵ WTO Appellate Body Report, *European Communities — Measures Affecting Asbestos and Asbestos-Containing Products (DS 135) ('EC – Asbestos')*, para. 168.

²⁶ WTO Appellate Body Report, *Australia – Measures Affecting Importation of Salmon (DS18) ('Australia – Salmon')*, (20 October 1998), paras. 124-125 (where the Appellate Body referred to the right of a Member to determine its own appropriate level of protection to be 'zero risk'). See also: WTO Appellate Body Report, *European Communities — Measures Concerning Meat and Meat Products (Hormones) (DS48)*, (16 January 1998), para. 186.

²⁷ See: WTO Appellate Body Report, *EC – Asbestos*, above n. 25. This fundamental right is also explicitly recognized in the *Agreement on the Application of Sanitary and Phytosanitary Measures*, 15 April 1994 ('SPS Agreement') and the *Agreement on Technical Barriers to Trade*, 15 April 1994 ('TBT Agreement'), which both grant a Member the right to protect animal or plant health and the environment at the level it sees fit. There is accordingly no authentic "proportionality" test in the WTO since a Member cannot be asked to even modestly reduce its desired level of protection even though it would greatly diminish the trade restrictiveness of its measure.

²⁸ Marceau and Trachtman, "A Guide to the World Trade Organization Law of Domestic Regulation of Goods", in D. Bethlehem, D. Mcrae, R. Neufeld, and I. van Damme (eds), *The Oxford Handbook of International Trade Law*, (Oxford: OUP, 2009). 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, Ed. George Bermann & Petros Mavroidis, Cambridge University Press (2006)

²⁹ Appellate Body Report, *US – Shrimp*, para. 121; AB, *US – Shrimp (Article 21.5)*, para. 138.

³⁰ See Marceau and Wyatt, "Trade and the environment, The WTO's efforts to balance economic and sustainable development" in *Economie, Environnement Ethique de la responsabilité sociale et sociétale* (Ed) Rita Trigo Trindade, Henry Peter, Christian Bovet; Schultess (2009), at p. 225; Marceau Gabrielle "A Call for Coherence in International Law: Praises for the Prohibition Against 'Clinical Isolation' in WTO Dispute

(b) The scope of article XX – can it justify violations of obligations other than those in GATT?

It may be concluded from the above that the scope of Article XX is being expanded over time to justify public policies, particularly involving environmental considerations, that would otherwise be inconsistent with the GATT/WTO. Until recently, it might have been supposed that the scope of Article XX was limited to GATT provisions. However, in *China – Publications and Audiovisual Products* the Appellate Body ruled that Article XX was available as a defense to claims under paragraph 5.1 of China's Accession Protocol.³¹ 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 Agreement³² and the Appellate Body entertained the argumentation.³³ It is conceivable that some may suggest that Article XX could be invoked against allegations of violation of the Agreement on Subsidies and Countervailing Measures. This could be relevant in the context of the debate over the WTO implications of free allocations of emission permits for example. 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.

(c) 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. This concerns the imputation of motive in deciding the permissibility of a policy, including an adjustment at the border. In Article XX the assignment of differing degrees of legitimacy or value to different stated 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* the Panel argued that the protectionist application of a measure could be discerned from its design, architecture and revealing structure.³⁴ A determination of intent could involve analyzing the comprehensive, or overall strategy adopted to reach and objective, as well as the transparency and predictability of the policy process.

(d) The operation of Article XX

Essentially, 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*³⁵ in question; and ii) under the *chapeau* of Article XX, whether the application of the measure ensures that there is no *arbitrary or unjustifiable* discrimination between countries *in the same conditions* or that it constitutes a *disguised restriction* to trade.

Settlement – Issues and Proposals in Trade and Environment Disputes", *Journal of World Trade*, 1999, Vol.33 No.5, p. 87

³¹ Appellate Body Report, *China – Publications and Audiovisual Products*, paras. 205-233.

³² Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994.

³³ Appellate Body Report, *US – Shrimp* (AD from Thailand and China), WT/DS343, 345/AB/R, 16 July 2008, p117 and further,

³⁴ Panel Report, *EC – Asbestos*, WT/DS135/R (18 September 2000), para. 8.236.

³⁵ *Brazil -- Retreaded Tyres*, WT/DS332/AB/R, (3 December 2007), para 150, also paras 145-151.

(i) *The listed sub-paragraphs of Article XX*

Is the measure apt to make a material contribution to the achievement of its objective?

The evolution of WTO legal rulings helps in the interpretation of criteria for determining the WTO-legitimacy of public policy action under the necessity test of Article XX. In *Korea – Beef*, the Appellate Body elaborated upon a three-pronged necessity test involving a "weighing and balancing" of the value 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 protection.³⁶ This contrasted with the GATT, where almost only the degree of trade restrictiveness was at issue. Subsequent cases, notably *EC – Asbestos*³⁷, *Dominican Republic – Cigarettes*³⁸, and *US – Gambling*³⁹, have extended this reasoning to other public policy provisions under Article XX. In *EC – Asbestos*, for example, the Appellate Body further developed its new test by indicating that the "weighing and balancing process" was part of the "determination of whether a WTO-consistent alternative measure "is reasonably available".⁴⁰ Also important in this evolution of criteria for judging necessity was the idea that the higher the value at issue, the more necessary was the measure.⁴¹

For the present purposes, our interest is in Article XX(b) for measures necessary to protect human, animal or plant life or health, and Article XX(g) relating to the conservation of exhaustible natural resources. In *Brazil – Retreaded Tyres* the Appellate Body concentrated on one essential element of the determination -- namely, whether the restrictive measure at issue materially contributed to the policy goal invoked. More specifically, was the import prohibition on retreaded tyres "apt to make a material contribution to the achievement of its objective"?⁴²

The Appellate Body then elaborated on what constitute a material contribution saying:

"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 ..."⁴³

Under this case, the health and environmental exceptions of Article XX were seemingly understood together to mean that so long as a measure is "apt to contribute to the policy goal of the Member", such "contribution" does not have to be immediately observable.⁴⁴ The Appellate Body also noted that "it may prove difficult to isolate the contribution to public health or environmental objectives of

³⁶ Appellate Body Report, *Korea-Beef*, WT/DS161, 169/AB/R, (11 December 2000) paras 161- 164, paras 175-176.

³⁷ Appellate Body Report, *EC – Asbestos*, paras. 170-175.

³⁸ Panel Report, *Dominican Republic – Cigarettes*, WT/DS302/R, (24 November 2004), paras. 7.213-7.215.

³⁹ Appellate Body Report, *US – Gambling*, WT/DS285/AB/R, (7 April 2005) paras. 304-311, 323, 324.

⁴⁰ WTO Appellate Body Report, *EC – Asbestos*, above n. 25, para. 172.

⁴¹ Appellate Body Report, *EC – Asbestos*, para 172.

⁴² WTO Appellate Body Report, *Brazil – Retreaded Tyres*, above n. 2, para. 150.

⁴³ *Ibid.*, para. 210.

⁴⁴ Appellate Body Report, *Brazil – Retreaded Tyres*, para 151.

one specific measure from those attributable to the other measures that are part of the same comprehensive policy".⁴⁵

Are there WTO consistent alternative measure ?

The *US – Gambling* and *Brazil – Retreaded Tyres* reports also established a new position on the burden of proof in regard to the existence of reasonable available alternative measures, shifting the burden of proof towards the complainant in Article XX cases. When this less-trade restrictive alternative requirement was initially developed in the two GATT panel *US – Tuna* disputes, it was understood that the country invoking the exception would have to prove the absence of alternatives.⁴⁶ In *US – Gambling*, however, the Appellate Body 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".⁴⁷ The Appellate Body applied the same test in *Brazil – Retreaded Tyres*, where the EC was asked to point to adequate alternatives and failed to convince the panel or the Appellate Body.

The development dimension

In addition to shifting the burden of proof, these cases decided by the Appellate Body have also emphasized the development dimension of Article XX considerations. It would now appear that 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 the 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. In *Brazil – Retreaded Tyres* the Appellate Body stated:

"The capacity of a country to implement remedial measures that would be particularly costly, or would require advanced technologies, may be relevant to the assessment of whether such measures or practices are reasonably available alternatives to a preventive measure, such as the import ban, which does not involve 'prohibitive costs or substantial technical difficulties'".⁴⁸

(ii) The chapeau of Article XX

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 considered to be "but one expression of the principle of good faith".⁴⁹ Panels and the Appellate Body have thus required that the Member introducing the trade-restrictive measure has, for example, adopted efficient policy to this effect domestically and made a legitimate effort to cooperate with other Members so as to achieve the policy goal through multilateral action, which is often crucial in the pursuit of environmental ends.

The head-note provisions are an important qualification of the right to take an environmental protection measure, requiring in effect that the environmental objective of a measure is balanced against its trade consequences and that mutually agreed trade interests are not unjustifiably subverted in the name of environmental policy. Indeed, in several disputes, the *chapeau* has in fact proven to be

⁴⁵ *Ibid.*, para. 151.

⁴⁶ GATT, *US – Tuna Dolphin I* and *US – Tuna Dolphin II*, for example para 3.64 and 3,81

⁴⁷ WTO Appellate Body Report, *US – Gambling*, above n. 24, para. 309. (original emphasis).

⁴⁸ WTO Appellate Body Report, *Brazil – Retreaded Tyres*, above n. 48, para. 171 citing, at the end of the quotation, *US – Gambling*, above n. 30, para. 308.

⁴⁹ Appellate Body Report, *US – Shrimp*, above n. 21, paras. 158-160.

decisive in finding that measures which might have been justified under Article XX violate WTO law.

Comparable effectiveness and definitional complexities

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 to achieving 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.⁵⁰ 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.⁵¹ In the second *US – Shrimp* dispute, the US measure was considered to be consistent with Article XX because the US introduced flexibilities in its import regulation that allowed imports from countries that demonstrated policies of comparable effectiveness in dealing with the protection of turtles.⁵² Article XX would therefore require a comparison of the effectiveness of alternative policy approaches adopted by Members.

Determining the cost equivalence of policies

This is precisely the situation that might occur in the case of a GHG-related dispute, where a challenge relating to a national climate programme that included measures affecting imports would call for a comparison between different kinds of measures to determine whether less favourable treatment was accorded to foreign products. How should the policy cost equivalence be determined? In practice this is not straightforward. For example, if an importing country maintained a cap and trade system and an exporting country constrained carbon through direct regulation, a comparison would be required between a price-related and a non-price regime. This kind of comparability is at the centre of dispute settlement issues.

Regardless of whether we are dealing with equivalent border adjustments in the Article III sense, or justifiable discrimination in the Article XX sense, similar methodological problems will arise. The essential question is whether policy measures with trade consequences may be judged in terms of equivalent effects. As already noted, climate change mitigation policies may involve price or non-price interventions -- including taxes, GHG permits or allowances, prescriptive regulation⁵³, economic (dis)incentives of one form or another, and subsidies.⁵⁴ While these different approaches can all be evaluated in terms of their consequences for emission levels (Baron et al., 2008), the cost imposed by

⁵⁰ Appellate Body Report, *US – Shrimp*, para. 144. It may oblige a country to impose lower or no requirements on countries that have their own (comparable in effectiveness) climate legislation.

⁵¹ Appellate Body Report, *US – Shrimp*, para. 163.

⁵² Appellate Body Report, *US – Shrimp*, para. 144.

⁵³ 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.

⁵⁴ An extensive literature -- not reviewed here -- has developed on the relative merits of alternative carbon constraint policies. Taxes, for example, provide cost certainty for business 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 on the market.

regulatory policy tools (standards, voluntary agreements or unilaterally-set emission or efficiency targets) are far more difficult to assess.⁵⁵ In theory, it is possible to render policy-imposed costs of different policies 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 policies would require determining a sectors’ ‘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, energy costs, labour costs, infrastructure, and access to technology are among the many factors that can differ widely from one country to the next and can change over time unexpectedly (Baron et al, 2007). In particular, a myriad of factors affect production decisions (and hence production process emissions).

Second, economic models generally make simplifying 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. Although Article XX may give some leeway in allowing exceptions to normal WTO disciplines, certain standards must nonetheless be met in terms of the assessment of comparable effectiveness.

Particular challenges arise in the comparison of price equivalents between taxes and cap-and-trade. Economic models that analyze the effect of boarder adjustments on sectoral carbon leakage typically assume that the same CO₂ price is imposed on all producers – whether domestic and foreign. Modellers project on the basis of a CO₂ tax applied to specific sectors.⁵⁶ Complications arise, however, when companies are permitted to buy and sell allowances on the open market and some allowances are provided free instead of being auctioned (Genasci, 2008). When considering the competitiveness implications of managing differential CO₂ constraints, the specifics of the permit allocation mode in a cap-and-trade system (CATS) must be accounted for. As noted by Genasci (2008), “the challenge on the import side is coming up with an appropriate stipulated adjustment rate for each sector to be covered”. In CATS, where allowances are traded daily, prices will vary daily. Moreover, where permits are allocated without charge, they affect companies differently from a CO₂ tax.

An equally significant complication in the calculation of the price equivalence of taxes and CATS arises if allowances are distributed free under an absolute cap of emissions.⁵⁷ As discussed in Reinaud (2008), when allowances are provided under a hard (absolute) cap – either on the basis of

⁵⁵ Comparability of costs of different climate change mitigation policies can be analysed either from a top-down level, by general equilibrium models, or using bottom-up cost analyses.

⁵⁶ For a more complete review of the existing economic models on sectoral carbon leakage and/or boarder adjustments, see Reinaud (2008).

⁵⁷ Another mode of allocation of the cap to a sector is relative cap (i.e. output based allocation). The main difference is that the total allocation is not fixed before the trading period.

historical emissions or a benchmark – setting the adjustment may be particularly challenging as the amount of free allowances will vary by installation, and with it the cost incurred by installation and the commensurate cost that ought to be applied to importers, and rebated to exporters where this is also contemplated.

At the core of the discussion on free allocation under an absolute cap of emissions (e.g. the European Emissions Trading System) in relation to border adjustments is the opportunity cost of free allowances. In theory, whether allowances are provided free or auctioned under an absolute cap, the value of carbon emission allowances should be reflected in product price (Reinaud, 2003), since every unused carbon allowance has a market value.⁵⁸ Yet if domestic firms pass on the opportunity cost of free allowances -- that is, keep all profits -- and this cost pass-through is not adjusted at the border, then the producer retains windfall profits, which in turn introduces a further imbalance between the policy costs associated with domestic and imported products. However, it is not clear whether domestic firms would charge the full opportunity cost in final prices for fear of losing market share to foreign products. This will depend on the relative elasticities.

The quantity of allowances that importers would need to purchase is also central to the question of (un)equal treatment between domestic and foreign producers. Addressing allocation based on a specific emissions-intensity benchmark per unit of output (e.g. X tonnes of CO₂ per tonne of steel) may be easier than an allocation based on historical emissions as imported products would be subject to the same benchmark. Ideally, the border adjustment would take into account the GHG emissions of each imported product and the adjustment would factor in these emissions and compare to the benchmark. Yet accurately assessing the amount of carbon emitted in the production of a tonne of steel or cement is, in itself, extremely difficult for a variety of reasons, including those relating to the definition of sectoral boundaries and monitoring of inputs.⁵⁹

If the border adjustment is designed to accommodate the free distribution of allowances to some companies, the quantity of allowances importers would be obliged to surrender would be equal to the difference between a defined adjustment (e.g. nationwide average of CO₂ costs or least CO₂ emitting technology) and the average quantity of allowances granted free of charge. This would further complicate the determination of the final adjustment level.

If export adjustments (export tax rebates) on carbon constraints were provided, a central question would be the baseline for the adjustment. If the baseline were a nationwide average, this could result in the subsidization of several domestic firms. If we consider a CATS where allowances are fully auctioned to firms, a company in compliance may hold allowances that are partly purchased from the government in an auction and partly purchased on the market where the price varies. Because companies could hold different percentages of allowances at different cost levels, the average cost of some firms could be lower (or higher) than the national average cost of allowances. This depends on the price at which allowances were purchased on the market or auctioned. The same issue applies if allowances were also allocated partly free of charge under an absolute cap or under an output-based system.

⁵⁸ The concept of opportunity cost does not apply to an output-based allocation mode. Companies do not lose the opportunity to sell allowances on the market. By reducing production, the amount of received allowances decreases.

⁵⁹ In response, some propose allowing importer participation in accordance with demonstrated emission levels (Genasci 2008 citing Saddler et al, 2006). Others suggest applying the lowest charge faced by a domestic product to imports (see Ismer and Neuhoff, 2004, and Godard, 2007).

Another key question when designing the BTA includes the type of emissions covered by the border adjustment (Reinaud, 2008). If the adjustment scheme only covers direct emission costs (i.e. not the indirect costs associated with the prior stage production of inputs) and yet domestic sectors receive free allocation or subsidies to offset indirect costs, this could result in the unequal treatment of importers. This point is explored further below in relation to subsidies.

Finally, it has already been noted that the UNFCCC recognises that countries should reduce GHG emissions at the national level in line with their contribution to historical GHG emissions and their economic capacity to invest in, and deal with the constraints of, emission reductions. Yet no objective criteria exist for determining who should make the necessary reductions, and whether sectoral approaches to mitigation sit well with a national focus. In short, disagreement prevails on the interpretation of the UNFCCC principle of “common but differentiated responsibility and respective capabilities”.

Prevailing conditions and development considerations

As the WTO-UNEP Report notes⁶⁰, WTO jurisprudence has highlighted some of the circumstances which are relevant when assessing compliance with the *chapeau*. As the Report states “[t]hese include relevant coordination and cooperation activities undertaken by the defendant at the international level in the trade and environment area, the design of the measure, its flexibility to take into account different situations in different countries, as well as an analysis of the rationale put forward to explain the existence of a discrimination (the rationale for the discrimination needs to have some connection to the stated objective of the measure at issue)”. It recalls that “in the *US – Gasoline* decision the Appellate Body considered that the United States had not sufficiently explored the possibility of entering into cooperative arrangements with affected countries in order to mitigate the administrative problems raised by the United States in their justification of the discriminatory treatment. Moreover, in the *US – Shrimp* case the fact that the United States had ‘treated WTO Members differently’ by adopting a cooperative approach regarding the protection of sea turtles with some members but not with others also showed that the measure was applied in a manner that discriminated among WTO members in an unjustifiable manner”.

The prohibition against “arbitrary or unjustifiable discrimination between Members where the same conditions prevail” seem to recognize that different conditions in different Members call for different treatment.⁶¹ The same regulation might not be appropriate for countries where the same conditions do not prevail.⁶² In a similar vein, the *EC – Tariff Preferences* finding interpreted language in the Enabling Clause to allow discriminatory preferential treatment conditional upon compliance with developmental criteria so long as countries in similar conditions were treated similarly.⁶³

Among such different “conditions”, one might argue that the respective levels of development of different Members should be taken into account. This would be consistent with the non-reciprocity

⁶⁰ WTO-UNEP report on Trade and Climate Change, at p. 109

⁶¹ Appellate Body Report, *US – Shrimp*, para. 164.

⁶² 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. Appellate Body Report, *US – Shrimp*, para. 177.

⁶³ Appellate Body Report, *EC – Tariff Preferences*, WT/DS246/AB/R, (7 April 2004), para 273

and special and differential treatment provisions of the 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 and respective capabilities common and differentiated responsibilities" enunciated in the 1992 Rio Declaration.

(iii) *Sectoral and national mitigation targets*

A fundamental issue arises if countries choose to introduce adjustments at the border to address sectoral effects (i.e. the loss of competitiveness and/or carbon leakage). In the context of a comparative effectiveness test under Article XX used to justify a border adjustment, the question is whether an importing country can require that an exporting country deal with CO₂ emissions in a specific sector, limiting the adjustment to that sector. How would such an adjustment take into account the UNFCCC approach to national reduction commitments which are set at an aggregate level, leaving each party to decide on its emission reduction commitments in its own fashion? At issue here, then, is what role exists for a sectoral approach to managing climate change? The issue is more nuanced in the Kyoto Protocol. While the architecture builds on aggregate national emission reduction targets, it is only the Annex 1 countries that actually have reduction commitments. It remains to be seen how this situation evolves after 2012.

The challenge, nevertheless, is to reconcile the right of an importing country to define its climate change policy at the sectoral level with the right of the exporting country to implement the measures of its choice for reducing CO₂ emissions. No WTO jurisprudence exists to give clear guidance on these questions. However, it may depend on whether the international agreement binding the exporting and importing Members maintains the right of flexibility for the exporting country to decide how it will comply with its international commitments. Countries are entitled to manage their climate change policies in the context of specific sectors, as no environmental treaty limits their basic sovereignty in that regard. But WTO jurisprudence has imposed a coherence requirement among comparable sectors. In *Korea – Beef*, the Appellate Body concluded that Korea could not justify the isolation of imported beef from domestic beef as a necessary measure because it was too restrictive. The Appellate Body observed that WTO-consistent alternatives were available, evidence of which was found in the use of labels in the vegetable sector.⁶⁴ In any case, exporting countries are not prohibited from dealing with climate change in the manner they wish. Thus, the right of the importing country to adjust sectorally is arguably limited by the right of the exporting country not to do so. If the exporting country is a developing country, the *Brazil – Tyres* case suggests that the right to adopt any appropriate policy is reinforced by developmental considerations when looking at alternatives.

Moreover, the Article XX *chapeau* words "where the same conditions prevail" may be interpreted as requiring consideration of the development conditions of the Member(s) affected by the WTO violation justified under Article XX. This interpretation would also take into account the international environment principle "Common and differentiated responsibility" and would be supported by the sustainable development objective articulated in the Preamble of the WTO Agreement.

⁶⁴ Appellate Body Report, *EC – Hormones*, WT/DS26/AB/R, WT/DS48/AB/R, (16 January 1998), paras xxx. Pauwelyn, Joost, 'The WTO Agreement on Sanitary and Phytosanitary Measures as Applied in the First Three SPS Disputes: *EC – Hormones*, *Australia – Salmon* and *Japan – Varietals*, *Journal of International Economic Law*, (1999), p 641-664.

Since the scope of Article XX allows a Member to give priority to public policy priorities over obligations of the GATT/WTO, the question whether sectoral policy is acceptable may be determined by the environmental considerations themselves, balanced by development considerations in relation to the affected Members. Among the relevant factors would be whether it makes environmental sense to have sectoral CO₂ limits and related border adjustments. As in the *Brazil -- Tyres* case, the question would be whether such measures were "apt" to contribute to the reduction of CO₂ levels, which in turn would be deemed an action by the importer that contributes to the conservation of natural resources or health. Finally, would such a sectoral scheme be consistent with developmental objectives? The situation would not be the same if the importing country is not party to the same treaty that gives the exporting country the right to act on climate change in any manner it chooses. In such a situation the panel process assessing the WTO compatibility of a sectoral CO₂ programme would in effect be doing the job of determining what would have been the reasonable elements of an international consensus. This would be a challenging task and the answer is far from obvious.

III. TECHNICAL BARRIERS TO TRADE AND STANDARDS

Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues may also be covered by the disciplines of the Agreement on Technical Barriers to Trade (TBT Agreement). In contrast to the border adjustment discussion relating to taxes and charges, technical regulations already establish a 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 CO₂ 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.

A. TECHNICAL REGULATIONS ON TRADE

The Agreement on Technical Barriers to Trade (TBT Agreement) regulates mandatory technical regulations as well as voluntary regulation called referred to as standards). The TBT Agreement contains specific disciplines on technical regulations. The TBT rules are applicable to all domestic standards, their preparation and application, their mutual recognition, rules on certification schemes, conformity assessment, and labels. Legally, both the provisions of the TBT Agreement and of the GATT could be applicable simultaneously to a domestic regulation that happens to be a technical regulation. The TBT Agreement seems to authorize any technical regulation so long as it is 'not . . . more trade-restrictive than necessary to fulfil a 'legitimate objective'. Note that contrary to the GATT Article XX, the TBT Agreement contains an open list of policies. The protection of the environment and of sustainable development being legitimate objective it seems clear that many of the GHG related regulations will be technical regulation.

The TBT Agreement requires that all technical regulations, whether or not discriminatory, must be no more trade restrictive than necessary to fulfill a legitimate objective, taking into account the risks non-fulfillment would create.⁶⁵ This involves an assessment of all technical regulations based on their trade restrictiveness. The reference to "necessary" would seem to imply a similar necessity test as that under the GATT Article XX exceptions. While the Member may establish its own desired level of protection, the necessity test analyzes: i) the effectiveness of any (alternative) regulation of reaching

⁶⁵ Relevant elements for consideration include available scientific and technical information, related processing technology and the intended end-uses of products.

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 finding a measure 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 specify the objective.

The nature of the necessity test under the TBT Agreement also raises questions about measuring effectiveness in addressing climate change mitigation, since there may be uncertainty regarding the effectiveness of different regulatory measures. 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 the whether the evaluation of policy costs should be undertaken on a sector-by-sector or economy wide basis.

B. LABELLING

Technical regulations are defined to include “packaging, marking, or labelling requirements as they apply to a product, process or production method”.

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 among different markets. This could imply changes over time 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.

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.⁶⁶ 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.

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

⁶⁶ GATT Panel, *US – Tuna Dolphin I*, DS21/R - 39S/155, (3 September 1991), para 5.6, 5.42 – 5.44.

encompass non-product-related PPMs. Many developing 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 product 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.

Furthermore⁶⁷, 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.⁶⁸

These are unresolved questions that may increase in importance with increasing resort of governments to measures aimed at managing climate change.

C. INTERNATIONAL STANDARDS

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 the said international standard should be

67 Marceau and Trachtman, "A Guide to the World Trade Organization Law of Domestic Regulation of Goods", in D. Bethlehem, D. Mcrae, R. Neufeld, and I. van Damme (eds), *The Oxford Handbook of International Trade Law*, (Oxford: OUP, 2009). 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, Ed. George Bermann & Petros Mavroidis, Cambridge University Press (2006)

68 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". Is the prescription for "their related" process and production methods a reference to product-related PPMs that have a physical relation to the products? If so, do only the product-related PPM regulations that have a physical impact on the product constitute technical regulations covered by the TBT Agreement? Or does this definition refer to PPMs that relate to the production of the said product (even without any physical impact on the product), as opposed to policies that are general and not concerned specifically with the production or the process of any specific products, such as a distinction between imports that come from Members that have family allowances programmes and those who do not?

“used as the principal constituent or fundamental principle for the purpose of enacting the technical regulation.”⁶⁹ Furthermore, one standard cannot be the “basis” for another if the two are contradictory.⁷⁰ 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.⁷¹

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

Importantly, the 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, in 2000 Members adopted 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”⁷². 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 and consensus, effectiveness and relevance, 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”. This argument related to the interpretation of the definition of “standard” is contained in Annex 1 of the TBT Agreement.⁷³ This definition simply refers to a document “approved by a recognized body,” without specifying 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. The immediate consequence of this ruling is that sub-groups of Members 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.

⁶⁹ Id., para. 243.

⁷⁰ Id., para. 248.

⁷¹ Hormones and sardines

⁷² G/TBT/9 13 November 2000

⁷³ It should be noted here that standards are defined as voluntary in the TBT Agreement, whereas technical regulations are mandatory

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 directed tax reductions and concessionary financial support (loans and grants) seek to influence the cost-effectiveness of technical actions. Subsidies can focus on one or several sectors, depending on the subsidy base.

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 CO₂ target, or making 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 lower financial risk 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.⁷⁴ Direct costs could be mitigated through the recycling of revenues in the case of permit auctions, or through the distribution of freely allocated permits (see the section on border adjustments).⁷⁵ But beyond direct costs, governments could choose to compensate for the indirect costs of the CATS (e.g. electricity price increase because of a cap on this sector's GHG emission).⁷⁶

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. The

⁷⁴ In the case where subsidies are used to mitigate the competitiveness effects of climate change policies, they could be provided up to a baseline (van Asselt and Biermann, 2007, citing Zhang, 2001) or as a one-time subsidy to deal with the 'first shock' of meeting emission reduction obligations (van Asselt and Biermann, 2007, citing Assunção and Zhang, 2002, p.5).

⁷⁵ Beyond the treatment of existing installations, the allocation mode is also an important factor for investment decisions – both to open new or increase capacity (new entrants) and to close installations.

⁷⁶ 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 CO₂ price signal is effective (Reinaud, 2008).

table below summarizes the main instruments and targets of subsidizing activity used by governments in climate change policy.

Main subsidy instruments and targets

Major subsidy instruments	Typical firm/sector targets
Tax breaks (reduced rates, accelerated depreciation allowances, other offsets) Concessionary loans and grants Free permit allocations Sector-specific dispensations on technology or other regulatory requirements	Energy use levels or intensity goals Total emission levels or emission intensity Energy-efficient investments (e.g. new technologies) Emission-reducing investment Management prescriptions Compensation for loss of competitiveness

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. 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...". The WTO contains two basic types of disciplines on subsidies -- those included in the Agreement on Subsidies and Countervailing Measures (SCM Agreement) and those specific to agricultural products in the Agreement on Agriculture.

1. Subsidies under the SCM Agreement

Subsidies to firms (or sectors) of the kinds identified in the table above are not necessarily prohibited. 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 resulted in adverse effects causing serious prejudice to the interests of another Member.

A prohibited subsidy would be 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 could be challenged in dispute settlement or it could be countervailed.

(a) Definition of subsidies

Article 1 of the SCM Agreement defines a subsidy as a "financial contribution" by a "government or 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 contribution -- a direct transfer of funds, foregone government revenue, governmental provision of goods or services, and the creation of a funding mechanism. In addition, the provision of income support or regulatory price support measures is also a subsidy. WTO case law has made clear that the existence of benefit must be determined by reference to the market.

(b) Actionable subsidies

Actionable subsidies must be specific. If a subsidy is widely available in the economy it will not be considered specific. This is judged in terms of whether objective criteria or conditions exist that do not favor certain enterprises over others, which are economic in nature, and horizontal in application.⁷⁷ This determination involves an analysis of the different recipients/beneficiaries in an economy as well as the nature and the level of application of the subsidy.

For a specific subsidy to be successfully challenged on the grounds that it imposes 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 countervailable) 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 would depend 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.

⁷⁷ 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. Panel, *US- Upland Cotton*, 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'. Panel, *US-Softwood Lumber*, para 7.116, footnote 179.

(c) Prohibited subsidies

The SCM deems the following subsidies to be "prohibited": those contingent, in law or in fact, upon export performance; and those contingent, upon the use of domestic over imported goods. Prohibited subsidies are presumed to be specific and are subject to an expedited timetable in case of dispute and if it is found that the subsidy is indeed prohibited, it must be immediately withdrawn. In the context of climate change, some authors⁷⁸ have argued that some of the free allocation programmes based on trade intensity include the level of exports could be considered as *de facto* or *de jure* export subsidies

(d) Green subsidies in SCM?

Article 8 of the SCM Agreement defines certain subsidies as non-actionable, including specified kinds 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, as it was once debated by the Appellate Body, *arguendo*, as applicable to violations of the Antidumping Agreement.⁷⁹ 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. But such a broad exception does not appear to offer sufficient criteria to capture the distinction between good and bad subsidies. This is not an issue that has 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 subjected to specific reduction commitments in the Uruguay Round.⁸⁰ 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.

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

⁷⁸ 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 center" (2010).; also D Feawer, W MacGoldrick, V Boyd-Well, "Does the CPRS contravene WTO rules on export subsidies", *JWT* vol44, no.2 (2010), p.319.

⁷⁹ See the Appellate Body reports on *US – Measures relating to Shrimp from Thailand* (WT/DS343/AB/R) and *US – Customs Bond Directive for Merchandise subject to Anti-Dumping/countervailing duties* (WT/DS345/AB/R) where the application of Article XX to the AD Agreement was discussed, p117 and further. See also the Appellate Body Report, *China – Publications and Audiovisual Products*, paras. 205-233 where Article XX was applied to the provisions of China's Protocol of accession.

⁸⁰ The Agreement on Agriculture does not define a subsidy and the case law has used the SCM Agreement definition.

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* to include subsidies for which there is no governmental disbursement of funds but where the governmental regulations allow or even favour the provision of subsidies by producers 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 type of regulatory subsidies could be introduced to deal with climate change or whether such types of 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 to 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.

C. WTO SUBSIDY RULES AND CLIMATE CHANGE POLICY

The question of how subsidies relevant to climate change may be treated under WTO provisions merits further research. Clearly, a number of subsidy practices associate with managing climate change could raise issues. Subsidies fitting within the definition under Article 1 of the SCM Agreement could be legally challenged on the grounds of their adverse effects, or they may be countervailed if they are the source of injury to a domestic industry in another jurisdiction.

It remains an open issue⁸¹ whether or not the free allocation of CO₂ permits might constitute a subsidy within the meaning of the SCM Agreement, in that they that would be considered specific and cause an adverse effect in the relevant market. If we assume the CO₂ permits allocated free of charge are subsequently traded against financial remuneration, some have argued that this could be treated as a "financial contribution" by virtue of being a "direct transfer of funds" within the meaning of sub-paragraph: (i) "revenue ... foregone" within the meaning of sub-paragraph; or (ii) the provision of a "good" within the meaning of sub-paragraph (iii). As to the "benefit", one can argue that the free receipt of an instrument with financial value 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

⁸¹ The SCM Agreement relates to trade in goods. For the purpose of this note, we assume that the recipients of the relevant CO₂ permits produce goods.

company receiving the allocation. Some have also argued that free allowances based on the level of trade (trade sensitive) can be considered to be export-related and thus constitute an export subsidy.

However, absent some additional element of linkage to exportation or use of domestic inputs, subsidization through the free allocation of CO₂ permits would not be a prohibited subsidy, but an actionable one. Thus, the mere fact that CO₂ permits are provided free of charge is not *per se* inconsistent with the SCM Agreement. In order to challenge legally subsidization through the free allocation of permits, other Members would need to demonstrate that such subsidization causes "adverse effects" to their interests.

V. SUMMARY AND CONCLUSIONS

A. CARBON LEAKAGE AND COMPETITIVENESS: THE ESSENCE OF THE POLICY CHALLENGE

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 all countries embraced carbon constraint policies at the national level, leakage from one jurisdiction to another could be neutralized through inter-sectoral adjustments to GHG emission policies within the country where leakage led to increased emissions. If, for example, some steel manufacturing migrated from a more carbon-constrained jurisdiction to a less constrained one, the latter jurisdiction might adjust its GHG emission policies in, say, the forestry sector in order to maintain the same national level of climate change mitigation effort.

That would mean the leakage problem was addressed from a purely environmental perspective, but in the context of inter-sectoral resource shifts among countries. Strictly speaking, inter-sectoral resource shifts could arise even if all countries had identical levels of national emission constraint policies, but with different sectoral impacts. This is where the competitiveness issue enters the picture. 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 a consideration of the competitiveness consequences of climate change mitigation policies is inevitable. Carbon leakage and competitiveness concerns are 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 adjusted 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.

B. COMPETITIVENESS-DRIVEN INTERVENTION AND THE INTERNATIONAL TRADE REGIME

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.

C. THE NEED FOR COMPARISONS BETWEEN REGIMES AND POLICIES, AND THE DIFFICULTIES OF MAKING THEM

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. The equivalence we are talking about in relation to competitiveness is the cost equivalence, which for the most part will be determined through price or price-equivalent differences attributable to given climate change policies. Note that this has little to do with equivalence in terms of environmental consequences because the quest for comparability is driven by competitiveness concerns and not climate outcomes.

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 extreme, 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 extreme, the assessment could be made only on the emissions immediately associated with production of the final good.

D. WTO RULES AND CASE LAW: INTERPRETING THE SCOPE FOR NATIONAL ACTIONS TO ADDRESS COMPETITIVENESS

A good deal of the paper has focused on analyzing WTO provisions relevant to climate change policy. As the paper makes clear that considerable uncertainty remains on the question of how to interpret some provisions in the WTO Agreement. But this is a moving feast because of case law. Case law evolves with changes in perceptions of reality and with reality itself. We have placed considerable emphasis on Appellate Body findings since they have been taking identifiable directions in recent years. Giving precedent value to these findings seems the most appropriate approach, not least because a declared objective of the dispute settlement system is to provide "security and predictability to the multilateral trading system" (Article 3.2, DSU). Moreover, in *US -- Oil Country Tubular Goods Sunset Reviews* the Appellate Body held that "following the Appellate Body's conclusions in earlier disputes is not only appropriate, but is what would be expected from panels, especially where the issues are the same". The issue of the relationship between panel rulings and prior Appellate Body findings was prominent in *US - Shrimp (Article 21.5 -- Malaysia)*, where it was stated that the legal interpretation embodied in adopted panel and Appellate Body reports "becomes part and parcel of the *acquis* of the WTO dispute settlement system".

E. INTERPRETATIVE TENDENCIES IN WTO CASE LAW

As public awareness and concern has grown about environmental quality, including in respect of climate change, the WTO regime has evolved. The paper concludes that there are two significant strands in this evolution, traceable through a series of Appellate Body findings on cases involving environmental policies. These trends are most obvious in rulings that involve the interpretation of the public policy exception provisions of Article XX.

First, in the GATT days, assessments of the appropriateness of public policy exceptions were made primarily in terms of trade considerations, with a view to ensuring that such exceptions to GATT rules caused as little disruption of trade as possible. Nowadays, trade considerations are only one part of the reckoning, with much more emphasis on the public policy aim. The more important the underlying issue is considered, the less concern will there be for the trade implications of action. In the context of climate change, this implies more sympathetic consideration of environmental and health concerns.

Second, in assessing the legitimacy of trade policy actions on public policy grounds, several cases have emphasized the need to take developmental considerations into account. The Appellate Body has considered this consistent with the reference in the preamble of the WTO Agreement to sustainable development. In addition, reference has been made to the language in the *chapeau* of Article XX that takes account of the need to ensure that the same conditions prevail between two situations when an assessment is made of the permissible degree of discrimination or market access restriction in pursuit of a public policy. This pushes findings in the direction of differentiating between countries on the basis of their development status.

One way of looking at these interpretative tendencies is in terms of scope for a trade-off. Greater domestic pressure is on developed countries to take climate change actions and they therefore might benefit to a greater extent from more environment-friendly interpretations of public policy exceptions. On the other hand, developing countries may be able to rely on jurisprudential tendencies that recognize different development needs and seek to give operational meaning to the notion of sustainable development. This is consistent with fundamental principles of both the climate change and the trade regimes that recognize the need for differentiating rights and responsibilities among countries in light of development considerations.

F. BORDER ADJUSTMENTS

The starting point for thinking about border adjustments is Article III, which permits policies at the border to align the treatment of imported products with that of domestic products. The discussion of what is involved turns on the definitions of likeness and less favourable treatment. If are judged both like (sufficiently substitutable in the market) the domestic product in question and in receipt of no less favourable treatment, then a border adjustment could pass muster under Article III. If not, the question would be whether Article XX would provide cover for a contemplated border adjustment.

In considering the Article III standard, differences of view have emerged as to whether non-incorporated production and process methods (PPMs) can be included in the determination of likeness. If they cannot, then Article XX is the only avenue for considering legitimate action when a government wants to adjust at the border for non-incorporated PPMs.

A second issue relates to taxes only, and it concerns the fact that GATT rules permit border tax adjustments on taxes that fall on products (indirect taxes) but not on taxes that a charged on the factors of production (direct taxes). There was never a justifiable economic case to be made for these contrasting tax pass-through or shifting assumptions, since whether producers or consumers assume the burden of a tax will not depend on who pays it in the first instance, but on the factors that determine the conditions of competition in the market. Producers are more likely to be able to incorporate taxes in their prices if they enjoy monopolistic power on the producer side and demand for their products is inelastic on the consumer side. A factor that might have influenced the decision to distinguish between direct and indirect taxes in this manner may have been that it would be harder in practical terms to adjust for the direct tax burden on exports.

A final consideration regarding Article III coverage of border adjustments is that previous GATT/WTO jurisprudence has been insistent on the need for precision. Averaging procedures leading to over-adjustment at the border have been found at fault. This is an additional factor that may push those interested in defending border adjustments towards Article XX.

G. ARTICLE XX

Article XX lists a number of specific public policy objectives which justify departures from normal GATT/WTO disciplines, and as noted, the scope for interpreting the exceptions appears to be widening. In addition, the burden of proof is shifting in a fashion that puts the burden on the complainant to demonstrate -- after the country applying the measure has established the necessity of the measure -- that there are less restrictive alternative measures that can meet the public policy objective. In essence, the jurisprudence has confirmed that Members are at liberty to determine the degree to which they wish to act upon a public policy objective and to take action accordingly. But

they must ensure consistency in their adoption of measures in comparable circumstances. The TBT Agreement contains the same explicit principle.

H. THE AGREEMENT ON TECHNICAL BARRIERS TO TRADE (TBT AGREEMENT)

In essence, the TBT Agreement is an elaboration of that part of Article III that deals with non-price measures (technical regulations and standards) and of Article XX (in terms of the *chapeau*). In some ways, the TBT Agreement is quite similar to Article XX, even though the former provides a conditional right for an open-ended definition of public policy goals, whereas the latter provides an exhaustive list of permitted exceptions from WTO rules. There is legal uncertainty about the relationship between the two instruments, which may be clarified through further jurisprudence. It may well be that the TBT approach will resemble that of Article XX when it comes to judging non-trade policy goals against the trade rules.

One important difference, however, is that the TBT Agreement encourages the harmonization of standards to meet public policy exigencies. It embodies a presumption that national standards which follow international ones are legitimate, although there remains some doubt over how international standards are to be defined.

I. SUBSIDIES

Even though subsidies are quite narrowly defined in the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) there could be situations in which subsidies aimed at mitigating GHG emissions could be legally challenged or countervailed. There is no longer any category of environmental subsidy beyond challenge (as previously provided for in Article 8 of the SCM Agreement) either as illegal or actionable. If it is the case that trade friction via the potential use of border adjustment measures is more likely than friction arising from subsidies, then it would make sense to consider the possibility of defining good and bad subsidies and finding ways of accommodating the former. This is an area that has not been adequately researched, but in which there may be scope for international cooperation.

J. SOME IDEAS ABOUT THE WAY FORWARD

In exploring the interface between climate change policy and the trade rules, this paper concludes that there are several areas where potential 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 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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