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The Interface Between the Trade Rules and Climate Change Actions

Gabrielle Marceau

1 Introduction

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

The second dimension is linked to the first. Industries in more carbon-constrained countries will feel aggrieved about additional competitive pressure from the same industries in less constrained countries. This will induce them to demand policy responses from their governments to redress this loss of competitiveness. Such policy responses, should they be forthcoming, would probably affect

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international trade—be they tax adjustments at the border, regulation, or subsidy.¹ The climate change regime under the United Nations Framework Convention on Climate Change (UNFCCC) may also impact the manner and form these responses take, particularly the principle of common but differentiated responsibilities and respective capabilities as enunciated therein.

Can or should the environmental and competitiveness aspects of this situation be de-linked? It seems improbable. In fact, to alleviate the tension between environmental and competitiveness concerns would require a great degree of international cooperation rather than national trade-related responses. Therefore, the possibility that governments will apply policies with a significant trade impact to address carbon leakage and competitiveness issues is very real and is thus the motivation of this paper, which provides an overview of certain WTO rules relevant to the interface between climate change policy and trade policy.²

In this paper, attention is focused first on General Agreement on Trade and Tariff (GATT) rules applicable to GHG-trade-related policies and measures (GHG related), particularly the national treatment and most-favoured-nation obligations and its Article XX exceptions. It addresses issues related to price-based and non-price based measures, and the issue of likeness, which is particularly relevant in the climate change context. The Agreement on Technical Barriers to Trade (TBT) and the policy flexibilities developed therein are subsequently discussed. Some other areas of WTO rules important in the climate change and trade policy discussion are briefly mentioned in Sect. 3—showing the direction to new research work needed. Finally broader policy concerns such as the food and trade nexus in the context of actions and reactions to climate change are not addressed at all. These include issues that may arise from emissions trading schemes, and the climate change, food and trade nexus.

When discussing the application of existing GATT/WTO rules to climate change related measures, it should be borne in mind that any analysis of the interface between trade rules and climate change rules should take into account the fact that the existing GATT and WTO rules were not drafted to address climate change problems and policies. This sometimes leads to legal awkwardness. For example, the basic GATT non-discrimination principle is applicable to the treatment of imported versus domestic products and is generally thought to prohibit distinctions that are based on processes and production methods which frequently are not product based. However, climate change related policies targeting GHG reductions often do not deal with products *per se* and generally address processes and production methods, while focusing on broader variables such as sectors, industries, firms or installations. The result is that these broader climate change

¹ Note that subsidies can be demanded and have been demanded independently of the situation of the industry in other countries. Industries affected by carbon-related regulation have requested subsidies and other benefits to assist them cope with the financial burden imposed by all new carbon regulation.

² The trade and WTO implications of other approaches to managing climate change policy internationally, such as an agreement on carbon taxes, are not addressed in this paper.

measures may discriminate among similar products on the basis of criteria not related to product. This will clash with the non-discrimination requirements of the GATT's national treatment and most-favoured nation provisions (Articles I and III of GATT), which tend to focus on product-related criteria when distinguishing among products. Of course, climate change related policies targeting GHG reductions might be permitted under the exceptions contained in Article XX of GATT. In this context, the recent interpretation of the provisions of the TBT offered by the Appellate Body (AB) seems to respond better to the regulatory distinctions called for by most climate change programmes, as discussed in Sect. 3 below.

A second example concerns border adjustments on exports. While the GATT traditionally allows a government to rebate or remit domestic taxes imposed on exported products (indirect taxes), it prohibits such treatment of domestic taxes on firms or industries (direct taxes) producing for export. Since climate change subsidies and taxes tend to target firms, sectors or nations rather than products *per se*, such measures could raise questions about the relevance of and consistency with WTO disciplines. This will be discussed in Sect. 2.1 below. Moreover, divergence between WTO rules and climate change action raises additional challenges when attempting to define comparable action between countries and comparable effects of GHG-related measures. This comparison of national actions on GHG-related measures is relevant in the application of basic principles such as the most-favoured nation and the national treatment principles but also when assessing the application of the Article XX exceptions of GATT. Such comparison is also relevant in the application of the TBT disciplines to technical regulation and label in GHG-related actions. Underlying all this is the question whether WTO Members (Members) manage to negotiate or implicitly accept varying approaches towards actions at the interface of trade and climate change policies, or whether the WTO dispute settlement system will be called upon to assess the WTO compatibility of specific GHG-related measures affecting trade.

2 GATT/WTO Market Access Rules Applicable to GHG-Related Policies and Measures

This section briefly examines the relevant GATT/WTO rules in the climate change context. It further outlines the exceptions under Article XX of GATT that are particularly relevant in the context of addressing climate change concerns.

2.1 Rules Under the GATT

In the climate change context, two types of (import or export) border adjustments may be deployed—price-based and non-price based restrictions or regulations. In the latter case, market access is restricted to products complying with specific

standards (e.g. the level of GHG emissions resulting from the production of an exported good), or compliance with certain other types of requirements (such as notification or reporting). In turn, price-based border adjustments can take two main forms—(i) border tax adjustments on imports and (ii) mandatory carbon offset purchases (of GHG emission permits or allowances by importers). Border adjustments can also be made on exports, including in the form of export tax rebates.

WTO rules do not restrict the set of taxes and regulations that a nation may impose domestically on products. But they do require non-discrimination in the application of such policies to domestic versus imported products—what is known as “national treatment”, and among imported products—what is known as the “most-favoured nation principle”. For example, nothing in the WTO prevents a nation from imposing a sales tax on imports from a country as long as it is applied to “like” domestic products and imported products from all other nations.

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

2.1.1 National Treatment, Most-Favoured Nation Obligations and Scheduled Import Tariff in the GATT

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

WTO rules applicable to border measures differ from those applicable to internal measures. Therefore, the first legal step when assessing WTO compatibility of a

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

GHG measure is to determine whether the measure at issue is a “border measure”—like tariff a—or an “internal measure (applied at the border)” in the form of a regulation.

If a GHG measure at issue is considered to be a price-based “border measure”, the money collected via this GHG price-based measure must not breach the relevant tariff binding commitment of the importing country.⁴ Note that the non-discrimination obligation of the most-favoured nation principle (MFN) of Article I is applicable to price-based border measures under Article II of GATT, and thus such GHG price-based border measure will also have to comply with the GATT Article I MFN obligation.

If a GHG-related measure is a domestic or internal measure, the rules of Article III on national treatment will apply. The main discipline of Article III of GATT on national treatment is that no imported product should be treated less favourably than a like domestic product. Environmental measures, and in particular price-based GHG-related measures, can be applied to goods at three different levels. The most straightforward case is to apply the measure to the good itself, say a tax applied to light bulbs, refrigerators or cars, according to their energy efficiency levels. A significant difficulty here is that not all existing policies relating to climate change focus on products *per se*. Many GHG-related policies target items broader than individual products—such as installations, firms, industry, sectors, or nations—and attempt to make distinctions relevant to trade on this basis rather than in terms of specific products.

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

Less straightforward applications concern taxes on the production processes used in making the good or carbon emissions that occur during production of the good. A government may wish, for example, to discourage the use of a particularly polluting production process. It may therefore tax the good when it is produced with

⁴ According to WTO (2008), the Panel and the Appellate Body determined criteria to distinguish a border measure, in the form of a tariff governed by GATT Article II, and an internal tax enforced upon imports at the border governed by Article III on national treatment. The Panel emphasized that if the obligation to pay a charge accrues due to an internal event, such as the distribution, sale, use or transportation of the imported product then it is an internal charge governed by Article III. If the charge is imposed “on importation” and independently of its distribution in the domestic market, then it is a border measure subject to the requirements of Article II. This was reinforced by the AB in Appellate Body Report (WTO 2009, para. 163).

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

Two distinct sets of problems repeatedly arise when considering the WTO compatibility of border taxes or regulations on imported products. First, there is the definition of similar products (the specific WTO term for “similar products” is “like products”). Only if the imported and domestic products are like, do the WTO rules on non-discrimination apply. Second, there is the definition of “no less favourable” treatment, which considers the situation where a domestic measure treats imported like products less favourably. The issue of less favourable treatment (or the comparability of GHG measures and their effects on production costs) is especially complex when dealing with domestic regulations aimed at mitigating climate change.

Suppose a government taxes energy-inefficient refrigerators as part of its climate policy. Under WTO rules, the government is allowed to impose the same tax at the border on imported energy-inefficient refrigerators because the tax relates to a physical characteristic of the product, i.e. energy-non-efficient refrigerators. What is prohibited by Article III of GATT is the imposition of a border tax that has the effect of discriminating against similar imported refrigerators. This could arise for example, if the importing nation considered that *imported* energy-efficient refrigerators were not like *domestic* energy-efficient refrigerators. Alternatively, a national tax scheme might always classify imported refrigerators under a higher tax category. Plainly the issue is whether imported and domestic refrigerators are “like” products—and thus must be charged the same tax—or are not “like” products, thus can be taxed differently. The definition of “likeness” is therefore significant and likely to be controversial in the climate change context when applied to questions such as whether a tonne of steel made with clean energy is “like” a tonne of steel made with unclean energy.

Likeness

In GATT/WTO likeness is informed by overarching WTO goal of trade liberalization and competition. The determination of likeness between two products (imported and domestic) depends on whether they “compete” in the market (WTO 2001, para. 98; 2014, para. 5.16). In the context of climate change, the debate is based on one fundamental issue: whether two products can be differentiated and considered unlike based on criteria relating to GHG emissions—even if they somehow compete for the same consumers in the same market. For instance,

would it be permissible to differentiate (and therefore treat differently) products based on: (i) the level of GHGs emitted in production; (ii) the level of GHGs emitted within the sector producing such a product; (iii) the level of GHGs emitted nationally by the exporting country; or (iv) the GHG-related policies or actions of an exporting or importing country?

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

The scope of the concept of likeness must be determined by the particular provision in which the term ‘like’ is encountered as well as by the context and the circumstances.⁵ In *EC-Asbestos* the AB clarified that the determination of likeness is essentially a determination of the competitive relationship between imported and domestic products. If they compete they are presumed to be like, if they do not, then they must be unlike. Products may be treated differently if they are not like. They may also be treated differently if they are like, as long as the resulting treatment of the imported product is no less favorable in terms of its opportunity to compete in a market. The AB recently confirmed this approach in *EC-Seal Products*. It has further noted that the national treatment obligation requires a comparison of treatment accorded to the group of products imported from the complaining Member on the one hand, and the treatment accorded to the group of like domestic products on the other hand. It clarified that a panel must objectively assess the group of domestic products that are “like” the group of products imported from the complaining Member, and that “once the universe of imported and domestic like products has been identified, the treatment accorded to all like products imported from the complaining Member must be compared to that accorded to all like domestic products.” (WTO 2012c, para. 194).

A key element to consider in the context of climate regulations is the distinction between product characteristics and the manner in which they are produced (process and production methods, or PPMs). As will be discussed below, PPMs may be product-related or non-product-related (Charnovitz 2000, 2002; Gaines 2002;

⁵ The ‘likeness’ of Article III: 4 and Article I GATT is considered to be broader than Article III: 2, since the latter also refers to *directly competitive or substitutable products* (DCS). Likeness in Article III: 2 refers to perfectly substitutable products, while DCS products are imperfectly substitutable, but they are in a competitive relationship. In the analysis of DCS, emphasis is placed on the market place, or in other words, the consumer preferences characteristic. However, DCS and the competitive relationship between products are not to be analysed exclusively by reference to current consumer preferences. According to the AB in *Japan-Alcoholic Beverages*, the word substitutable indicates that the requisite relationship may exist between products that are not, at a given moment, considered by consumers to be substitutes, but which are, nonetheless, capable of being substituted for one another. Likeness in Article I and III: 4 is broader than likeness under Article III: 2, but not broader than DCS.

Wiers 2001). A PPM is a process or production method, which refers to the way in which a product is made. It covers any activity that is undertaken in production, such as activities related to the production of a good or activities in bringing a good to the market and the extraction of natural resources for incorporation into goods. A key question in this regard is whether different process and production methods (i.e. environmentally sound methods vs. environmentally harmful methods), may render products unlike and therefore capable of distinct treatment. This will be discussed in further detail in Sect. 2.2.1, as the AB has recently pronounced on PPMs for the first time in the context of the TBT Agreement.

GHGs emitted in the production process—whether directly by the producer or indirectly by a producer of an input (such as electricity generation)—would not *per se* be considered a determining factor of likeness where an imported and domestic product compete in the relevant market. Therefore, any measure applied to an imported product on the basis of differences in non-product-related PPMs (i.e. most GHG related PPMs) would call for a determination whether such differences affect the competitive relationship between concerned products. If products produced with environmentally sound PPMs and those produced with environmentally harmful PPMs continue to compete, they would be considered like products and could not be treated with distinction in violation of Article III of GATT.

Some have nevertheless argued in the context of price-based GHG measures that the level of GHG emissions attributable to a product should be considered “part of” the imported product. The suggestion is that emissions are covered by the language of Article II.2 (a) which authorises “charges on imports equivalent to internal taxes imposed *in respect of an article from which the imported product has been manufactured or produced in whole or in part.*” Others have also suggested that the broad language of Article III.2, which states that imports “shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products”, also supports the idea that internal climate change measures based on criteria connected to non-product-related PPMs (level of GHGs emitted) could be imposed at the border against imported like products consistently with the national treatment provisions on like products (Pauwelyn 2007; WTO and UNEP 2009). Some others 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.⁶

⁶ Note that the GATT US-Superfund case seems to provide support for treating a tax on energy as eligible for border adjustment. The Panel in that case allowed the United States to impose a tax, domestically applied to certain chemicals, on imports that had used the same chemicals in the production of the imported goods. However, the panel did not specify whether these chemicals had to be physically present in the imported product (GATT 1987). A tax on energy, however, is not necessarily the same as a tax on GHGs. Even if a precedent may exist for taxing inputs that are not physically incorporated, GHG emissions are not an input but an output. Moreover, an interpretation of the Superfund panel report that would allow a tax on GHGs to be adjusted at the border would seem to clash with the conclusions of the 1970 Working Party on Border Tax Adjustments.

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

WTO rules on border adjustments for exports maintain a parallel distinction between direct taxes (on firms) and indirect taxes (on products) and only allow the latter to be rebated at the border on exports. This is in line with the traditional focus of the GATT prohibition on discrimination between products and the fact that non-product related criteria will not *per se* render unlike products that are competing and which are otherwise like. Since climate change taxes tend to target firms, sectors or nations rather than particular products *per se*, such climate change measures could fall foul of WTO disciplines assuming traditional approaches are followed.

The WTO rules maintain a similar distinction between product and non-product based export tax rebates. Article III of GATT and the Agreement on Subsidies and Countervailing Duties (ASCM) allow for export rebates on taxes paid domestically, but only for indirect taxes (on products), not for direct taxes (paid on firms or activities for example); such distinction is again very significant in the context of GHG measures. Indeed, to the extent that most GHG emission charges fall on producers, including at the plant level, such direct taxes could not be rebated upon export. The question is, therefore, whether WTO case law suggests that any use of border tax adjustments (rebate) on exports would be found to be inconsistent with Articles I, II and III of GATT.

Less Favourable Treatment

Once likeness between imported and domestic like products is demonstrated, Article III of GATT on national treatment includes a prohibition on regulations or taxes that treat imported like products less favorably through modifying the “the conditions of competition to the detriment of imported products”. This is the benchmark used to assess the existence of “protectionism” condemned by Article III—i.e. whether the internal measure is applied “so as to afford protection to like

It is noteworthy, however, that the report of the Working Party on Border Tax Adjustments did not specify whether taxes based on non-product-related PPMs can be adjusted at the border. The pre-WTO case US Tuna-Dolphin II shared this view. It was mentioned in paragraph 5.8 that the Ad Note of Article III “could not apply to the enforcement, at the time or point of importation, of laws, regulations or requirements that related to policies or practices that could not affect the product as such, and that accorded less favorable treatment to like products not produced in conformity with the domestic policies of the importing country.” (GATT 1994, para. 5.8)

domestic production”.⁷ While the national treatment obligation of Article III prohibits less favorable treatment of imported like products, it does not require identical treatment (except when dealing with like products narrowly defined under the first sentence of article III:2 for the purpose of price based measures) (WTO 2001, para. 100; 2005a, b, para. 96).

A formal difference in treatment is neither necessary nor sufficient to show a violation.⁸ Whether or not imported products are treated less favorably should be assessed by examining whether a measure modifies the conditions of competition in the relevant market to the detriment of imported products. In other words, the examination of whether less favorable treatment exists must be based on a careful analysis of the contested measure and of its implications in the market place.

In the context of climate change mitigation measures, an argument can be made that while the national treatment obligation of Article III prohibits less favourable treatment of imported like products, it is legitimate to make regulatory distinctions within the treatment accorded to foreign products on the basis of a GHG-PPM so long as similar GHG-PPM imported and domestic products are treated similarly. Such treatment would not constitute ‘less favourable treatment’ and therefore would not necessarily constitute a violation of the national treatment obligation. This has been developed in the context of the TBT Agreement and will be discussed in Sect. 3 below. However, the AB has expressly rejected the importation of the ‘legitimate regulatory distinction’ into Articles I and III of GATT in the recent case *EC-Seal Products*. It therefore seems that this may not be a relevant consideration within the context of the GATT.⁹

In the context of (import) border adjustments that may be defended in terms of carbon leakage but which are motivated to a significant degree by competitiveness concerns, a different problem arises—that of establishing cost equivalence. This problem also arises in the context of GATT Article XX and Article 2.1 of TBT. A GHG-related dispute over differential carbon constraint costs that had led to the imposition of border adjustment measures may call for a comparison between different kinds of measures to determine whether less favourable treatment was accorded to foreign products. For example, if an importing country maintained a cap and trade system (also called emissions trading) and an exporting country constrained carbon through direct regulation, a comparison would be required

⁷ “. . .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.’” (WTO 2001, paras. 96, 98)

⁸ When dealing with a domestic non-price based measure, the AB in *Korea—Various Measures on Beef* reversed the Panel, which had concluded that a regulatory distinction based exclusively on the origin of the product necessarily violated Article III. The Appellate Body emphasized the fact that “differential treatment” may be acceptable, so long as it is “no less favourable”. Article III only prohibits discriminatory treatment which “modifies the conditions of competition in the relevant market to the detriment of imported products”.

⁹ See Sect. 2.3 below.

between a price-related and a non-price related regime. Climate change mitigation policies may involve price or non-price interventions—including taxes, GHG permits or allowances, prescriptive regulation,¹⁰ economic (dis)incentives of one form or another, and subsidies.¹¹ While these different approaches can all be evaluated in terms of their consequences for emission levels (Baron et al. 2007), the cost imposed by regulatory or administrative policy measures (standards, voluntary agreements or unilaterally-set emission or efficiency targets) are far more difficult to assess.¹² However, economic analysis cannot fully project the costs of a regulation or a standard without making simplifying assumptions.

Quantitative Restrictions

Article XI of GATT prohibits all export and import quantitative restrictions. Article XI is relevant if a GHG non-price based measure is in the form of an import or export quota or prohibition. Article XI prohibits quantitative import and export restrictions enforced at the border. If, for example, a GHG programme or mechanism to control the level of GHGs emitted by imported products or foreign producers resulted in the maintenance of quantitative restrictions (on imports or on exports), Article XI could become relevant. The mechanism used to control GHG-related imports might not be the same as that imposed on domestic producers.

Whether or not Article XI is relevant in the context of a GHG measure will depend on whether or not the measure is properly characterised as a “quantitative restriction”. However, it may not always be easy to determine whether a measure falls within Article XI, or is rather the kind of internal regulation that can be dealt with under Article III.

¹⁰ 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.

¹¹ An extensive literature—not reviewed here—has developed on the relative merits of alternative carbon constraint policies. Taxes, for example, provide cost certainty for businesses because the tax rate is known in advance. Emissions trading potentially offers lowest-cost solutions for the economy, but the price of allowances (or permits) is not known in advance and will be determined by trading in the market.

¹² Comparability of costs of different climate change mitigation policies can be analysed either from a top-down level, through general equilibrium models, or using bottom-up cost analyses. In theory, it is possible to render different policy-imposed costs comparable by attaching values to all relevant elements in production and output pricing that are attributable to the policy intervention in question (Baron et al. 2007). 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.

However, there is no easy rule and each situation must be determined on its own facts. Recall that under the GATT Tuna case, the Panel considered that the PPM related domestic regulation on the method of fishing tuna could not be covered by the discipline of Article III of GATT because Article I and III are concerned with the regulations related to “products” only, and it was thus automatically considered a border import restriction in violation of Article XI. However, in the more recent *WTO US-Tuna II*, the AB did not raise any issue on whether the method of fishing tuna, a PPM, would contradict any findings of likeness between two tuna products based on their method of fishing tuna in a dolphin friendly or unfriendly manner, and therefore the AB did not go into the relevance of Article XI of GATT for PPMs. At this stage therefore it is unclear in the jurisprudence whether PPMs may be covered by Article XI of GATT.

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

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

GATT Article XX Justifications

Article XX of GATT 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 measure that is aimed at protecting the environment may have the consequence of restricting trade. However, Members are authorised to pursue certain policy objectives, including environmental ones. Article XX of GATT provides for two main grounds to justify an environment-related measure: where the measure is necessary to protect human, animal or plant life or health (Article XX(b)); or where it relates to the conservation of exhaustible natural resources (Article XX(g)). Although climate change related policy is not expressly referred to in Article XX, such policies can be viewed as a policy both for the protection of life and health of people, plants and animals, and as a policy for the conservation of the climate

system as an exhaustible resource (Holzer 2014). As such, a measure may be considered under both paragraphs (b) and (g) of Article XX simultaneously.¹³

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

The AB has observed that “conditioning access to a Member’s domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the exceptions . . . of Article XX.” (WTO 1998, para. 121).¹⁴ Members have also recognized that certain environmental concerns may be of a trans- boundary or global nature. This was reflected in a report by the WTO’s Committee on Trade & Environment (CTE).

The CTE notes that “. . . governments have endorsed, in the results of the 1992 U.N. Conference on Environment and Development, their commitment to Principle 12 of the Rio Declaration, which states that “[u]nilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global problems should, as far as possible, be based on an international consensus.” There is a clear complementarity between this approach and the work of the WTO in seeking cooperative multilateral solutions to trade concerns. The CTE endorses and supports multilateral solutions based on international cooperation and consensus as the best and most effective way for governments to tackle environmental problems of a transboundary or global nature. (para. 171)”.

The AB referred to this report, as well as the international community’s attitude towards the importance of the environment as reflected in the reference to “sustainable development” in the preamble of the WTO Agreement and Principle 12 of the Rio Declaration on Environment and Development, in support of its decision in *US-Shrimp*.

Finally, as regards the possibility that a measure may be a disguised restriction on trade, such protectionist intent can be discerned from its design, architecture and revealing structure. This could involve analyzing the overall strategy adopted to

¹³ Note that one WTO Member could arguably invoke the paragraph (a) measures necessary to protect public morals, as the survival of humans via GHG actions might be argued to be an action of public morals.

¹⁴ The AB reaffirmed in this case (contrary to the conclusions reached in the two US-Tuna reports decided by GATT panels) the right of Members to take even unilateral trade-restrictive environmental measures so long as a balance of rights and obligations is maintained “between the right of a Member to invoke one or more of the exceptions of Article XX. . . , on the one hand, and the substantive rights of other Members under the GATT 1994, on the other hand”—as provided by the chapeau of Article XX.

reach the objective and could involve looking at the transparency and predictability of the process. The measure as a whole will be analyzed, not merely its discriminatory element.

Measure Necessary for the Protection of Health

The evolution of WTO legal rulings helps in the interpretation of criteria determining the WTO-legitimacy of public policy action justified under the exceptions of Article XX. Early on, the AB developed a three-pronged Article XX necessity test involving a “weighing and balancing” of the values at issue for analysis under the first step mentioned above (WTO 2000b, paras. 161–164, 175–176). The criteria related to the: (i) importance of the value protected; (ii) (effective) contribution of the measure to attaining the stated public policy objective; and (iii) trade restrictiveness, including in terms of the existence of less trade-restrictive and reasonably available alternative measures that guarantee the desired level of attainment of the public policy objective (WTO 2000b, para. 162).

The AB has stated in *Korea-Beef*, when discussing the necessity test for the first time (in the context of an article XX(d) invocation), that “[t]he more vital or important those common interests or values are, the easier it would be to accept as ‘necessary’ a measure designed as enforcement instrument.” (WTO 2000b, para. 162) In *EC-Asbestos*, the AB clarified that health is “both vital and important in the highest degree.” (WTO 2001, para. 172) Similarly, in *Brazil-Tyres*, the AB mentioned, “few interests are more “vital” and “important” than protecting human beings from health risks” and that “protecting the environment is no less important.” (WTO 2007, para. 144) In addition to being important, the measure has to make a meaningful contribution to the protection of human, animal, plant life or health. A contribution exists when there is a genuine relationship of ends and means between the objective and the measure.

The AB’s approach in *Brazil-Tyres* suggested a minimum threshold that must be met in order for a measure to be deemed necessary: that the measure must bring about a material contribution to the achievement of its objective. However, the AB has recently clarified in *EC-Seal Products*, that the approach in *Brazil-Tyres* was not to suggest a generally applicable threshold, rather, the case was more limited to cases where the measure produces such severe effects on international trade as those resulting from an import ban, and it would be difficult to find the measure necessary unless it satisfied that the measure is apt to make a material contribution to the achievement of its objective (WTO 2014). It therefore seems that the more restrictive a measure is on international trade, the more of a contribution it must make to the objective in order to be deemed “necessary.” The AB in *Brazil-Tyres* insisted that such an assessment on contribution was to be qualitative and quantitative and noted in particular that the contribution does not have to be immediately observable, particularly with regards to measures adopted to address climate change, since the effect of such measures can only be evaluated over time (WTO 2007). In such cases related to climate change, the AB added that “it may prove

difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive policy” (WTO 2007, para. 151). It is therefore unclear how the element of material contribution may be assessed for measures addressing climate change since the effects may not be immediately evident and a single measure may part of a more comprehensive policy. The issue of “alternatives” has thus become particularly pertinent to WTO Members when invoking environmental or health policies to justify a trade restriction otherwise inconsistent with GATT.

It is for the complainants to prove that there is a WTO-consistent or less trade-restrictive alternative reasonably available for achieving the desired aim of the respondent.¹⁵ Whether alternatives are reasonably available depends on similar factors such as (i) the extent to which the alternative measure contributes to the realization of the end pursued; (ii) the difficulty of implementation; and (iii) the trade impact of the alternative measure compared to the measure at issue in the dispute. In addition to being ‘reasonably available’, the alternative measure must also achieve the level of protection sought. A Member does not have to explore and exhaust any possible alternative measure—it only has to address those potential alternatives that are raised by the complainant. Further, a measure justified on environmental or public health grounds cannot be rejected by pointing to a less trade restrictive alternative unless that alternative is technically and financially within reach for the specific Member concerned, and unless it provides at least the same level of protection as that desired by the Member adopting the measure (WTO 2005a, b, 2007). Given these conditions, it therefore seems unlikely that a climate change measure would be defeated solely on the basis of reasonably available alternative measures.

Measure Related to the Conservation of Natural Resources

As argued, in order to rely on the flexibilities of Article XX(b) and (g), a measure must be proven to be either necessary to protect human, animal or plant life or health (paragraph (b)), or it must relate to the conservation of exhaustible natural resources and be made effective in conjunction with restrictions on domestic production or consumption (paragraph (g)). Article XX(g) is particularly relevant in the climate change context since changes in the climate lead to the depletion of

¹⁵ The AB held in *EC-Asbestos* that whether there are reasonably available alternative measures is part of the “weighing and balancing process” to determine whether a trade restrictive measure is necessary, as referred to in (WTO 2000b). This is an area where the jurisprudence has taken a 180° turn. In the GATT days, it was understood that the country invoking the exception would have to prove the absence of alternatives. Under the WTO, the Appellate Body changed this and concluded that “while the responding Member must show that a measure is necessary, it does not have to show, in the first instance, that there are *no* reasonably available alternatives to achieve its objectives” (WTO 2005a, b, para. 309), see also (GATT 1991, 1994).

other exhaustible natural resources, biodiversity, forestry, fisheries etc. These problems are likely to be exacerbated in the future. Article XX(g) may therefore be used more frequently to address problems associated with climate change as they impact exhaustible natural resources in the future.

Article XX(g) raises additional considerations in the context of climate change. Firstly, for such measures to succeed under paragraph (g), they must relate to the “conservation of natural resources”. In *US-Shrimp*, the AB interpreted the term ‘exhaustible natural resources’ as including both living and non-living natural resources (WTO 1998, paras. 128–131). In *US-Gasoline*, the Panel ruled that clean air is an exhaustible resource because it has human value and is thus a resource, it is natural, and even though it is renewable, it can be depleted and is thus exhaustible (WTO 1996b). It has been argued that preserving the global climate is analogous to the preservation of clean air in *US-Gasoline* (Condon 2009). In the alternative, it has been suggested that the issue of GHG emissions in the atmosphere could be viewed as a clean air issue altogether (Condon 2009), thus squarely within the scope of Article XX(g). Once a measure is determined to concern the conservation of a natural resource, the next step is to consider whether the measure “relates to” the objective pursued. In order to demonstrate this requirement for Article XX(g), there must be a “close and genuine relationship of ends and means” and an examination of “the relationship between the general structure and design of the measure. . . and the policy goal it purports to serve.” (WTO 1998, para. 136) In its interpretation of the paragraphs of GATT Article XX in *US-Gasoline*, the Appellate Body examined whether “the means (the challenged regulations) are, in principle, reasonably related to the ends” and whether “such measures are made effective in conjunction with restrictions on domestic production or consumption” (“... a requirement of even-handedness in the imposition of restrictions”).¹⁶ An additional question arises regarding the jurisdictional nexus between the Member enacting the measure and the natural resource in question. It may be argued that there is a sufficient nexus between Members and the global climate, and thus the exhaustible natural resources affected by it.

Analysis of the Chapeau of GATT Article XX

In regard to the second step of Article XX of GATT noted above, a Member’s right to rely upon one of the policy objectives covered by the exceptions is limited

¹⁶ However, in setting out this test it also insisted on the distinct wording of the paragraph XX (b) and paragraph XX(g) exceptions, saying that their coverage and scope of application were very different. Paragraph XX(g)—measures relating to the conservation of natural resources—was considered broader in reach, while the XX(b) exception—measures necessary for the protection of health—required a more stringent “necessity” test. However, the Brazil-Retreaded Tyres jurisprudence, further discussed below, seems to have brought these two tests closer so that, to a large extent, the relationship required by the two paragraphs is similar, bringing closer the operation of the environment and health policy exceptions.

by the requirement that it must comply with the introductory clause (or chapeau) of those provisions. The purpose of the introductory clause is to prevent the “abuse or illegitimate use of the exceptions to substantive rules available in Article XX.”

An important part of the non-discrimination requirement is that Members must take into account the different conditions that may occur in the territories of other Members. This obligation is twofold, since discrimination occurs (i) when countries in which the same conditions prevail are treated differently and (ii) “when the application of the measure does not allow for an inquiry into the appropriateness of the regulatory program for the conditions prevailing in those exporting countries.” The prohibition against “arbitrary or unjustifiable discrimination between Members where the same conditions prevail” in the chapeau seems to recognize that different conditions in different Members call for different treatment (WTO 1998, para. 164). The same regulation might not be appropriate for countries where the same conditions do not prevail.¹⁷ In a similar vein, the *EC-Tariff Preferences* finding interpreted language in the Enabling Clause to allow discriminatory preferential treatment conditional upon compliance with development criteria so long as countries in similar conditions were treated similarly (WTO 2004).

This is particularly important in the climate change context, since different conditions and capabilities have been expressly recognised through the principle of “common but differentiated responsibilities and respective capabilities” in the preamble and Article 3 of the UNFCCC. Moreover, this principle as enshrined in the UNFCCC calls for developed countries to take the lead in combating climate change, and may prevent the application of GHG measures against developing countries to a certain extent.

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

¹⁷ 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 be needed by developing countries, which would be in line with the ‘*common but differentiated responsibilities and respective capabilities*’ principle under UNFCCC. Thus, any measure must not be rigid or inflexible and should involve a comparison with other countries (WTO 1998, para. 177).

In order to prevent arbitrary or unjustifiable discrimination the measure needs to be sufficiently flexible and consider measures that other Members have enacted that are comparable in effectiveness to address the same policy objectives. A country may be obliged to impose lower requirements or none on countries that have their own legislation (comparable in effectiveness). Moreover, some have suggested that the same regulation may not be appropriate for countries where the same conditions do not prevail, for example as between developing and developed countries, as noted above. A country may be obliged to consider whether developing countries should carry the same burden as developed ones—particularly in the climate change context, given the principle of common but differentiated responsibilities and respective capabilities. Particular difficulty further arises in this context due to discrepancy between sectorial actions within and between Members.

The non-discrimination element of Article XX also contains the obligation of good faith; a country should engage in serious efforts to negotiate and conclude an agreement to address concerns before resorting to trade restrictive measures and an Article XX justification. The WTO recognizes the need for concerted and cooperative efforts and the ruling in *US-Shrimp* indicated that efforts should be made to secure the legitimate policy goal through negotiations and consensus instead of unilateral and non-consensual procedures. Such negotiations should be conducted with all Members and all need to be given similar opportunities to negotiate. However, there is no obligation to reach an agreement before being able to invoke GATT Article XX. This has been an important development, since it carries the recognition that, in principle, Members may act unilaterally to protect the environment.

No clear test exists for the application of the provisions of the chapeau of Article XX. However, a review of the cases in which Article XX has been addressed, as well as the points made above, suggests a number of factors that may be relevant in assessing whether the application of a measure by a Member complies with the chapeau requirements (depending on the circumstances of any particular case). These include: (i) if there is discrimination, whether that discrimination was foreseen by the Member, or whether it was merely inadvertent or unavoidable; (ii) whether “serious, good faith efforts” have been made by the Member to lessen any discriminatory effects; (iii) whether similar or comparable opportunities have been provided by the Member, or consideration given, to all exporting Members to negotiate; (iv) whether the application of a measure is flexible enough to take into account the specific conditions prevailing in the exporting Member’s economy; and (v) whether the application of the measure complies with other WTO standards, such as in relation to due process and transparency (WTO 1998, 2004).

In WTO dispute settlement, it has most often been a failure to demonstrate compliance with the introductory chapeau of Article XX of GATT that has led to findings that certain measures are not justified by those provisions. But, as in the *US-Shrimp* case, following such a finding, Members may make changes to their original measure in order to bring it into full compliance with Article XX of GATT.

The language of the chapeau of Article XX also implies that while the importing Member invoking Article XX cannot insist on a particular policy approach towards a public policy objective, it can nevertheless require that exporting Members maintain specific environment policies and measures that are comparable in effectiveness in dealing with the policy concern it is invoking (WTO 2004).¹⁸ Article XX would therefore require a comparison of the effectiveness of alternative policy approaches adopted by Members. As with the assessment of the comparative costs of alternative climate change policies discussed above, measuring comparable effectiveness in terms of environmental objectives is undoubtedly challenging. In the case of climate change policy, the focus of the comparison would be the health or environmental effectiveness of the policies subject to comparison.

Utility of GATT Article XX to Address Climate Change Concerns

It may be concluded from the above that the scope of Article XX could be interpreted to provide policy space for GHG-related measures, even if *a priori* WTO-inconsistent, could nonetheless be justified.

However, Article XX and the policy space provided within the WTO to pursue climate change concerns may not be adequately suited to address some of the more general problems associated with climate change. In particular, some Members point out that they have highly productive industries and agriculture and thus may be higher GHG emitters, although they are not the ultimate consumers of the goods produced within their borders; such goods are mainly exported for consumption in industrialized states. Yet, these Members may end up being victimized by border adjustments to offset their higher emissions, particularly due to pressure from industries in industrialized countries that have higher environmental (and thus financial) costs. This is symptomatic of a more general problem: less environmentally friendly industries are shifted to developing countries with lower regulation and lower costs, while the goods produced are destined to be consumed in those same industrialized countries complaining of competitiveness concerns. A vicious cycle is thus created, and some may be unduly burdened by the shift of hazardous industries into their jurisdiction to produce goods destined to be shifted back to the industrialized country, while the recipient of the industry may be punished with

¹⁸ It may oblige a country to impose lower or no requirements on countries that have their own (comparable in effectiveness) climate legislation. In the first *US-Shrimp* case (WTO 1998), 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. 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.

border adjustments as a result of the higher emissions from these hazardous industries. International cooperation is the key to addressing this general problem given the limitation of unilateral action through the WTO in this context.

2.2 *Technical Barriers to Trade*

Several technical regulations exist on GHG mitigation action. Regulations on equipment efficiency, which commonly take the form of minimum efficiency performance standards (MEPS), are generally applied on products in the residential, commercial and automotive sectors. Regulations can also be used to influence full process efficiency and/or process configurations in industrial sectors. For example, cement plants may be required to attain certain overall benchmark efficiency levels, or iron and steel plants may be required to use coke dry quenching processes. More typically, governments define energy efficiency goals for specific processes, factory or industry sector, based on best domestic or international practice—enumerated as benchmark targets—through negotiated agreements or non-binding targets. Most of these regulations are technical barriers to trade subject to the disciplines of the TBT Agreement. The TBT Agreement regulates the application of technical regulation which cannot be discriminatory vis-à-vis all like imports and like domestic products. Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues can therefore also be covered by the TBT Agreement. One of the legal challenges in the area of trade and climate change is that many measures addressing climate change concerns will be subject to multiple WTO provisions; in the context of non-discrimination, a single measure will often be covered by both GATT and TBT disciplines. The legal difficulty is to ensure that the mutual application of the GATT and TBT is harmonious and effective. Under the WTO, as a general rule, the rights and obligations under these agreements are cumulative and simultaneously applicable. The AB has emphasized that:

We agree with the statement of the Panel that: It is now well established that the WTO Agreement is a ‘Single Undertaking’ and therefore all WTO obligations are generally cumulative and Members must comply with all of them simultaneously ... (WTO 1999, para. 74)

In light of the interpretive principle of effectiveness, it is the duty of any treaty interpreter to ‘read all applicable provisions of a treaty in a way that gives meaning to all of them, harmoniously’ (WTO 2000a, para. 81).¹⁹ An important corollary of this principle is that a treaty should be interpreted as a whole, and, in particular, its sections and parts should be read as a whole (WTO 1999, para. 81).

This was a simple application of the principle of effective interpretation in the context of the WTO Single Undertaking.

¹⁹ See also Appellate Body Reports including *United States—Gasoline* (WTO 1996b, p. 23), *Japan—Alcoholic Beverages II* (WTO 1996a, p. 12) and *India—Patents* (WTO 1997, para. 45).

Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues is also covered by the TBT Agreement. The AB has confirmed the policy space available in the TBT to pursue such climate change related policies through its interpretation of TBT Article 2.1 and 2.2 along the lines of the existing GATT balance between Member's market access obligations and their right to give priority to non-trade concerns. Technical regulations refer to mandatory regulations applied to an identifiable product that lays down one or more characteristics of the product or their PPMs. Product characteristics include features and qualities intrinsic to the product as well as those that are related to it, such as means of identification, presentation and appearance of a product (WTO 2001). The TBT Agreement lacks an explicit provision relating it to GATT, although its general relationship may be similar to that of the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). The TBT provisions often add to those of Article III:

We observe that, although the TBT Agreement is intended to 'further the objectives of GATT 1994', it does so through a specialized legal regime that applies solely to a limited class of measures. For these measures, the TBT Agreement imposes obligations on Members that seem to be different from, and additional to, the obligations imposed on Members under the GATT 1994. (WTO 2001, para. 80)

Any reading of the TBT Agreement and GATT must not be such as to discourage compliance or reduce incentives to comply with the TBT Agreement. Unlike the SPS Agreement, compliance with the TBT Agreement does not give rise to a presumption of compliance with GATT. Compliance with an international standard (Article 2.5 TBT), however, gives rise to a presumption of necessity of the measure under Article 2.2 of the TBT. But in *WTO US-Tuna II*, the AB clarified that only international standards that come from an institution whose membership is open to all WTO Members are considered relevant standard under Article 2.4 of TBT. In the *US-Tuna II* dispute, the AB decided that the regional body in question could not produce a relevant standard within Article 2.4 of TBT because such regional body was not "open to all WTO Members" because new members had to be invited and this was not a mere formality. Accordingly, standards developed by the UNFCCC could only be a relevant standard within the meaning of Article 2.4 of TBT if it was considered that the UNFCCC is open to all WTO Members.

Since the policy objectives covered by Article 2.2 of TBT are not limited as those mentioned in Article XX of GATT, it is conceivable that a measure based on a policy covered by Article 2.2 TBT could not be covered by any provisional justification under any of the sub-paragraphs of Article XX of GATT; for example is consumer information a policy covered by any of the subparagraphs of GATT Article XX. In that context, in *WTO US-Tuna II* which stated, the AB reversed the panel finding that a measure inconsistent with Article 2.1 of TBT did not need to be assessed under Article III of GATT.

The AB has recently indicated that the overall logic and general position behind the balance between GATT market access rules and Article XX objectives can cross fertilize into provisions of the WTO beyond the GATT. In the recent TBT cases, the

absence of specific provisions granting exceptions to the primary obligations of the TBT Agreement have not constituted a bar to considering legitimate justifications traditionally recognized in Article XX of GATT. Support for this cross-fertilization of Article XX of GATT style considerations was found in the context provided by Article 2.2 and the fifth and sixth recitals of the TBT Agreement which recognizes that

no country should be prevented from taking measures [...] for the protection of human, animal or plant life or health, of the environment [...] subject to the requirement that they are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade. (TBT Agreement 1995, para. 6)²⁰

In these cases, the AB referred to the case law made in connection with Articles III and XX of GATT and introduced the notion of “legitimate regulatory distinction” in the interpretation and application of the “less favourable treatment” aspect of the national treatment obligation in Article 2 of the TBT Agreement. Moreover, in the interpretation of Article 2.2 of the TBT Agreement, prohibiting technical regulations more restrictive than necessary to fulfil a legitimate objective, the AB referred to the preamble of the TBT Agreement and adapted to its context the GATT Article XX necessity test jurisprudence. The AB has thus confirmed the policy space available in the TBT Agreement for the pursuit of non-trade concerns, and may be argued to include measures aimed at addressing climate change.

The first step under any TBT claim is to determine whether the measure at issue is a “technical regulation” as defined in TBT Annex 1.1: “Document which lays down product characteristics or their related processes and production methods.” There is controversy whether technical regulations based on non-product related PPMs fall within the scope of the TBT Agreement, and even as to what PPM measures are product-related are not. Given the policy space available under the TBT to address climate change concerns, and the potential use of PPMs to address environmental concerns, it is important to consider what measures constitute technical regulations within the scope of the TBT Agreement.

2.2.1 Technical Regulation to Trade and PPMs

For environmentalists, PPMs serve to distinguish between goods produced in an environmentally sound manner, and those that are produced in a manner that harm the environment, although both sets of products may look alike (Gaines 2002; Charnovitz 2002). From a climate change perspective, PPMs are said to represent a valuable tool of environmental policy, a chance to give teeth to environmental norms and obligations where goods following environmentally sound PPMs are not like other goods that do not comply with said PPM requirements (Gaines 2002; Charnovitz 2002). From a trade perspective, PPMs may represent a risk of

²⁰ See the example: Appellate Body Report (WTO 2012b, para. 373).

protectionist distinctions based on non-transparent policies and criteria, threatening the market access guarantees under the WTO Covered Agreements (Read 2011). The debate and controversies surrounding PPMs are beyond the scope of this article.²¹ Nonetheless, PPMs are very relevant in the climate change context and are expressly referred to in Annex 1.1 of the TBT Agreement. A PPM can come in different forms. The purpose of including PPMs in the context of climate change policies is to incorporate the (social/environmental) cost of production in the price of products so as to give an incentive to both producers and consumers to limit the use of carbon intensive or environmentally unfriendly products.

Traditionally, one central element of the debate surrounding PPMs is the so-called distinction between product-related PPMs and non-product-related PPMs as noted above.²² There is no generally accepted legal definition of a product-related or non-product-related PPM. The conventional view seems to be that product-related PPMs are those that alter, leave a trace, effect or are detectable in the final product; and non-product PPMs do not (Charnovitz 2002; Conrad 2011; Gaines 2002). Under the GATT, there was significant debate on whether a measure aiming at a process or production method that made no physical impact on the product could be covered. GATT panels in *Tuna-Dolphin I* and *Tuna-Dolphin II*, two un-adopted GATT Panel Reports, found that such PPM regulations were not covered under Article III of GATT, and instead violated GATT Article XI, because Article III is concerned only with regulations on “products” (GATT 1991). However, the TBT Agreement covers “products, processes or production methods” in the definition of “technical regulation” under Annex 1.1. In the recent WTO *US-Tuna II*, the fact that the United States measure regulated a PPM on imported tuna (the method of fishing tuna) was not discussed by the AB, but the measure was found to be within the scope of the TBT Agreement.²³ This could, however, be due to the fact that the measure was a label, and labels are expressly included in the scope of the TBT in its Annex 1.1. This will be discussed in the next section.

²¹ A central element in the PPM debate is the product-process distinction or ‘product-process doctrine’ as coined by Hudec in 1998, who observed that “under this so-called ‘product-process doctrine’, product distinctions based on characteristics of the production process, or of the producer, that are not determinants of product characteristics are simply viewed as a priori illegitimate” (Hudec 2003, pp. 619–649; Conrad 2011, pp. 25–31). The product-process distinction has been severely criticized (Howse and Regan 2000), and Hudec (2000) noted that the distinction posed a potentially lethal threat to process based regulation.

²² The distinction between product related and non-product related PPMs emerged through the debate surrounding the product-process doctrine, referred to in Appellate Body Report (WTO 1999), and has since become a widely accepted analytical tool (Conrad 2011).

²³ The AB did not rule on the applicability of the GATT to that measure, however, since it found it to be in violation of the TBT Agreement, and Mexico did not request it to complete the legal analysis in the event it overturned the Panel’s findings in relation to the GATT (which it did, finding that the Panel exercised a “false judicial economy” in according the same reasoning to Article 2.1 of the TBT Agreement and Article I and III of the GATT); see Appellate Body Report (WTO 2012d).

The AB has recently expressly pronounced on PPMs for the first time in *EC-Seal Products* and indicated that only product-related PPMs fall within the scope of the TBT Agreement.²⁴ The AB has clarified that only product-related PPMs are within the scope of the TBT Agreement, but it is still unclear what constitutes a product-related PPM. If the conventional view is maintained, that only those PPMs that affect, leave a trace or are detectable in the final product are product “related”, then a significant number of PPMs may not be within the scope of the TBT Agreement. Given that the majority of potential PPMs to address climate change concerns may not qualify under this view, there are significant implications of this AB ruling. It is noted that most GHG related policies target industries or firms rather than specific products, which makes it harder to secure compliance through the flexible policy space of the TBT.

However, the non-application of the TBT Agreement to non-product-related PPM regulations (a term to be defined) 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 of GATT, and may find justification under Article XX. To remove non-product-related PPM regulations from the coverage of the TBT Agreement removes the application of the transparency provisions of the TBT at the detriment of developing countries and others whose exports face those technical regulations. One wonders about the impact of a situation where product-related PPM technical regulations are subject to the open list of policy objectives under the TBT, while the less transparent non-product-related PPM technical regulations—possibly justifiable under the closed list in Article XX of GATT—are not. The determination of what PPM measures are product-related depends on how one reads “characteristics” of the products and “their related process and production methods”, an issue not yet fully assessed by the WTO case law.

²⁴ The AB noted that “[t]he definition of a technical regulation further provides that such a regulation may prescribe “product characteristics or their related [PPMs]”. The use here of the disjunctive “or” indicates that “related [PPMs]” may play an additional or alternative role vis-à-vis ‘product characteristics’ under Annex 1.1’. It observed in this regard that “[a] plain reading of Annex 1.1 thus suggests that a “related” PPM is one that is “connected” or “has a relation” to the characteristics of a product. The word “their”, which immediately precedes the words “related processes and production methods”, refers back to “product characteristics”. Thus, in the context of the first sentence of Annex 1.1, we understand the reference to “or their related processes and production methods” to indicate that the subject matter of a technical regulation may consist of a process or production method that is *related* to product characteristics. In order to determine whether a measure lays down related PPMs, a panel thus will have to examine whether the processes and production method prescribed by the measure has a sufficient nexus to the characteristics of a product in order to be considered related to those characteristics.’ See Marceau (2014) and WTO (2014, para. 5.12).

2.2.2 The TBT Prohibition Against Non-Discrimination

The recent AB Reports in *US-Clove Cigarettes*, *WTO US-Tuna II* and *US-COOL* reiterate that technical regulations will, by their very nature, create distinctions between products according to their characteristics or PPMs.²⁵ In the GATT context, a less favourable treatment of imported products contrary to Articles I and III can be justified by a responding Member under the exceptions in Article XX. In the TBT Agreement, where there is no Article XX exception type provision, the AB has determined that the existence of “less favourable treatment” is not merely based on whether there is any detrimental impact of the measure on imports, but also on whether this impact stems from “legitimate regulatory distinctions”. Accordingly, under the TBT Agreement, a detrimental impact arising from “legitimate regulatory distinctions” would not amount to “less favourable treatment” in the first place. This line of argument lends itself well to the type of measures used in the climate change context, those that draw a legitimate distinction between goods produced in an environmentally sound manner and those that are not.

In *US-Clove Cigarettes* the AB noted also that “the existence of a detrimental impact on competitive opportunities for the group of imported vis-à-vis the group of domestic like products is not dispositive of less favourable treatment under Article 2.1 of TBT. Instead, a panel must further analyse whether the detrimental impact on imports stems exclusively from a legitimate regulatory distinction rather than reflecting discrimination against the group of imported products.” (WTO 2012c, para. 182)²⁶ The term “legitimate distinction” was interpreted as requiring an examination of whether the measure was pursued in an even-handed manner or whether it created discrimination (WTO 2012b, para. 341). Under this interpretation, it seems that the specific detrimental impact, not the overall policy at its base, must be justified if the regulatory distinction is legitimate, i.e., designed and applied in a balanced manner. In the *US-Clove Cigarettes* dispute, the measure at issue pursued the legitimate public health objective of reducing youth smoking. However, the exclusion of (mainly domestic) menthol cigarettes from the scope of the measure created a discriminatory impact in favour of menthol cigarettes vis-à-vis clove cigarettes—a distinction between the two types of cigarettes for which there was no legitimate policy justification.

²⁵ See Marceau and Wyatt (2013, p. 291) and Marceau (2013, p. 36) for an in depth discussion of these cases.

²⁶ In all three cases applying TBT Article 2.1, the overall *objectives* that the US identified for each measure were ultimately accepted as legitimate. Nonetheless, in each case, the US regulations were determined to be inconsistent with Article 2.1 of the TBT Agreement because their detrimental impacts did not stem exclusively from legitimate regulatory distinctions.

2.2.3 Technical Regulation to Trade Cannot Be More Restrictive than Necessary

Importantly, the *US-Tuna II (Mexico)* and *US-COOL* reports interpreted Article 2.2 of TBT for the first time. Article 2.2 adds to the basic non-discrimination obligation of Article 2.1 by requiring that technical regulations are not to be “more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create”. This provision, by linking necessity to the existence of less trade-restrictive alternative measures, is strongly reminiscent of the legal test elaborated under Article XX(b) and (d) already in the GATT era prior to the conclusion of the TBT Agreement.

In determining whether or not a measure is “more trade-restrictive than necessary to fulfil a legitimate objective”, *the degree of contribution* made by the measure to the legitimate objective at issue must be considered (WTO 2012c, paras. 315–317). According to the AB, the precise inquiry in this respect is as to what degree the challenged technical regulation, as written and applied, is capable of contributing and/or actually contributes to the achievement of the legitimate objective pursued by the Member (WTO 2012b, c).²⁷ This part of the new Article 2.2 of TBT test could be seen as largely mirroring the latest jurisprudence under Article XX of GATT as discussed above. As noted, assessing the contribution of a measure addressing climate change concerns is particularly difficult, as acknowledged by the AB, since it may be difficult to isolate the contribution of a single measure that forms part of a more comprehensive policy, and because the results obtained from climate change related measures may only be evaluated “with the benefit of time.” (WTO 2007, para. 151) In the climate change context, it is unclear how contribution may be meaningfully assessed and what degree is required to satisfy the necessity element of Article 2.2 of TBT as well as GATT Article XX.

Second, because Article 2.2 of TBT prohibits technical regulations “creating unnecessary obstacles to international trade”, the AB has noted that this requires an assessment of *the trade-restrictiveness* of the measure understood as “restrictions on international trade that exceed what is necessary to achieve the degree of contribution that a technical regulation makes to the achievement of a legitimate objective” (WTO 2012d, para. 319).

Then, following the detailed text of Article 2.2 of TBT, it is necessary to assess *the nature of the risks at issue* and the gravity of consequences that would arise from *non-fulfilment of the objective(s)* pursued by the Member through the technical regulation (WTO 2012b, para. 377; 2012d, para. 321). The AB has also made clear that, *in most cases*, panels will be called upon to compare the challenged

²⁷ Paragraph 317 in *US-Tuna II (Mexico)* report refers to paragraph 252 of Appellate Body Report, *China – Publications and Audiovisual Products* (2009). Recall also that in its *US-Tuna* report, the Appellate Body made it clear that “fulfil” does not necessarily mean “fully meet” in *US-Tuna II (Mexico)* report (WTO 2012d, para. 2012d).

measure and possible *reasonably available alternative measures* to assess, *inter alia*, whether the proposed alternative is less trade-restrictive and would make an equivalent contribution to the legitimate objective at issue (WTO 2012b, para. 378; 2012d, para. 322). Again, this aspect of the TBT Article 2.2 test bears a close affinity to the less trade-restrictive alternative test elaborated under GATT Article XX and described in Sect. 2.2 above. Indeed, the AB has even made a point of establishing the same burden of proof mechanism for reasonably available alternative claims under TBT Article 2.2 and GATT Article XX, with the complaining Member required to establish a *prima facie* violation of TBT Article 2.2 through, *inter alia*, the proposition of an alternative that the responding Member must then rebut (WTO 2012b, para. 379).

As a whole, the elements of the test under Article 2.1 and 2.2 of the TBT Agreement as developed by the AB draw importantly on the corresponding elements of the test used under Article XX of GATT 1994. The overall approach, consisting of an assessment of the necessity of a measure by looking at its degree of trade-restrictiveness and the extent to which it contributes to its objective, then a comparison of this to possible alternative measures, was first developed in the context of GATT Article XX. In *EC-Seal Products*, the AB has further clarified the relationship between the GATT and TBT, and noted that the balance between the desire to avoid creating unnecessary obstacles to trade and the right of Member's to regulate and pursue non-trade concerns is, in principle, the same under the GATT and TBT Agreement (Marceau 2014; WTO 2014).²⁸

2.2.4 Labelling

It is worth noting that technical regulations include “packaging, marking, or labelling requirements as they apply to a product, process or production method” as listed in Annex 1:1 of TBT. Note that in the context of labelling in the TBT Agreement, there is no reference to “their related” PPMs, which could indicate that the labelling requirements could encompass potential 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 products traded. Nonetheless, labelling requirements may become an important tool to address climate change and other non-trade concerns in a similar manner as non-product-related PPMs. As noted, in the recent WTO *US-Tuna II*, a label concerning the method of fishing tuna was found to be within the scope of the TBT Agreement—and the AB did not pronounce

²⁸ The AB nonetheless noted the difference in the legal tests under the GATT and TBT, and expressly rejected the importation of the “legitimate regulatory distinction” test to GATT Article I and III, see paragraphs from 5.310 to 5.312 of the AB Report in *EC-Seal Products* (WTO 2014), and paragraphs from 5.108 to 5.130 for its full reasoning in that regard.

on the measure as a PPM. Nonetheless, it suggests that a potentially non-product related PPM label may be within the scope of the TBT if in the form of a labelling requirement.

2.3 Implications for Climate Change Related Measures Under GATT and the TBT Agreement

The TBT Agreement thus represents a newly developed avenue to address climate change concerns, particularly through labelling requirements. The “legitimate regulatory distinction” test of Article 2.1 of TBT developed therein is well suited to address GHG related measures, as these measures mainly distinguish between goods based on GHG related aspects. Further, considering that such measures usually take the form of a PPM (particularly non-product-related PPMs), the TBT may become particularly relevant in this context given the express inclusion of PPMs within the scope of the TBT Agreement, and the inclusion of labelling requirements, which often refer to non-product related PPMs (TBT Agreement 1995: Annex 1.1). It is thus likely that the debates between the climate change and trade regimes will develop further in the context of the TBT. Many of the climate change regulation may be considered technical regulations and indeed the TBT Agreement may be well placed to respond to the regulatory distinctions required by most climate change related programmes; moreover, the TBT’s express inclusion of PPMs and labelling requirements lends itself to measures aimed at addressing climate change. The very point of many such concerned measures is to influence process and production methods that contribute to or exacerbate climate change related problems. The TBT is thus an appropriate set of disciplines for application to climate change measures. If Article XX of GATT and the TBT Agreement seem to tolerate, at least conceptually, climate change related measure and even unilateral ones, there are questions and pitfalls associated with the use of policy exceptions within the WTO.

As noted above, the issue is complicated by the fact that different Members may regulate differently in order to reduce GHG. These differences may manifest in terms of the particular measures taken to address GHG, but also in terms of the sectors targeted by the measures. Where Members regulate differently in different sectors with the overall goal of reducing GHG emissions or controlling climate change, how, if at all, can cross-sectoral measures be compared? And, for the purposes of WTO law, should a measure imposed on one industry be compared to, and perhaps even offset, a different measure imposed on a different industry? In *US-Shrimp 21.5* the AB stated that the revised US measure was WTO-consistent because it contained a requirement of “comparable effectiveness” to the particular measure that the US imposed domestically, instead of forcing on exporters a particular policy instrument to realize the desired goal of protecting turtles. In the context of GHG related measure the question is how to measure “comparable

effectiveness” when the exporting governments take actions in different sectors or using different policy instruments.²⁹

Unilateral (sectorial) action through the WTO cannot address the broad problem concerning this particular interaction between the WTO and the UNFCCC: when one Member claims it is entitled to take unilateral measures to potentially enforce the objectives of the UNFCCC through the WTO, and another Member responds that it has respected its responsibilities under the UNFCCC, but has not taken the particular approach prescribed by another Member. The fact that a Member is claiming to be acting under UNFCCC may be a relevant fact to be taken into account in an Article XX analysis (even if such UNFCCC standard would not benefit from the presumption under Article 2.4 of TBT). However on a systemic level, the answer to this problem lies in deepening international cooperation and understanding of these regimes and the way they interact in this context. As a practical matter, within the context of the WTO, the issue is addressed through comparative effectiveness: everything in the climate change and trade debate boils down to comparing the effectiveness of different policies and measures, including the comparative effectiveness of different sectorial actions. However, as noted by the AB, the time variable element in this context, the fact that most of these measures require the benefit of time for evaluation, further exacerbates the difficulty in this area. More generally, WTO rules are centered on preventing trade restrictions and distortions. They only apply to components of state policies and actions that affect trade, tilting the comely balance of comprehensive policy making.

Finally, many national GHG programmes may rely, *inter alia*, on labelling regulations and thus the TBT labelling disciplines become most relevant. Efficiency labels for manufacturing equipment (e.g., motors) are often used to inform the consumer on the efficiency levels of different products. GHG labels indicating the

²⁹ Assume for example, that Member A imposes certain climate-change related regulations on its domestic steel industry. The steel industry in Member A may demand that imported steel from Member B be subject to a border tax adjustment, since Member B does not impose similar regulatory measures on its steel industry and accordingly the steel industry in Member B produces cheaper steel. Member B, however, could respond that although it does not have climate change related restrictions on its steel industry, it has a number of climate change related policies in the forestry sector. It could even argue that it has undertaken more climate change mitigation responsibilities than it is required to under the UNFCCC, and therefore should not be punished simply because it has not taken the particular climate change related policy prescribed by Member A in relation to its (Member A’s) steel industry. Member A, on the other hand, could respond that it is entitled to protect what it considers vital for the protection of health and the environment, including measures addressing climate change applicable to the steel sector—as the US claimed it was entitled to protect sea turtles (more than other species) in US-Shrimp. Such a situation raises fundamental questions about whether the legitimacy of Member’s A border tax adjustment, and whether the central or primary concern of such GHG-related regulations as are imposed by Member A is the protection of the climate generally (and thus Member B’s forestry policies may be considered “equivalent” to Member A’s steel policies), or is rather concerned more narrowly with the climate effect of the steel industry (in which case the fact that Member B has a forestry program may be of little or no relevance to the question whether Member A’s border tax adjustment is legitimate).

level of GHGs emitted during the production process have not been implemented so far in any country. Nonetheless, voluntary GHG labelling schemes are gaining support.³⁰ For example, the Carbon Trust is looking to publish a standard for the measurement of the carbon emissions in any product or service and to set up The Carbon Label Company to enable quality carbon labelling programmes. Labels may thus be a valuable tool in the context of addressing climate change concerns, particularly since they may be able to bring potential non-product-related PPMs within the scope of the TBT Agreement.

3 Other Areas of WTO Rules Relevant to Climate Change

As stated in the Introduction, this analysis is limited to only some WTO disciplines relevant to climate change policies. There are many others, particularly related to the SCM Agreement and at the GATS Agreement, which will be briefly outlined below but the relevance of these disciplines calls for much more thorough analysis as pointed out below.

3.1 Emissions Trading Schemes: GATS

A particular example of climate change policy that could raise questions within the scope of the GATS is the EU Emission Trading Scheme (ETS) or cap-and-trade scheme. As the cornerstone of the EU's climate change policies, the ETS was designed to ensure that states fulfil their commitment to reduce GHG emissions in a cost-effective manner.³¹ The idea is based on the premise that overall GHG emissions are reduced to a set amount (capped) and are thus divided among the parties in the form of certificates or allowances. Through creating transferable units, the ETS established a system where parties had an economic incentive to buy and

³⁰ Labels can be voluntary or mandatory, along the same lines as the distinction maintained in the TBT Agreement between mandatory and voluntary measures, but PPM-related labels are explicitly covered by the TBT Agreement. Traditionally, voluntary labels were not considered to be governed by the GATT/WTO, which focuses on mandatory governmental actions. But the TBT Agreement contains a Code of Good Practices on voluntary standards to be (voluntarily) accepted by standardizing bodies. The Code contains comparable provisions to those applicable to technical regulations on trade. If the use of voluntary labels provides preferential market access to domestic like products, they could be considered more restrictive than necessary contrary to Article 2.2 of the TBT Agreement or as providing less favourable treatment contrary to article III.

³¹ The international regime for emission trading certificates was created initially under the Kyoto Protocol, which outlined the general principles upon which the regime should function, and the 2001 Marrakesh Accords which include more detailed rules specific to the system. The rules contained in the Marrakesh Accords were later adopted by the parties to the UNFCCC in the COP 7 meeting in 2001.

sell emissions allowances, creating the first international trading system for GHG emissions. Despite the inclusion of provisions in the Kyoto Protocol and the UNFCCC to remedy negative effects on international trade,³² there are still several unanswered questions with regard to WTO compatibility.

One of the primary questions posed when discussing compatibility with WTO rules is whether trade in allowances can be considered trade in products or in services, according to the WTO definition. One approach that has been suggested would be to place them under the category of “financial assets,” as defined in the Annex to GATS (Vranes 2009; General Agreements on Trade in Services 1995). If the ETS is thus placed under the category of “financial assets”, then the question becomes whether ETS rules are GATS compliant.³³ In any case, GATS Article XIV may be applicable in justifying any violations of commitments based on environmental considerations (Vranes 2009).

Another aspect that must be considered is the investment dimension of GATS, based on mode 3 (commercial presence), relating to foreign direct investment. GATS contains a prohibition on imposing local content requirements that adversely affect competitive conditions for like foreign services and service suppliers. The Marrakesh Accords grant host states the right to determine whether a Clean Development Mechanism (CDM), for instance, contributes to sustainable development. Challenges may arise as to whether Members reject foreign projects based on local content requirements. The question remains whether such a measure could be justified under GATS Article XIV exceptions for environmental reasons (Vranes 2009).

3.2 Free Allowance: The SCM Agreement and Countervailing Duties (CVDs)

Governments may also choose to encourage GHG mitigation through subsidies. The SCM Agreement contains disciplines for two main types of subsidies—

³² Kyoto Protocol: ‘the Parties included in Annex I shall strive to implement policies and measures under this article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade...’ and the UNFCCC: ‘measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade’, at Art 3, para 5.

³³ Primarily, under GATS, the EU members have used the Understanding on Commitments in Financial Services to schedule their obligations. Under the ‘market access restrictions’ heading, Members (those who accepted the Understanding without reservations) are obliged to allow their residents to purchase, in the territory of another Member, financial services as outlined in the Annex. Further, by virtue of the national treatment obligation, members must allow non-residents also to provide these financial services within their territory. They must also remove effects of non-discriminatory measures that limit financial service suppliers from providing financial services in their territory. The EU Member States have also made market access commitments with regard to financial services under Mode 1 (cross border supply) and Mode 2 (consumption abroad).

actionable subsidies and prohibited subsidies which are covered by the SCM if they are specific. An actionable subsidy may be countervailed at the border, or ruled illegal in a dispute if it provides a benefit that causes adverse effects (serious prejudice, injury, nullification or impairment) to the interests of another Member. A prohibited subsidy is one that is contingent upon export performance (export subsidies) or upon the use of domestic rather than imported products in production (domestic content requirements) and it can also be countervailed or challenged directly.³⁴ If free allowances or other sorts of regulatory or fiscal benefits are provided to the industry that will export processed goods, the importing country may impose CVDs against such imports.

It is obvious that the WTO-compatibility of subsidies used as an incentive to encourage production or use of climate change friendly inputs needs to be examined in the context of the various disciplines of the SCM Agreement—but it is not done in the context of the present paper.

3.3 Several Other Areas of WTO Law Are Relevant to Climate Change Related Measures

There are many more areas of the WTO that are very relevant to climate change related policies. For example, can preferential arrangements be made conditional upon climate change related actions? How should the Enabling Clause be interpreted in this context? What about market access commitments scheduled under the Government Procurement Agreement, can they be conditioned on climate change actions? And if so, how should those conditions be drafted and operated? What about regional trade agreements that would include market access conditions based on climate change related policy? How should GATT Article XXIV be interpreted in this regard? In relation to rules of origin—to what extent can climate change considerations condition market access as regulated by those agreements? Specific agreements such as the Customs Valuation Agreement and the Antidumping Agreement could also be called into question. The same may be argued for the TRIMS Agreement in relation to climate change-related investment measures. The WTO Trade-Related Intellectual Property Rights Agreement (TRIPS) is also relevant for the climate change debate. Intellectual property right issues—including patents and compulsory licenses—are closely linked to issues of technological progress and innovation. These issues are central to ongoing climate change discussions, but are not analysed here.

³⁴ A prohibited subsidy may be challenged in dispute settlement or it may be countervailed.

4 Conclusions

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

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

The ultimate goal is a policy response that would maximize climate change policy effectiveness, minimize economic costs and minimize 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 this chapter primarily focuses.

In broad terms, the competitiveness consequences of climate change policy may be addressed 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. Most of these would need to be justified under Article XX of GATT or based on legitimate regulatory distinctions under the TBT. 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, although this chapter has not analysed the latter (Marceau et al. 2011).

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 addressing climate change 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.

Potential clearly exists for friction that could both weaken climate change efforts and undermine the trading system. This danger could be minimized if governments were to find ways of identifying mutually beneficial trade-offs as they react to the need to mitigate climate change. But deeper cooperation than has so far been demonstrated is needed. 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.

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

Two factors would make this approach challenging. The first is the requirement that all major economies, including some emerging economies not covered by Kyoto Protocol emission reduction commitments, would need to subscribe internationally to GHG emission caps at the national level. Even though such commitments would undoubtedly vary in line with the recognized United Nations Framework Convention on Climate Change (UNFCCC) principle of “common but differentiated responsibilities and respective capabilities”, agreement on the distribution of the burden may prove elusive. Moreover, it may not be in line with the lead role of developed countries to combat climate change and the effects thereof under the UNFCCC.³⁵ The second is that changes in international competitiveness at the industry level arising from differential carbon constraints would need to be seen in a similar light to changes in comparative advantage beyond a

³⁵ UNFCCC Article 3(1) states: “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.”

reflection of unfairness in a sectorial context arising from the apportionment of the burden of addressing climate change.

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

Much more research is necessary to better understand the implication of our actions to deal with climate change and related costs, and food security and trade. Article 2 of the UNFCCC provides that stabilisation of GHG concentrations in the atmosphere should be done within a timeframe that “ensures that food production is not threatened.” Extreme weather conditions and shifts due to climate change have impacted agricultural patterns that in turn impacts trade patterns. Similar questions may arise in the context of ethanol crops which are now used to replace industrial fuels instead of for food. A greater degree of integration of climate change and trade dimensions in agriculture is an important means to ensure food security given these shifts. Can the potential of trade be harnessed to put policies in place to ensure affordable food? In the event of a food crisis Members may block the export of agricultural products to ensure food security at home through the operation of Article XI:1 of GATT and Article 12 of the Agriculture Agreement. Article XI of GATT allows export restrictions in order to temporarily relieve or prevent critical shortages of food or essential products.³⁶ As noted by the AB in *China-Raw Materials*, such export restrictions can only be temporary and are to be distinguished from government actions managing long-term environmental problems that should be examined under Article XX of GATT. As climate change continues to disrupt agricultural patterns, these issues will become more important to understand and explore in the future.

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³⁶ See the Appellate Body Report (WTO 2012a), for a discussion of what products constitute “essential products” within the meaning of that provision. China argued in that case that certain raw materials were “essential products”; the AB ruled however that raw materials are not essential products, whereas food items are.

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