

Nagoya University
Graduate School of Law

Doctoral Thesis:

**BORDER CARBON ADJUSTMENTS IN INTERNATIONAL TRADE LAW: AN
APPROACH FOR THE IMPLEMENTATION THROUGH REGIONAL TRADE
AGREEMENTS**

LL.D. Candidate ID Number: 431604041

Name: DAO Gia Phuc

LL.D. (Comparative Law) Program in Law and Political Science

Academic Advisor: Professor MIZUSHIMA Tomonori

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List of Abbreviations

AB	Appellate Body
BAT	Best available technology
BCA(s)	Border carbon adjustment(s)
BTA(s)	Border tax adjustment(s)
COOL	Certain country of origin labeling
COP	Conference of Parties
CFCs	Chlorofluorocarbons
CIM	Carbon Inclusion Mechanism
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRTA	Committee on Regional Trade Agreement
CU	Custom Union
DSB	Dispute Settlement Body
EC	European Community/European Communities
EEC	European Economic Community
ETS	Emissions trading scheme/system
EU	European Union
FAIR	Future Allowance Import Requirement
FSC(s)	Foreign Sales Corporation(s)
FTA	Free trade area/agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GHG	Greenhouse gases
HS	Harmonized Commodity Description and Coding System of the

	World Customs Organization
ICTSD	International Centre for Trade and Sustainable Development
INC	Intergovernmental Negotiating Committee
INDC(s)	Intended nationally determined contribution(s)
IPCC	Intergovernmental Panel on Climate Change
MERCOSUR	Southern Common Market (<i>Mercado Común del Sur</i>)
MFN	Most-favoured-nation principle/treatment
NAAEC	North American Agreement for Environment Cooperation
NAFTA	North American Free Trade Agreement
NASA	National Aeronautics and Space Administration
NT	National treatment
ODC	Ozone-depleting chemicals
ODS	Ozone-depleting substance
OECD	Organization for Economic Cooperation and Development
PPM(s)	Process and production method(s)
PPM measure(s)	National measure(s) related to a PPM(s)
PTA	Preferential trade agreement
RCEP	Regional Comprehensive Economic Partnership
RTA	Regional trade agreement
SCM Agreement	Agreement on Subsidies and Countervailing Measures
TBT Agreement	Agreement on Technical Barriers to Trade
TPP	Trans-Pacific Partnership
TTIP	Transatlantic Trade and Investment Partnership
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

VAT	Value Added Tax
WMO	World Meteorological Organization
WTO	World Trade Organization

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Introduction

The last few decades witnessed the highest increase of temperature since the first scientific records were made around 100 years ago.¹ The global warming is expected to cause extreme weather events, including heat waves, floods and droughts. Scientists believe that continued emissions of greenhouse gas (GHG) from industrial processes will cause further warming and changes in all components of the climate system. The reduction of GHG emissions plays a key role in limiting climate change and in order to avoid irreversible damage with catastrophic consequences, contributions with various actors including lawmakers, policy-makers and international organizations are required.²

Putting a financial burden on emissions is considered as the most effective means to combat climate change besides promoting low-carbon technologies and enhancing social awareness.³ This market-based mechanism might take forms of emission trading, taxation system or regulations. Such a mechanism is expected to encourage stakeholders in the market to adapt from low-efficient production methods to eco-friendly means.⁴ However, these policies may cause significant costs on industries for promoting low emissions and high-efficiency technologies and consumers for changing spending behaviors from high emission intensive to low emission products.

This situation may result in unequal competition conditions between domestic

¹ Nicholas Herbert Stern and Great Britain Treasury, *The Economics of Climate Change: The Stern Review* (Cambridge University Press, 2007).

² Stocker et al., "IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change," *Cambridge University Press*, 11, accessed February 8, 2017 <https://www.ipcc.ch/report/ar5/wg1/>.

³ Stern and Treasury, *The Economics of Climate Change*, xviii.

⁴ "Tackling Leakage in a World of Unequal Carbon Prices," *Climate Strategies* 1 (n.d.): 11.

and foreign producers. Producers in countries with no or lax carbon reduction regulations enjoy the advantage of selling their products with a lower price compared to products from domestic producers that must bear emissions reduction costs. Therefore, producers may have incentives to relocate their carbon-intensive production to countries with no or lax carbon constraint regime to balance the competition condition. As a result, a strict climate policy in one country could lead to an increase of GHG emissions in other countries, especially in least-developed or developing countries which do not have carbon restraints. The fight against climate change could then be meaningless. This phenomenon is called as “carbon leakage.”⁵

This issue can be overcome by adopting border adjustment measures against foreign products. The measures could balance the playing field between domestic and foreign products and encourage domestic industries to take part in national emissions reduction schemes. Those measures could also encourage the foreign producers to reduce the emissions of their products during the production process for lower duties and lax regulations from importing countries with strict emission reduction regime. As a consequence, developing countries, which are major global GHG emitters and exporters of carbon intensive products, may be directed to low carbon economies comparable to those which exist in developed countries such as the European Union, the United States and Japan. On the other hand, such measures may be criticized by developing countries since the difference in the level of developments should lead to different burden of climate change mitigation. Such political considerations may prevent developing countries from participating in climate change negotiations and trigger retaliation measures.

⁵ Harro van Asselt and Thomas Brewer, “Addressing Competitiveness and Leakage Concerns in Climate Policy: An Analysis of Border Adjustment Measures in the US and the EU,” *Energy Policy* 38, no. 1 (January 2010): 42.

The application of border adjustments measures raises some issues under international trade law. Accordingly, scholars have referred to the idea of restricting trade through imposing measures on carbon-intensive products in different ways, this study uses the term “Border Carbon Adjustments” (BCAs).⁶ BCAs may take forms of price-based or non-price-based restrictions or regulations including carbon taxes, emissions allowances that importers need to submit (international reverse allowances), and emission reduction related regulations.

The WTO Agreements does not contain specific provisions regarding environment or climate change mitigation, partly because they were not drafted to address the climate change problem. However, as will be seen below, WTO suggests some provisions do concern BCAs. They could be the disciplines on tariff, non-discrimination principles, and the general exceptions may be relevant. Thus, if a WTO Member adopts climate measures, or restrictions on trade, such measures may raise an issue of their compatibility with WTO law, especially when the BCA in question applies on non-product-related processes and production methods (non-product-related PPMs).⁷

This thesis examines the consistency of BCAs with WTO law and, in order to solve some uncertainties under WTO law, suggests the use of Regional Trade Agreements (RTAs), or a regional approach under free trade agreements or custom unions to the imposition. The aim of this research is to propose the possibility of regulating BCAs within RTAs in order to accommodate climate change mitigation and the issue of carbon leakage because under the universal international trade law of today,

⁶ For instances, “carbon equalization measures,” “Border Adjustment Measures” (BAM) or “Border Carbon Adjustments” (BCAs). See Rolf H. Weber, “Border Tax Adjustment – Legal Perspective,” *Climatic Change* 133, no. 3 (December 1, 2015): 407–8.

⁷ For the concept of “non-product-related PPMs,” see Section 2.4.2 of this thesis.

which WTO law presents, there is no comprehensive solution to the problem of climate-related measures. My suggestion or proposal in this thesis could enhance certainty and predictability and enable WTO Members, both developed and developing countries, to develop their domestic environmental policies on climate change mitigation. In addition, my suggestion could decrease the number of disputes concerning the compatibility of climate-related measures with WTO law. The scope of this study is limited to legal issues and does not cover economic and environmental issues which BCAs may arise.

Thesis outline

This thesis contains three main chapters besides this introductory section and the concluding chapter. Chapter 1 discusses the issue of BCAs in the context of climate change. It first identifies the risk of climate change and the current efforts to address this phenomenon within the multilateral framework, as well as at the regional and national level. It examines the relationship between climate change policies and international trade rules, especially a potential conflict between the rights and obligations of WTO Members and their trade-related measures for GHG emission reduction. The chapter then highlights the issue of carbon leakage as a central obstacle to national climate policies and possible options to address this issue. Among several measures, BCAs have increasingly gained support from scholars and policy makers. However, they may have problematic under WTO law.

Chapter 2 examines of the legal compatibility of border carbon adjustments under WTO law. It discusses the history and evolution of the notion “border adjustment” and the outline of WTO law concerning border adjustment measures. The chapter scrutinizes conflicts, which I suppose arise inevitable, between border carbon

adjustments and most-favoured-nation and national treatment obligations. A justification of BCAs under Article XX of the GATT, which provides for health and environmental exceptions, is then explored but such justification seems quite difficult. It then discusses policy options for the implementation of BCAs within the WTO and explores their limitations.

Chapter 3 proposes a regional approach about this matter, instead of a multilateral approach under the WTO Agreements. It identifies prospects for countries to negotiate climate-related measures affecting trade such as BCAs within regional trade agreements. Concerning the decision-making by consensus in the WTO, the chances of adopting an authoritative interpretation of relevant provisions, admitting a waiver of the Members' obligations or adopting a plurilateral agreement on BCAs are slim. However, this objective may be achieved by conducting an RTA which contains provisions regarding BCAs, because it is then unlikely that disputes concerning BCAs would be referred to the WTO Dispute Settlement Body.

Chapter 1: Climate Change and the Issue of Carbon Leakage

The scientific evidence shows that the impacts of climate change on the environment continue to evolve. In order to deal with this problem, international cooperation and financial resources are required. Failure to appropriately address this matter may result in the destruction of humankind. We must take measures for mitigating climate change by reducing its causes through the decrease of greenhouse gas (GHG) emissions and by lessening its adverse effects through structural and technological changes and capacity building. All levels of governance, multilateral, regional, national, and both public and private sectors should be involved. This chapter reviews the policy responses to climate change and considers the role of an emissions reduction mechanism in preventing carbon leakage, with specific focus on border carbon adjustments (BCAs).

1.1. The risk of climate change

According to the Intergovernmental Panel on Climate Change (IPCC), GHG emissions from the decade between 2000 and 2010 was greater than the total emissions over the previous three decades. As a result, the average global temperature rose by 0.85°C from 1880 to 2012 and the global sea level also rose by 19 cm (1901–2000). The impact of climate change is not only limited to extreme weather events, such as floods, drought, typhoons but also affects the agricultural trade sector, food security, diseases, and extinction of plants and animals.⁸ Scientists believe that the increase in temperature is the result of the unprecedented rising of the atmospheric concentrations

⁸ Stocker et al., “IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,” 5.

of carbon dioxide, methane, nitrous oxide and a number of gases that arise from industrial processes (usually referred as GHGs). This would be a result of accumulated human activities such as the combustion of fossil fuels, which has increased since the industrial revolution, with a 40 percent increase in GHG concentrations compared with the pre-industrial times. Most scientists concur that continued emissions of GHG will cause further warming and changes in all components of the climate system. The reduction of GHG emissions is required to limit climate change.⁹ In order to avoid irreversible damage with catastrophic consequences, states, international organizations and industries must ensure that effective policies are developed to address climate change.

The issue of climate change, however, is very challenging so that the international community has not achieved international agreements on this issue. Currently, the international climate regime lacks powerful instruments to secure participation and compliance, with only non-binding conference statements and legal principles.¹⁰ Three features of climate change may explain this problem. First, climate change concerns every aspect of a state's policies such as energy, agriculture, transportation, urban planning, and economic.¹¹ As a result, in many countries, the climate change issue complicates domestic politics. Second, climate change is not a short-term process, but it endures over millennia. Actions toward climate change mitigation require countries to make costly efforts to address a long-term and, in some

⁹ Ibid

¹⁰ See generally Scott Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-Making: The Strategy of Environmental Treaty-Making* (OUP Oxford, 2003).

¹¹ For instance, in the United States, the two main political parties frequently question the science of climate change and provide a sturdy legislative wall against the kinds of international agreements in which it can participate. See Tiffany Germain, Kristen Ellingboe, and Kiley Kroh, "The Anti-Science Climate Denier Caucus: 114th Congress Edition," January 2015.

cases, uncertain threats.¹² Despite the urgency to address climate change, governments seem to prioritize other concerns such as poverty eradication, energy access, affordable transportation, and economic development. Third, states have very different interests, priorities, capabilities, and attitudes. The countries primarily responsible for causing climate change problem are not those that will face the most adverse effects. Small island states, for example, have a persuasive reason to act; however, their actions alone will not significantly influence in the fatal consequence of warming. On the other hand, developed countries and large developing countries may not substantially change their short-term policies regarding their dependence on fossil fuels and the burden of providing reasonable energy access for their populations.¹³ With these hurdles, it is not surprising that the international response to climate change has had only modest success to date.

1.2. International response to climate change

The demand for solving climate change issue is indisputable. However, countries have very different perspectives regarding how they respond to the issue. Each perspective reflects how countries contribute to the international policy addressing climate change. Some countries including European countries and small island states view climate change as an environmental problem. From this point of view, the goal of international policy is to prevent the dangerous effects of climate change by reducing GHG emissions. The effectiveness of this policy depends on the strictness of emissions reduction commitment, the level of states' participation and

¹² Kelly Levin et al., "Playing It Forward: Path Dependency, Progressive Incrementalism, and the 'Super Wicked' Problem of Global Climate Change," in *International Studies Association 48th Annual Convention*. Chicago, February, 2007.

¹³ Daniel Bodansky, Jutta Brunnée, and Lavanya Rajamani, *International Climate Change Law* (Oxford University Press, 2017), 4.

compliance by these states.¹⁴

Other developed countries including the U.S, however, take climate change as an economic problem, and consider that, the goal of climate policy is to achieve a cost-effective outcome by equalizing the marginal cost of compliance. They usually use market mechanisms such as emissions trading schemes to reduce GHG emissions wherever it can achieve cost-effectiveness.¹⁵ In cases where the cost for emissions reduction in the future is cheaper than today, and such cost in some countries is lower than others, it would be better to transfer the cost of GHG emissions reduction to the future, or to countries with limited regulations on climate change mitigation. Environmentalists have criticized this approach as it may undermine the overall effectiveness of the climate policy.¹⁶

Meanwhile, many developing countries address climate change as an ethical issue. They take developed countries as the historic cause of climate change because these countries are mostly responsible for majority of the incremental GHG emissions from the nineteenth century until now.¹⁷ From this point of view, developed countries should not only lead in the fight against climate change but also supply developing countries with financial and technical support. However, this argument is less convincing when large developing countries especially China recently surpassed many developed countries to become the world's largest emitter.¹⁸ Thus, the issue of how

¹⁴ See Barrett, *Environment and Statecraft*.

¹⁵ Bodansky, Brunnée, and Rajamani, *International Climate Change Law*, 190.

¹⁶ Slobodan Perdan and Adisa Azapagic, "Carbon Trading: Current Schemes and Future Developments," *Energy Policy* 39, no. 10 (2011): 6040–6054.

¹⁷ Looking at emissions on a per-person basis, even today GHG emission from developed countries are much higher than developing countries. See Intergovernmental Panel on Climate (IPCC), *Climate Change 2014: Mitigation of Climate Change*, vol. 3 (Cambridge University Press, 2015), 113.

¹⁸ In 2015, China's share of global emissions was 29% whereas the US and EU accounted for 14% and 10% respectively. See Jos G.J. Olivier et al., *Trends in Global CO2 Emissions: 2016 Report*, no. 2315, (PBL Netherlands Environmental Assessment Agency The Hague, 2016), 13.

and on what basis, emission should be reduced is complicated and challenging because as long as the international climate policy is not perceived as even-handed, countries are unlikely to accept and follow it.

Scholars usually divide the global response to climate change into four phases. In the first “agenda setting” phase from 1985 to 1990, the climate change issue was developed among scientists and other stakeholders. The second, “constitutional phase” from 1991 to 1994 covers in the negotiation and entry into force of the United Nations Framework Convention on Climate Change (UNFCCC). The third, “regulatory phase” from 1995 to 2005 focuses on regulations with negotiation, elaboration, and operation of the Kyoto Protocol. The last, “negotiation of future regime” phase since 2005 concerns the negotiation of the future climate regime after the first commitment period of the Kyoto Protocol.

1.2.1 Agenda setting (1985-1990)

As the general theory of the greenhouse effect was already noted by Arrhenius, a Swedish scientist, in the nineteenth century. However, the depletion of the ozone layer as a result of human emissions of greenhouse gases were raised as concerns by the science community only in the 1970s. The first scientific World Climate Conference was held in 1979 by the World Meteorological Organization to assess the studies on climate and consider the effects of climate variability and their role in human society changes. And an international regime to address the problem of climate change began to develop only in the 1980s. Until then, the climate change issue was addressed primarily by non-governmental actors including environmental-oriented scientists. However, the “agenda setting” phase marked the more active participation of

governments,¹⁹ perhaps because of the following three factors.

First, a group of scientists from developed countries performed as “knowledge-brokers,” who help to transform and publicize the emerging scientific knowledge about climate change to general audiences. They also helped to familiarize policymakers with greenhouse effects and to convert them from a theoretical knowledge into a practical possibility. The scientists included, such as, Including Ber Bolin from Sweden, who become the first chair of the Intergovernmental Panel on Climate Change (IPCC) and James Hansen of the National Aeronautics and Space Administration (NASA), who presents many reports before U.S Congressional committees in 1987 and 1988.²⁰ Second, in 1985 the discovery of the “ozone hole” in the Antarctic that was believed to have been caused by emissions of chlorofluorocarbons (CFCs) raised public concern about the connection between global warming and the depletion of the ozone layer. Such development of the climate regime has led to the inclusion of the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987 and the UN Conference on Environment and Development in Rio de Janeiro in 1992. Lastly, in 1988, a heat wave and drought in North America caused concern of the public and governments, particularly in the U.S and Canada, on global warming. And in this year, the IPCC was established by the initiative of The United Nations Environment Programme (UNEP) and the World Meteorological Organization with the endorsement by the UN General Assembly.²¹

The IPCC, in its first Science Assessment Report of 1990, stated that the

¹⁹ Bodansky, Brunnée, and Rajamani, *International Climate Change Law*, 96.

²⁰ The scientists included, such as, Including Bor Bolin from Sweden, who become the first chair of the Intergovernmental Panel on Climate Change (IPCC) and James Hansen of the National Aeronautics and Space Administration (NASA), who presents many reports before the U.S Congressional committees in 1987 and 1988. See *ibid.* at 98.

²¹ *Ibid.* at 101.

increase in emission of GHGs was causing significant changes to the earth's atmosphere. The most likely reasons for such increase were industrial emissions and deforestation. It also predicted the increased severity of storms and other extreme weather events, adverse impacts on ecosystems and biodiversity as well as a possible rise in sea level as a consequence. However, it was only in its Third and Fourth Assessment Report in 2001 and 2007 that it stated definitively that these issues were caused by human activities.²²

1.2.2 Constitutional phase (1990-1995)

The process of creating a framework convention on climate change began in 1990, when the UN General Assembly incorporated an idea of such an convention within the preparations for the coming UN Conference on Environment and Development with the preparation by an Intergovernmental Negotiating Committee (INC) of an effective framework convention on climate change, containing appropriate commitments. INC held five sessions from the beginning of 1991 to mid-1992 and finally adopted the United Nations Framework Convention on Climate Change (UNFCCC) on 9 May 1992.

During the negotiations of UNFCCC, divisions between developed and developing countries and among developed countries emerged. Developing countries argued that climate change should not be viewed merely as an environmental issue and but rather a development issue and that measures to combat climate change must not trespass their economic development because developed countries were responsible for creating the climate change problem. Therefore, the UNFCCC provides that developed

²² Navraj Singh Ghaleigh, "Science and Climate Change Law - The Role of the IPCC in International Decision-making," in *The Oxford Handbook of International Climate Change Law*, ed. Cinnamon P. Carlarne, Kevin R. Gray, and Richard G. Tarasofsky (Oxford, United Kingdom: Oxford University Press, 2016), 55–71.

countries should take the lead in the fight against climate change and enunciated the principle of “common but differentiated responsibilities and respective capabilities.” It also distinguished commitments between developing and developed countries with stricter reporting requirements and review on developed countries (Article 4.1 and 12.2.)

Reflecting the separation of developed countries, the European Union and the U.S had different views about whether binding emission reduction targets should be included within UNFCCC negotiations. As a result, the UNFCCC only established its fundamental system of governance with objectives and principles, without setting legally binding emission targets. The most significant achievement of its adoption in 1992 was the establishment of the governance structure for the international climate regime, reflecting its role as a framework convention. The UNFCCC thus represents a punctuation mark in an ongoing process of negotiations on climate change that continues to this day.

1.2.3 Regulatory phase (1995-2005)

In 1995, within the framework of the UNFCCC, the first Conference of the Parties (COP1) started negotiations to develop a new legal instrument – the Kyoto Protocol – which was adopted in 1997. The Kyoto Protocol which was developed to improve the mechanisms of the UNFCCC, comprised four main features: (i) internationally-negotiated emissions targets and accounting rules, (ii) further differentiation between developed and developing countries, (iii) a robust compliance system with legally binding force, and (iv) market mechanisms for cost-effectiveness.²³

The negotiation of Kyoto Protocol shows the compromise between countries on

²³ Bodansky, Brunnée, and Rajamani, *International Climate Change Law*, 160.

climate change mitigation (EU on the strictness and legal character of the emissions targets,²⁴ the U.S on the market mechanisms,²⁵ and the developing countries on differentiation, that is the calling for negotiation of emission reduction targets unambiguously excluded any new commitments for developing countries). However, the U.S withdrawal from the Kyoto Protocol, which was announced in 2001,²⁶ without proposal of alternatives. This action from the U.S pushed the EU and other countries to compromise detailed rules designing fundamental provisions of the Kyoto Protocol.²⁷ With the ratification by Russia, the protocol came into effect in 2005.

Despite some achievements, the Kyoto Protocol suffered from significant constraints. It only set targets for a short-term emission reduction from 2008 to 2012 and did not mention any commitments after this period. Also, the total emission reduction targets only accounted for less than 24 percent of global greenhouse gas emissions, because of the U.S non-participation and the failure to establish emission reduction commitments from China and other developing countries.²⁸

1.2.4 Negotiation of future climate regime (from 2005)

After the Kyoto Protocol entered into force, the parties raised concerns on the emission reduction targets when its first commitment ended in 2012. Developing countries preferred to continue the Kyoto Protocol for a second commitment period in which their emission reductions were unbound. In contrast, developed countries

²⁴ The protocol issued individualized targets for each developed countries listed in its Annex B.

²⁵ The protocol provided for the development of an international emissions trading system in Article 15, established the Clean Development Mechanism (CDM) allowing developed countries to receive credit for emission reduction projects in developing countries in Article 12.

²⁶ See David G. Victor, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University Press, 2004).

²⁷ See Suraje Dessai and Emma Lisa Schipper, "The Marrakech Accords to the Kyoto Protocol: Analysis and Future Prospects," *Global Environmental Change* 13, no. 2 (2003): 149–153.

²⁸ Igor Shishlov, Romain Morel, and Valentin Bellassen, "Compliance of the Parties to the Kyoto Protocol in the First Commitment Period," *Climate Policy* 16, no. 6 (2016): 768.

endeavored to comprise the emissions of the U.S and other leading emitters such as China, India, and Brazil by adopting a new agreement under UNFCCC or even under a single new agreement that would replace the Kyoto Protocol and be more comprehensive, addressing both developed and developing countries' commitments.

During the Bali conference in 2007, the parties expected to launch a “comprehensive process” to empower an “agreed outcome” under the UNFCCC, incorporating all aspects of the climate change issue with mitigation, adaptation, finance, and technology.²⁹ However, during the negotiation, developing countries maintained their opposition to considering the emissions mitigation of developed and developing countries together.

Then, the Copenhagen conference was held in 2009. Although it failed to establish a legally binding agreement, it lowered a political wall between developed and developing countries. Developing countries, including large emitters, for the first time agreed to report their greenhouse gases inventories and their mitigation efforts in an international instrument.³⁰ Further, each party was allowed to use a bottom-up process by setting its own commitments and actions.

In 2011, the Durban conference within COP17 was held to resolve the question of whether to prolong the emissions reduction commitments of the Kyoto Protocol beyond 2012, or to negotiate a new legal agreement with the participation of both developed and developing countries. At the end of the conference, parties agreed to the Durban Platform for Enhanced Action which comprised the development of a proper legal instrument or a mutually accepted outcome with legal force under the convention

²⁹ Paragraph 1 of the Bali Action Plan.

³⁰ During the conference, China involved much more positive than previously, reflecting its development as a global power. See more at “G8 Hokkaido Toyako Summit Leaders Declaration.”

that would be applicable to all parties.³¹ In regard to the extension of the Kyoto Protocol, the EU proposed a commitment period of from 2013 to 2020. Unfortunately, due to the non-participation of Canada, Japan and Russia, the amendment only affected a small number of parties, representing less than 12 percent of global greenhouse gases emissions. Unlike previous instruments, the Durban Platform called for the broadest cooperation and participation by all countries and provided that the agreed outcome would apply to both developed and developing countries.³²

Before the Paris Conference started, 182 states submitted their “intended nationally determined contributions” (INDCs) as requested at the Warsaw Conference of 2013. Then the Paris Agreement was adopted in 2015.³³ The Paris Agreement is considered as a historic achievement in the fight against climate change. By the end of January 2017, more than 190 countries representing 99 percent of global emissions submitted their INDCs. However, the Agreement is not perfect and many shortcomings remain. First, it outlines an aim for reducing temperatures to a 2°C above the pre-industrial level, but it does not have binding caps in the case of non-compliance. In other words, it lacks a liability and compensation mechanism and there are no sanctions for countries that fail to comply. Therefore, there is an gap between promise and performance in respect to the idealistic statements of governments.³⁴

Second, the fight against climate change would be unfeasible for developing countries if there was no financial commitments by developed countries for the support of projects mitigating the rising sea levels and the probability of extreme weather

³¹ See Daniel Bodansky, “The Durban Platform Negotiations: Goals and Options,” *Harvard Project on Climate Agreements*, 2012.

³² The Preamble of the Durban Platform.

³³ Bodansky, Brunnée, and Rajamani, *International Climate Change Law*, 209.

³⁴ Sushanta Kumar Mahapatra and Keshab Chandra Ratha, “Paris Climate Accord: Miles to Go,” *J. Int. Dev.* 29, no. 1 (January 1, 2017): 148–49.

events.³⁵ The Paris Agreement requires developed parties to provide financial resources for developing countries and to take the lead in mobilizing climate finance (Article 9.1, 9.3, and 9.5). However, it does not list which countries qualify as “developed” and “developing” as the UNFCCC and the Kyoto Protocol did. In fact, during the negotiations, developed countries avoided any decision on providing ways to aid such as technology, finance or capacity building support for developing countries. They did not want to promise fixed pledges.³⁶

When viewed this way, the adoption of the Paris Agreement does not represent an endpoint towards an efficient and equitable response to climate change. Many problems remain that need to be addressed. The international climate regime still calls for a new system.³⁷

1.3. Bottom-up approach to deal with climate change

As mentioned above, despite efforts of the international community to conclude a multilateral agreement on climate change, this top-down approach exhibits difficulties in participation, acceptance of a burden sharing and compliance. Some countries, therefore, started to adopt national measures to address climate change unilaterally. Such actions taken at the national and subnational level to mitigate and adapt climate change on a voluntary basis are called the “bottom-up approach.” Many scholars believe that the bottom-up approach could be a complement to negotiations at the bilateral or regional level and progressively converted into international climate

³⁵ Ibid. at 150.

³⁶ Ibid. at 149.

³⁷ Victoria Johnson, “The Politics of Climate Change.”

policies.³⁸ As will be seen below, there are mainly three types of bottom-up approach” including the emission trading scheme (ETS), carbon taxes, and command-and-control climate measures.

1.3.1 Emissions Trading Scheme

Under the emissions trading scheme (ETS),³⁹ states and companies can buy and sell emissions rights to achieve emissions targets that were set to comply with their reduction commitments. States and companies have options for compliance. When they fail to reach the targeted emission reductions, they can purchase allowances or permits in the market for the exceeding amount of emission. On the other hand, they can sell their emission allowances if their GHG emissions are below the caps. Thus, states and companies that have higher GHG emissions must bear higher costs and emissions reductions targets can be achieved through the market mechanism with an economic opportunity rather than just a cost factor.⁴⁰ In practice, ETS is a national climate change mitigation measure which can be found as a compulsory policy in the EU, Switzerland and New Zealand, a voluntary basis in Japan or a state-level scheme

³⁸ Carlo Carraro and Christian Egenhofer, *Climate and Trade Policy: Bottom-up Approaches Towards Global Agreement* (Edward Elgar Publishing, 2007), 42–43.

³⁹ ETS has been designated in a long journey from economic theory to practical implementation. See Robert Baldwin, “Regulation Lite: The Rise of Emissions Trading,” *Regulation & Governance* 2, no. 2 (2008): 193–215; See also Jan-Peter Vo\ s s, “Innovation Processes in Governance: The Development of ‘Emissions Trading’ as a New Policy Instrument,” *Science and Public Policy* 34, no. 5 (2007): 329–343; Economists from the 1960s suggested that externalities can be dealt with effectively if property rights are well regulated and transaction costs are eliminated. Thus, when states confer property rights to environmental resources and create markets for trading these rights, certain environmental protections can be obtained at the lowest cost. See generally John Harkness Dales, *Pollution, Property & Prices: An Essay in Policy-Making and Economics* (Edward Elgar Publishing, 2002); When the U.S. amended the Clean Air Act in 1990, “acid rain program,” it was the first country that has established an emissions trading scheme for sulfur dioxide. See A. Denny Ellerman, *Markets for Clean Air: The US Acid Rain Program* (Cambridge University Press, 2000).

⁴⁰ Robert J. Shapiro, “Addressing the Risks of Climate Change: The Environmental Effectiveness and Economic Efficiency of Emissions Caps and Tradable Permits, Compared to Carbon Taxes,” *Reston, VA: The American Consumer Institute*. (www.theamericanconsumer.org/Shapiro.pdf), 2007, 4–5.

in the U.S.⁴¹

1.3.2 Carbon taxes

A carbon tax, which puts a price on emissions to promote changes in the behaviors of private actors, a price-based approach to reduce GHG emissions, as different from the above ETS, which is a market-based mechanism.⁴² Carbon taxes appear to be efficient and effective and the increasing of number of governments have been considering to adopt them.⁴³ Revenue from carbon taxes not only contributes to a state's income and supports the development of green technologies, economically vulnerable consumers from intensive-emission products and mitigation and adaptation programs in developing countries. Although a carbon tax has economic advantages over an ETS by providing better price stability on emission rights and flexibility in tax rates, it may be opposed, for examples, by business sectors because it can reduce competitiveness.⁴⁴ Practically, states uses carbon taxes as an emissions reduction instrument for energy sectors and intensive-emission industries. They can impose on the use of fossil fuels calculated by the carbon footprint of combustion during the manufacture of final products. Carbon taxes can also apply to emissions that are released during production processes such as the manufacturing of steel or cement.⁴⁵

⁴¹ The Low-Carbon Fuel Standard (LCFS) in California combines a technical norm of emission trading when there is a deficiency of a federal emissions trading scheme at the federal level.

⁴² See Keith Kendall, "Carbon Taxes and the WTO: A Carbon Charge without Trade Concerns," *Ariz. J. Int'l & Comp. L.* 29 (2012): 52–54; See also Thomas Cottier and Nashina Shariff, "International Trade and Climate Change," in *Research Handbook on Environment, Health and the WTO*, ed. Geert Van Calster and Denise Prévost (Edward Elgar Publishing, 2013), 413–47.

⁴³ Kendall, "Carbon Taxes and the WTO," 51–54.

⁴⁴ Erich Vranes, "Carbon Taxes, PPMs and the GATT," in *Research Handbook on Climate Change and Trade Law*, ed. Panagiotis Delimatsis (Edward Elgar Publishing, 2016), 77.

⁴⁵ WTO and UNEP, *Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization* (UNEP/Earthprint, 2009), 90.

1.3.3 Command-and-control climate measures

A government may adopt a command-and-control system, which includes emission standards together with monitoring and enforcing instruments on the compliance of such standards. Standards within this mechanism can appear as performance-based standards establishing allowed emissions for producers or products or implementing technology-based standards mentioning both emissions limits and specific technologies for the production process.⁴⁶ In cases where a producer fails to achieve the climate standards, the sale of its products would be restricted in the relevant market. Consequently, the command-and-control system does not provide options for compliance as different from market-based mechanisms. Firms need to comply strictly with the regulations rather than purchase additional emission allowances or sell surplus emissions rights in the emission trading scheme. This system appears less cost-effective than the market-based mechanisms. However, the command-and-control scheme is the most popular instrument for both developed and developing countries and has been applied much earlier than the market-based schemes.⁴⁷ In actuality, states apply a command-and-control system mostly under carbon-related standards and carbon labeling requirements on high emission products. These measures will be discussed in the following two sub-sections in detail.

1.3.3.1 Climate-related standards

The idea of adopting mandatory regulations on producers and products was initiated in the 1980s to promote energy efficiency for cars and home appliances.⁴⁸ It is not surprising that climate-related standards have raised tensions between regulators

⁴⁶ Adam B. Jaffe, Richard G. Newell, and Robert N. Stavins, "Environmental Policy and Technological Change," *Environmental and Resource Economics* 22, no. 1–2 (2002): 50.

⁴⁷ *Ibid.* at 43–46.

⁴⁸ WTO and UNEP, "Trade and Climate Change," 399.

and it can be expected that such tensions will only increase in the future.⁴⁹ Countries currently apply such emission-intensive standards mostly on transportation sectors. For instance, many states have applied technical requirements for the quality and characteristics of biofuels such as Brazil, India, EU and the U.S.⁵⁰ Japan also requires emission-combustive firms to apply specific energy-efficient equipment for their production processes. Also, climate standards can be in the form of performance-based regulations with mandatory requirements on maximum GHG emissions, maximum energy using or the minimum fuel economy.⁵¹ The Fuel Quality Directive of the EU, adopted in 2009, proposed an instrument to control life-cycle GHG emissions from fuel suppliers toward and achievement of the emission reduction target of life-cycle emissions by up to 10 percent per unit of energy from fuel and energy supplied by 31 December 2020.⁵² The U.S. also established climate standards for transportation fuels through the U.S. Corporate Average Fuel Economy Standards regarding minimum fuel efficiency. These standards comprise requirements for medium- and heavy-duty vehicles producers to lower GHG emissions by almost 1 billion metric tons, and reduce oil combustion by up to 1.8 billion barrels over the lifetime of vehicles sold by 2027.⁵³

1.3.3.2 Carbon labeling requirements

Similar to mandatory energy efficiency labels applying on household

⁴⁹ Philipp Aerni et al., “Climate Change and International Law: Exploring the Linkages between Human Rights, Environment, Trade and Investment,” *German YB Int’l L.* 53 (2010): 166–67.

⁵⁰ WTO and UNEP, “Trade and Climate Change,” 119.

⁵¹ *Ibid.*

⁵² Recital 8-9 of the Preamble of the Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC of 2009, CONSIL, EP 32009L0030, CONSIL, EP (2009).

⁵³ Press release of National Highway Traffic Safety Administration (NHTSA), The US Department of Transportation for Phase 2 from 2018 to 2027. See “EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Heavy-Duty Trucks,” Text, *NHTSA*, (October 9–2016).

appliances, carbon emission labels identify the total GHG emissions quantities produced throughout products' life-cycle, including production, distribution, and use. This mechanism aims to inform consumers whether a product is emission-intensive or not and leave the decision of consumption on end users' awareness of climate change.⁵⁴ By providing the environmental consequence of specific products for customers' preferences, regulators believe that a labeling scheme would be able to stimulate market innovation in energy-efficient products and be considered as a market-friendly response to climate change (unlike traditional command-and-control instruments).⁵⁵ However, climate labels only contribute to GHG emission reduction indirectly relying solely on consumers' preferences about the negative consequences of climate change. Therefore, this mechanism only works efficiently with finish products such as food, electrical appliances, consumable products, because in case of primary products such as steel, cement, chemical, etc., people who consume such products, for example, manufacturers, may not consider climate change as the priority for preferences.⁵⁶

Carbon labeling scheme has been adopted in many countries across different sectors as a potential tool to address climate change. While most OECD members have used such labeling schemes for several years, the number of non-OECD members using such measures is also growing. Australia pioneered carbon labels on products, at the point of sale, new vehicles in Australia must carry a label on the windscreen giving information on the vehicle's fuel consumption and carbon dioxide emissions. In the EU, new cars also require labels that display levels of carbon dioxide emissions in

⁵⁴ Steve Charnovitz, "The Law of Environmental PPMs in the WTO: Debunking the Myth of Illegality," *Yale J. Int'l L.* 27 (2002): 109.

⁵⁵ WTO and UNEP, "Trade and Climate Change," 120.

⁵⁶ Kateryna Holzer, *Carbon-Related Border Adjustment and WTO Law* (Edward Elgar Publishing, 2014), 29.

units of grams per kilometer.⁵⁷

1.4 Carbon leakage and policy options to address this issue

Among various approaches to address the issue of climate change,⁵⁸ putting a price on emissions is considered as the most effective one. It is also expected to encourage stakeholders in the market to adapt from low-efficient production methods to eco-friendly means.⁵⁹ However, this approach may result in significant costs on the industries including the expense of promoting low emissions and high-efficiency technologies and the cost to consumers of changing spending behaviors from high emission-intensive to low emissions products. As discussed above, the commitment for GHG emission reduction is still voluntary, with different degrees in levels of emission between developed and developing countries, and as a result, unequal competition conditions between domestic and foreign producers and the issue of carbon leakage have occurred. A broad range of measures that address competitiveness and carbon leakage arising from the implementation of carbon reductions regime can be classified into three categories:⁶⁰ measures leveling costs upward through the conclusion of global or sectorial agreements (1.4.1), measures adjusting carbon cost downward by

⁵⁷ WTO and UNEP, "Trade and Climate Change," 121.

⁵⁸ Stern and Treasury, *The Economics of Climate Change*, xviii.

⁵⁹ Susanne Dröge et al., "Tackling Leakage in a World of Unequal Carbon Prices," *Climate Strategies* 1 (2009): 11, <http://climatestrategies.org/wp-content/uploads/2009/10/cs-leakage-final-230909.pdf>.

⁶⁰ Jean Charles Hourcade et al., *Differentiation and Dynamics of EU ETS Industrial Competitiveness Impacts: Final Report*, (May 2014); and Verena Graichen et al., "Impacts of the EU Emissions Trading Scheme on the Industrial Competitiveness in Germany," *Berlin: German Federal Environment Agency*, 2008; and Julia Reinaud, "Issues behind Competitiveness and Carbon Leakage," *Focus on Heavy Industry*. Paris: IEA. IEA Information Paper 2 (2008), http://lepii.upmf-grenoble.fr/IMG/pdf/Reinaud_issues-behind-competitiveness_2008.pdf; and Trevor Houser, *Leveling the Carbon Playing Field: International Competition and US Climate Policy Design* (Peterson Institute, 2008); and Karsten Neuhoff et al., "The Role of Auctions for Emissions Trading," *Climate Strategies Report*. Cambridge, 2008, <http://climatestrategies.org/wp-content/uploads/2008/10/role-of-auctions-09-oct-08final.pdf>.

supporting the domestic industry (1.4.2) and measures at the border implementing flexible adjustments (1.4.3).

1.4.1 A global agreement for a cost adjustment of GHG emissions

A global climate agreement is undoubtedly the best solution to address the carbon leakage issue.⁶¹ The imposition of similar carbon price levels or similar caps for all participating countries and binding commitments of emissions reduction through a global climate change agreement that is underpinned by each nation's legislation could restrict disputes that may arise between countries and stem industries from relocating their production bases according to the difference of carbon price. In the long term, this could also help to attract investors looking for countries with a sturdy and predictable climate policy framework rather than those that refuse to participate to such agreement.

However, in order to persuade countries to become a party to such an agreement, huge incentives are necessary.⁶² Developing countries would need sufficient financial assistance, which must be provided by developed countries. The top-ten carbon emitting countries, which account for two-thirds of global GHG emission,⁶³ will not agree on an emissions reduction commitment in the foreseeable future. For developing countries, the question of how to balance the autonomy of national legislatures and the influence of supra-national authorities to fiscal policy

⁶¹ van Asselt and Brewer, "Addressing Competitiveness and Leakage Concerns in Climate Policy," 43.

⁶² Michel Colombier and Karsten Neuhoff, "Sectoral Emission Agreements Regional Affairs," *Envtl. Pol'y & L.* 38 (2008): 164.

⁶³ Those countries are China, the U.S, India, Russia, Japan, Germany, South Korea, Canada, Iran, and the UK. See Payam Nejat et al., "A Global Review of Energy Consumption, CO2 Emissions and Policy in the Residential Sector (with an Overview of the Top Ten CO2 Emitting Countries)," *Renewable and Sustainable Energy Reviews* 43 (March 2015): 843–62.

continues to be controversial.⁶⁴ Therefore, countries are unlikely to make effective commitments to the mitigation of climate change;⁶⁵ and the problem of carbon leakage will remain.

1.4.2 Measures supporting domestic industries

The objective of support measures is to compensate domestic producers for the negative effects of GHG emissions reduction measures. Such measures can be in forms of free allowances under an emission trading scheme to offset negative economic and financial consequences. The emissions trading scheme, as addressed in 1.3.1, is considered as a system that is most efficient to combat climate change that countries have adopted in recent years. To prevent carbon leakage, under the ETS, a country can issue free allowances in a certain quantity to domestic industries instead of requiring them to buy allowances for all of their emissions. The number of free allowances for domestic industries could be increased to the level of their current emissions. Producers pay for emissions allowances only when their GHG emissions level exceeds that limit. Conversely, domestic producers can even earn profits if they lower their emissions and sell their unused allowance within the market, even though they received their allowances for free.⁶⁶

Financial assistance for domestic firms in the context of climate change mitigation aims to compensate them for the negative economic effects of emissions reduction policy. However, such measures tend to restrict incentives to cut emissions

⁶⁴ Gary Clyde Hufbauer and Jisun Kim, "Climate Change and Trade: Searching for Ways to Avoid a Train Wreck," *TAIT second conference "Climate Change, Trade and Competitiveness: Issues for the WTO"*, Geneva, June 2010, 24, http://www.wto.int/english/res_e/reser_e/climate_jun10_e/background_paper7_e.pdf.

⁶⁵ Bodansky, Brunnée, and Rajamani, *International Climate Change Law*, 10.

⁶⁶ In addition to free allocation allowances, there are some other types of supporting measures that governments can use to prevent carbon leakage, such as "Safety-valves" policy which helps domestic producers avoid high prices for allowances by imposing a maximum price for trading emission permits, "cross subsidization" and "carbon offsets," though this paper does not address them.

since firms' profits are more dependent on their ability to influence allocation decisions by governments than on their competitive performance. When such measures focus on protecting profits of domestic producers, they can undermine both the shift to low GHG emissions products and the trust crucial for future global cooperation. Therefore, their effectiveness on preventing carbon leakage is doubtful.⁶⁷

1.4.3 Flexible adjustments through border adjustments

A State could also address carbon leakage by imposing border adjustments that target imports and exports that originate from or are destined for countries that have no comparable GHG emissions reductions system. The key difference between this approach and the above two measures is that adjusting GHG emissions costs at the border could provide a mechanism to immediately address the issue of carbon leakage.⁶⁸ Such Border Carbon Adjustments (BCAs) include tariffs, taxes, subsidies or technical regulations that can level GHG emissions costs both upward and downward. In other words, BCAs address the risk of carbon leakage by imposing trade restrictions on carbon-intensive imports and compensate emissions costs for domestic exporters. The proposal of a national climate policy with BCAs provisions has recently gained the support not only from policymakers but also from scholars.⁶⁹ The following sub-sections will highlight such measures in more details.

1.4.3.1 Measures targeting imports

First, international reserve allowances were proposed as a U.S climate change

⁶⁷ Dröge et al., "Tackling Leakage in a World of Unequal Carbon Prices," 48–49.

⁶⁸ The analysis of energy-intensive sectors subject to carbon pricing points out that trade flows are the significant cause of emission leakage in the short term, whereas capital flows supplement in the mid to long term. See Dröge et al., "Tackling Leakage in a World of Unequal Carbon Prices."

⁶⁹ van Asselt and Brewer, "Addressing Competitiveness and Leakage Concerns in Climate Policy," 42.

policy.⁷⁰ Under this measure, in order to gain access to a specific market, a product would either originate from a country that has a program equivalent to the emissions control program in the destination country, or it would be required to submit allowances sufficient to cover the attributable GHG emissions. Such allowances might be acquired by purchasing carbon credits from an established emissions trading scheme on the market or from a special international reserve. Failure to submit such allowances would bar entry of imported products.

Second, a price-based measure such as a duty, charge or tax on carbon-intensive products on the release of GHG emissions into the atmosphere is called “carbon tax” or Border Tax Adjustment (BTA).⁷¹ BTA is calculated according to the GHG emissions emitted by products during their manufacture and applies both to domestic and imported products. BTA can thus be applied both to consumers and producers, but many countries apply this “carbon tax” on consumers through a duty on fuel consumption.⁷²

Third, a state may adopt standards or technical regulations relating to the GHG emissions generated during a product’s use or the production process. Such measures, though intended to be applied equally to domestic and imported products, may cause an adverse effect on the competitive condition in the market for imports. The producers could be required to surrender allowances for the price difference between the cost of production and the carbon footprint to offset lower standards pertinent to imported goods, or otherwise have their products banned from entering the market for

⁷⁰ Ibid. at 45.

⁷¹ A proposal to introduce BTAs of carbon taxes was made in Europe as early as at the beginning of the 1990s. They were linked to the efforts initiated by Finland to establish an EC-wide carbon tax system. See Section 2.1.

⁷² WTO and UNEP, “Trade and Climate Change,” 90.

non-compliance.⁷³ A standard could also be a labeling requirement indicating the carbon footprint of a product. The original idea of this measure is for consumers preferences on low GHG emissions products, but in fact, carbon labeling requirements can be used to implement or facilitate an ETS or carbon tax system.⁷⁴

1.4.3.2 Measures targeting export

Besides measures targeting imports to ensure a level playing field in a country's domestic market, a government could also issue measures targeting exports to offset the competitive disadvantages of its products in foreign markets.⁷⁵ The aim of such measures is to reduce the costs of production for exports, such as by imposing an export side border adjustment of charges incurred under an ETS. For instance, in the case of admission allowance rebates on exporters, a certain amount of emissions allowance issued under ETSs could be forgone. However, these types of measures may produce negative consequences for the effectiveness of the national GHG emissions reduction system when they provide incentives for producers to focus on foreign market rather than investing in emission reduction technologies.

1.5 The prospects to the use of Border Carbon Adjustments

Many studies consider Border Carbon Adjustments as a useful policy tool to offset carbon leakage and deal with climate change in the forms of carbon taxation and

⁷³ For an example, see The U.S. House of Representatives Committee on Energy and Commerce, *Climate Change Legislation Design White Paper: Competitiveness Concerns/Engaging Developing Countries*, (2008), 10–11.

⁷⁴ There is a proposal of “carbon passport” indicating the carbon footprint of a product in order to provide necessary information to calculate the level of border adjustment in ETS or carbon tax system. See Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim, *Global Warming and the World Trading System* (Columbia University Press, 2009), 68.

⁷⁵ A proposal from French government suggested that 2% of the total number of the GHG emissions allowances under the EU ETS third phase would be rebated for EU exporters. See Kateryna Holzer, *Carbon-Related Border Adjustment and WTO Law* (Edward Elgar Publishing, 2014), 53.

emission trading schemes.⁷⁶ Many national climate policies and proposals have concerned on the implementation of BCAs such as the EU's ETS, proposed federal climate legislation in the U.S, and the expected national carbon market in China.⁷⁷ Economic studies show that the adverse effects of carbon leakage can override the benefits of national climate actions.⁷⁸ Simulations on energy-intensive and trade-exposed industries also show that unilateral climate measures without BCAs in the EU countries result in the increase of emissions in non-EU regions from 5 percent to 30 percent.⁷⁹ These empirical studies show the existence of risk from carbon leakage and a demand to deal with this issue.⁸⁰ This pressure will be more rigorous to the extent that many countries submitted more ambitious National Determined Contributions (NDCs) within the Paris Agreement compared to the earlier commitment within the Kyoto Protocol as discussed previously.

Recent studies, therefore, find the potential solution of BCAs to reduce carbon leakage and address climate change without restraining the competitive conditions in the market.⁸¹ Specifically, BCAs would reduce the proportion of carbon leakage by

⁷⁶ Proposals of the U.S and the EU will be discussed in Section 2.1. See also M. Mehling et al., "Designing Border Carbon Adjustments for Enhanced Climate Action," *Climate Strategies*, 2017, 41; and Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 55.

⁷⁷ Mehling et al., "Designing Border Carbon Adjustments for Enhanced Climate Action," 41.

⁷⁸ Cary Coglianese and Jocelyn D'Ambrosio, "Policymaking under Pressure: The Perils of Incremental Responses to Climate Change," *Conn. L. Rev.* 40 (2007): 1411.

⁷⁹ Rahel Aichele and Gabriel Felbermayr, "Kyoto and Carbon Leakage: An Empirical Analysis of the Carbon Content of Bilateral Trade," *The Review of Economics and Statistics* 97, no. 1 (January 7, 2014): 104–15; and Christoph Böhringer, Edward J. Balistreri, and Thomas F. Rutherford, "The Role of Border Carbon Adjustment in Unilateral Climate Policy: Overview of an Energy Modeling Forum Study (EMF 29)," *Energy Economics*, The Role of Border Carbon Adjustment in Unilateral Climate Policy: Results from EMF 29, 34 (December 1, 2012): S97–110; and Grégoire Garsous and Tomasz Kozluk, "Foreign Direct Investment and The Pollution Haven Hypothesis," 2017.

⁸⁰ C. Fisher and A. K. Fox, "Comparing Policies to Combat Emissions Leakage: Border Carbon Adjustment versus Rebate," *Journal of Environmental Economics and Management* 64, no. 2 (2012): 199–216.

⁸¹ Frédéric Branger and Philippe Quirion, "Would Border Carbon Adjustments Prevent Carbon Leakage and Heavy Industry Competitiveness Losses? Insights from a Meta-Analysis of Recent Economic Studies," *Ecological Economics* 99 (2014): 29–39; Böhringer, Balistreri, and Rutherford, "The Role of

approximately 6 percent compared to a climate regime without border adjustments on GHG emissions.⁸² The effect of BCAs on reducing of carbon leakage could also lessen production losses from energy intensive and trade exposed industries ranging from 2.8 percent to 1 percent.⁸³ On a comparative basis, BCAs could be significantly greater in effectiveness than duty exemptions and output-based abatements since they effect on consumer preferences with price incentives. However, some researches also yield that the effectiveness of BCAs can only achieve at most when they apply to critical energy-intensive and trade-exposed sectors such as cement, aluminum, steel, and electricity.⁸⁴

Although there are several studies in favor of the implementation of BCAs, many scholars are skeptic about such measures in the climate policies. Criticism is mainly on the environmental, political and legal outcome of such measures. The main argument is the feasibility that foreign producers in countries with lax or no GHG-reduction regulations may try to adapt to the border adjustments on carbon rather than shifting to climate-friendly technologies.⁸⁵ The implementation of BCAs is also vague to the extent of advocating developing countries to participate in the global GHG emission reduction efforts. Since BCAs need to target compelling volumes of

Border Carbon Adjustment in Unilateral Climate Policy”; Onno Kuik and Marjan Hofkes, “Border Adjustment for European Emissions Trading: Competitiveness and Carbon Leakage,” *Energy Policy* 38, no. 4 (2010): 1741–1748; and Niven Winchester, Sergey Paltsev, and John M. Reilly, “Will Border Carbon Adjustments Work?,” *The BE Journal of Economic Analysis & Policy* 11, no. 1 (2011).

⁸² Branger and Quirion, “Would Border Carbon Adjustments Prevent Carbon Leakage and Heavy Industry Competitiveness Losses?”

⁸³ Böhringer, Balistreri, and Rutherford, “The Role of Border Carbon Adjustment in Unilateral Climate Policy.”

⁸⁴ Ibid.; and Stéphanie Monjon and Philippe Quirion, “A Border Adjustment for the EU ETS: Reconciling WTO Rules and Capacity to Tackle Carbon Leakage,” *Climate Policy* 11, no. 5 (September 1, 2011): 1212–25.

⁸⁵ Aaron Cosbey et al., “A Guide for the Concerned: Guidance on the Elaboration and Implementation of Border Carbon Adjustment,” 2012, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178312; Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 58.

imported products in order to encourage exporting countries to adopt more stringent climate policies, many economic analyses mentioned above suggests the coverage of such measures only limit to some carbon-intensive and trade-exposed sectors for the administrative feasibility and technical capacity including fossil fuels and raw materials such as cement, steel, and aluminum.

As will be discussed in the next chapter, several scholars consider the implementation of BCAs result in a violation of WTO law. Despite suspicions in theory and limited experience in practice, BCAs have recently been invoked as a policy-option in both developed and developing countries for the improvement of climate mitigation measures where global cooperation does not achieve significant progress.⁸⁶ An increasing number of scholars believe that BCAs are promising because BCAs can reduce the economic impacts of ambitious climate policies and provide an incentive for other countries to strengthen their climate efforts.⁸⁷

1.6 The relationship between climate change policy and international trade rules

Trade many impact on the level of GHG emissions and reduce harmful influences on climate.⁸⁸ Every business activity may affect the environment and the climate. Much of the world's energy needs depend on fossil fuels. Combined with an increase in the global population, these energy demands will lead to a higher level of GHG emissions. In addition, any country seeking economic development without careful planning will increase GHG emissions. Today, many countries take a liberalized approach to trade which has both positive and negative effects on the

⁸⁶ Weber, "Border Tax Adjustment – Legal Perspective," 407–8.

⁸⁷ Mehling et al., "Designing Border Carbon Adjustments for Enhanced Climate Action," 16.

⁸⁸ Cottier and Shariff, "International Trade and Climate Change," 417.

emission.⁸⁹

For example, trade liberalization promotes clean technology development that can offset emissions increases resulting from economic activities. The more actively a country participates in the global economy, the more it gains from research and development, for example, technology transfer in other countries.⁹⁰ Furthermore, when citizens of a country reach a certain level of wealth, they become increasingly concerned about the environment.⁹¹ As a result, consumers with improved incomes often adjust their shopping behaviors to products that are more friendly to the environment.⁹²

On the other side, climate change plays an essential role in the sustainable economic development by changing the comparative advantages of countries, especially concerning agriculture products. Climate change may affect agriculture and decrease exports of relevant products. In addition, extreme weather events triggered by climate change may severely damage supply, transport and distribution chains.⁹³

⁸⁹ Cole and Elliott found that more trade openness would be likely to increase CO₂ emissions. The data on dioxide emissions from 32 developed and developing countries during the period 1975-1995 showed that the increase of trade reach to every 1 percent, it would cause the increase per capita dioxide emissions by 0.04 percent. See Matthew A. Cole and Robert JR Elliott, "Determining the Trade-environment Composition Effect: The Role of Capital, Labor and Environmental Regulations," *Journal of Environmental Economics and Management* 46, no. 3 (2003): 363-383.

⁹⁰ Margareta Tîmbur, "International Trade Development - Risks for the Environment?," *Economy Transdisciplinarity Cognition; Bacau* 13, no. 2 (2010): 6-22.

⁹¹ The environmental Kuznets curve explains that the increase of income per capita will worsen the environmental degradation until the curve reaches a turning point; once the income passes a certain threshold, the population in that country will have greater concern for environmental quality. However, The studies on whether the Kuznets curve could apply directly to GHG emissions are still debated. Some scholars have proven that the Kuznets curve hypothesis is only feasible when applying to OECD members. See Rachel S. Franklin and Matthias Ruth, "Growing up and Cleaning up: The Environmental Kuznets Curve Redux," *Applied Geography, Environmental Kuznets Curves and Environment-Development Research*, 32, no. 1 (January 2012): 29-39; and WTO and UNEP, *Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization* (UNEP/Earthprint, 2009), 53.

⁹² Cottier and Shariff, "International Trade and Climate Change," 418.

⁹³ Intergovernmental Panel on Climate (IPCC), *Climate Change 2014*, 3:368.

Economists today consider climate as a public good and find that industries have not fully pay for their impact on environment. Some of them consider climate change to be the most significant market failure ever in the history of human.⁹⁴ According to Stern and Treasury, the best solution to address climate change would be the pricing of carbon through tax, trading or regulations since this approach shifts consumers and business sectors away from high carbon good and services.⁹⁵ As a result, some trade-restrictive measures at the national level contribute to the attainment of climate objectives; for instance, tariffs, internal taxes, and subsidies can prevent emission-intensive products and incentivize the transformation to low carbon economy. However, from the international trade rules perspective, the World Trade Organization (WTO) strives to serve as a legal baseline against those countries that conceal protectionism behind environment and climate policies.⁹⁶ Accordingly, this relationship between climate change and international trade rules has called for the efficient co-existence between climate change policies and international trade regulations. However, there is risk of conflicts arising between the rights and obligations of Member States under multilateral trade agreements of the WTO and their national climate change mitigation measures especially those that design to address the issue of carbon leakage. These conflicts and legal hurdles will be elaborated in the Chapter 2.

1.7 Conclusion to Chapter 1

Climate change is one of the most severe challenge for international

⁹⁴ Stern and Treasury, *The Economics of Climate Change*, 25; See also Brian Andrew, “Market Failure, Government Failure and Externalities in Climate Change Mitigation: The Case for a Carbon Tax,” *Public Admin. Dev.* 28, no. 5 (December 1, 2008): 394.

⁹⁵ Stern and Treasury, *The Economics of Climate Change*, xviii.

⁹⁶ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 31.

community and it requires a significant change in the global socio-economic patterns of production and consumption. This change cannot be done by one country alone, but calls for a multinational international framework. Although negotiations started more than twenty years ago, there has been no significant achievement in the international cooperation on climate change mitigation yet. Against this background, some countries have developed national measures promoting climate change mitigation and those aimed at preventing carbon leakage and leveling the playing field. Among several measures that a country may adopt to address this issue, Border Carbon Adjustments have increasingly gained support from scholars and policy makers. However, they may be problematic under WTO law.

Chapter 2: Border Carbon Adjustments in Practice and Their Compatibility with WTO Law

This chapter firstly highlights past proposals of Border Carbon Adjustments that the U.S and the EU have made. It then addresses the main question whether the BCAs are compatible with WTO law. Specifically, BCAs may arise the issue of compatibility with several provisions of General Agreement on Tariff and Trade concerning market access, non-discrimination principles and general exceptions to these principles. In addition, the Agreement on Technical Barriers to Trade and the Agreement on Subsidies and Countervailing Measures may be relevant. Finally, the chapter explores limits to a multilateral approach within the WTO for the consistency of BCAs.

2.1. Past proposals and limitations concerning Border Carbon Adjustments

Countries have proposed the implementation of border carbon adjustments for more than two decades but such measures are rarely adopted by governments. However, recently, BCAs have been introduced as a policy option with greater willingness in developed countries such as the U.S and the EU or mentioned as a prospective instrument in some developing countries.⁹⁷ The following sections analyze the context and substances of past proposals from the EU and the U.S that exhibit the growing policy expectations for determined climate actions.

2.1.1 The European Union

In 2005, the European Union initiated the first Emissions Trading System

⁹⁷ Mexico committed an emissions reduction of 40 percent, subject to include BCAs in its NDC. See Mexico Government, “Intended Nationally Determined Contribution (INDC) for the Paris Agreement,” March 30, 2015, 2.

(ETS) that would become operational through four phases (from 2005 to 2030). The objective of the first phase was to satisfy the EU's commitment to emission reductions under the Kyoto Protocol (1997) based on Directive 2003/87/EC.⁹⁸ The EU ETS introduced a cap for GHG emissions from energy-intensive producers and selected industries in which participants could receive emissions allowances through a predetermined allocation procedure. Depending on the cost of emissions, firms could decide for themselves whether they wanted to invest in climate-friendly technologies or use the allowances alternately.⁹⁹ The total allowances relating to the emissions that a firm had generated would be submitted annually to the regulator of the ETS. In general, the emitters had the flexibility to decide the emissions reduction method that was the most economically efficient.

All of these points mentioned above were the same for the other three phases, but some differences occurred regarding the type of allowances. In the first phase (2005-2007), the regulator allocated free emission allowances during the first trading phase. In the second phase (2008-2012), auctioning was introduced to emitters for a minor share of allowances. In the current trading phase (2013-2020), many modifications have been made to stabilize the carbon market and ensure a high price for emissions allowance.¹⁰⁰ These recent changes represent a significant improvement in the allocation process but has resulted in an intense debate on the issue of carbon leakage, including the option of measures at the border.

⁹⁸ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (Text with EEA relevance) of 2003, EP, CONSIL 32003L0087, EP, CONSIL (2003).

⁹⁹ Mikael Skou Andersen, "Border Adjustment with Taxes or Allowances to Level The Price of Carbon: Market-Based Perspectives," in *Innovation Addressing Climate Change Challenge*, ed. Mona Hymel et al., vol. XX, Critical Issues in Environmental Taxation (Edward Elgar Publishing, 2018), 20–30.

¹⁰⁰ Ibid.

In early 2018, the EU revised its legislative aim on ETS at the fourth phrase as a part of the EU's commitment to the Paris Agreement and entitled the policy framework as the "2030 *Climate Change Energy Policy Framework*." The revision in the framework endeavored to reduce allowances for those EU manufacturers as a way to reinforce market stability while also maintaining the allocation of free allowances as a safeguard against the international competitiveness of industrial sectors relating to carbon leakage.¹⁰¹

Between 2007 and 2016, European Commission and its member states have presented several proposals to the European Union to address the issue of carbon leakage with border adjustment measures.¹⁰² The European Commission raised the first proposal in 2007 called "Future Allowance Import Requirement" (FAIR) as a part of an unpublished drafted recommendation for a revised ETS Directive. This proposed article required importers to submit emissions allowances at the border with a very specific formula that estimated the potential emissions of a product.¹⁰³ The scope of this regulation comprised those products that the Commission perceived to have risks of carbon leakage and result in unfair international competition. While the EU did not fully accept the FAIR proposal,¹⁰⁴ elements of some of the ideas concerning border carbon adjustments would later be adopted into Article 10 of the revised ETS Directive

¹⁰¹ Ibid.

¹⁰² More recently, the Italian Senate requested the EU to examine an "addendum tax" focused on equalizing the energy and environmental costs of goods based on their carbon intensity, with adverse effects on the economy. Specifically, such negative impacts will be offset by adjustments to Value Added Taxation (VAT) rates. Since the proposal provides a lack of details on its policy design such as timeline or BCA levels, it is not considered separately below. See Mike Szabo, "Italian Lawmakers Urge EU to Introduce Carbon Border Adjustment to Protect Industry," *Carbon Pulse*, July 20, 2017.

¹⁰³ This formula was calculated based on the level of average emissions emitted for a specific product in the EU, then subtracted the free allocation allowances for its production, and then multiplied by the number of the actual imported product.

¹⁰⁴ Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowances Trading System of the Community of 2008, European Commission COM (2008) 30 final, European Commission (2008).

2009/29/EC.¹⁰⁵ This article represented an important change that border carbon adjustments could be used to access carbon leakage. Policy options for such actions included free allocation, the inclusion of importers in the EU ETS, and specific measures for identifying leakage from the electricity sector.¹⁰⁶

Later, the French government launched a second proposal which attempted to include importers of goods manufactured outside Europe into the EU ETS through the “Carbon Inclusion Mechanism” (CIM) in 2009. This unofficial paper recommended two possible options for the EU to consider in allowing the importers to purchase allowances for their products entering the EU. One focused on importing countries that failed to participate in a future international climate agreement, and the other on targeted goods from countries without a comparable program of carbon-pricing from the relevant economic sectors. Similar to the FAIR proposal, the proposal suggested that the EU would have based the computation on the average carbon content of the same goods produced within its territory, subtracting the free allocation of allowances based on product benchmarks, and multiplying by the number of imported products. However, the EU finally rejected this paper because it was believed that these ideas would only further complicate the debate on BCAs and hamper the divisive negotiations about the future climate regime.

Lastly, another unofficial paper from the French government after the establishment of the Paris Agreement introduced a different CIM.¹⁰⁷ The paper suggested that the EU ETS considers various criteria when applying BCAs to imported

¹⁰⁵ Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (Text with EEA relevance) of 2009, European Parliament 32009L0029, European Parliament (2009).

¹⁰⁶ Mehling et al., “Designing Border Carbon Adjustments for Enhanced Climate Action,” 27.

¹⁰⁷ Ibid. at 28.

products, including high carbon concentration and a substantial share of total GHG emissions in Europe, a feasible determination of the carbon footprint, a limited impact on the downstream sector (products that touch the consumers). This paper also suggested the first experiment with a CIM in the cement producing sector because this activity match all of the criteria and would have low impact on trade. The conclusion of this paper suggested that while the allocation of free allowances under the EU ETS created high windfall profits rather than preventing leakage, a CIM could directly address this issue caused by imports such as cement. In December 2016, the Committee on Environment, Public Health and Food Safety adopted the proposal and presented it in the overall EU ETS reform package for the fourth trading phase (2021-2030). Although the amendments to the EU ETS represented a crucial requirement to meet the EU national determined commitment under the Paris Agreement, the European Parliament rejected the proposal in a plenary vote in February 2017.¹⁰⁸

2.1.2 The United States

In the United States, various administrations have been concerned about the different types of action that other countries are taking on climate because there is the view that it will affect the American domestic economy. The U.S, for examples, is concerned that any global action on the climate will result in inconsistencies that could directly affect American manufacturing such as in the dispute over the reduction of emissions. Such concern resulted in the Senate passing an unanimous resolution in 1997 proclaiming that the U.S should not participate any climate agreement that would “result in serious harm to the U.S economy” or impose limits on GHG emissions

¹⁰⁸ Wilf Lytton, “ETS Reform Vote Expected to Boost Cement Sector’s Subsidy to €2.8 Billion by 2030,” *Sandbag*, February 21, 2017.

unless such agreement provides similar limits for developing countries.¹⁰⁹ As a consequence, the Bush administration rejected submitting the Kyoto Protocol to Congress for ratification.

Since 2006, several legislative proposals have been introduced featuring some forms of BCA to address economic and environmental adverse effects. However, the rise in partisanship and the growing polarization of climate policy debates within the U.S political system has prevented such proposals from passing.

At the state level in 2013, California successfully issued an economy-wide ETS that comprised of a type of border adjustment that prevented carbon leakage when purchasing electricity from neighboring states. However, other proposals in California to expand such adjustment to other sectors never came into effect regarding the political issues.

With the commencement of Trump administration and the majority of Republican party in Congress and several state legislatures, the prospects for an ambitious U.S climate policy became uncertain again. However, it is interesting to note that border adjustments temporarily raised to the vanguard of the political debate as part of Republican proposals on tax reform. In a blueprint published in 2016, the Speaker of the House of Representatives and the Chairman of the House Ways and Means Committee recommended corporate income taxes for a reduction to a stable 20 percent. This tax-cut was partly financed by a border adjustment that would apply to certain business abatements for imports and exempt exports from taxation at the same

¹⁰⁹ Senate Resolution 98-105th Congress (1997-1998): A resolution expressing the sense of the Senate regarding the conditions for the United States becoming a signatory to any international agreement on greenhouse gas emissions under the United Nations Framework Convention on Climate Change of 1997, Senate 98, Senate (1997).

time.¹¹⁰ While this proposal is unlikely to pass the political process, a subsequent one from a group of veteran Republican leaders suggests combining a carbon tax with a BCA as a solution to climate change. This proposal is resulting in a context of partisan division, populism, and inequality.

2.1.3 Limitations and Difficulties

Most of the proposed Border Carbon Adjustments (BCAs) share a common outcome is that they never came into effect because of the political difficulties each proposal confronted in their countries. Because there are the broad perceptions that BCAs are controversial and technically challenging to apply, any successful proposal will have to overcome these thoughts and advance towards implementation. Also, recent proposals, even the most elaborate one such as that presented before the U.S Congress, have shown potential legal challenges and difficulties even at the technical and administrative level. They tend to focus on broad principles and definitions, extend detailed features to future regulations and guidance, and included the process of determining the carbon footprint in imported products, or the emissions intensity of foreign industries.

Among the proposals outlined above, only the Californian Border Carbon Adjustment for imported electricity was adopted in real life. Two constituents seem to have led to this implementation. First, the Californian BCA covers a single commodity – electricity that imported from neighboring states where data on emission factors are easily accessible. Second, because the legislation solely affects domestic commerce in the U.S, it would not cause any international disputes. Since Border Carbon Adjustments have not been applied in an international context and to products whose

¹¹⁰ Gary Clyde Hufbauer and Zhiyao Lucy Lu, “Border Tax Adjustments: Assessing Risks and Rewards,” 2017, <https://piie.com/system/files/documents/pb17-3.pdf>, and Paul Ryan, “A Better Way: Our Vision for a Confident America,” *Health Care* 22 (2016).

carbon footprint is more complicated to trace, it is difficult to assume robust lessons for BCA pattern and implementation from the Californian measure. However, BCAs that have been introduced in various proposals reflect conceptual approaches and many of them showed opportunities and challenges. They may serve as a model for policy makers on which to build future policy.

2.2. Border adjustment measures in international trade

2.2.1 The history and evolution of the border adjustment practices

In international trade, governments often applied border adjustment as a tool for restoring the competitive positions of domestic producers and increasing revenues.¹¹¹ A GATT Working Party described “Border Tax Adjustments” (BTAs), as follows:

any fiscal measures which put into effect, in whole or in part, the destination principle (i.e. which enable exported products to be relieved of some or all of the tax charged in the exporting country in respect of similar domestic products sold to consumers on the home market) and which enable imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of similar domestic products.¹¹²

Accordingly, BTAs apply to imported products, corresponding to a tax imposed on similar products in the domestic market. They can trigger an exemption or a refund of charges or taxes already paid by domestic producers when their products are exported. The objective of BTAs is to guarantee the trade neutrality of domestic

¹¹¹ WTO and UNEP, “Trade and Climate Change,” 100.

¹¹² GATT Working Parties, *Report by the Working Party on Border Tax Adjustment*, L/3464, para.4.

taxation, and to avoid distortions in competition between domestic and imported products in absence of a uniform taxation system among countries. Hence, BTAs can prevent a situation that results in either double taxation or non-taxation.¹¹³

In addition to fiscal measures, border adjustments can also take the form of domestic regulations such as standards, requirements that set conditions for the entry of particular products into a domestic market.¹¹⁴ The concept of implementing adjustments at the border was first recognized in the 18th century when countries applied BTAs in the name of “excise taxes” on imported alcohol, cigarettes and fuel.¹¹⁵ Later, in the nineteenth century, bilateral trade agreements included regulations on BTAs, notably Value Added Tax (VAT) and excise duties, as an instrument to avoid double taxation.¹¹⁶ These trade practices have remained in place and have continued to develop.

However, BTAs have not always been accepted by countries. When the European Community (EC), for examples, adopted export rebates of VAT as a tax harmonization target in the 1960s, concerns were raised about competition pressure between European producers and their competitors, specifically the U.S producers, in third-country markets. Scholars criticized this EC policy because a shift between origin and destination basis in the VAT does not make significant effects in protection, and therefore the use of a destination-based duty to accompany the VAT resulted in providing no trade advantage to the EC.¹¹⁷

¹¹³ Roger W. Rosendahl, “Border Tax Adjustments: Problems and Proposals,” *Law & Pol’y Int’l Bus.* 2 (1970): 85–146.

¹¹⁴ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 64.

¹¹⁵ Frank Biermann and Rainer Brohm, “Implementing the Kyoto Protocol without the USA: The Strategic Role of Energy Tax Adjustments at the Border,” *Climate Policy* 4, no. 3 (2004): 289–302.

¹¹⁶ *Ibid.* at 291–92.

¹¹⁷ Ben Lockwood and John Whalley, “Carbon-Motivated Border Tax Adjustments: Old Wine in Green Bottles?,” *The World Economy* 33, no. 6 (2010): 810–819.

Although the traditional purpose of applying border adjustment measures was to improve the competitiveness of domestic producers, some countries have applied such measures for other objectives, such as environmental protection. A typical example is the U.S Superfund Amendments and Reauthorization Act of 1986 (Superfund Act). Its purpose was to generate revenue for the costs of disposal of hazardous wastes and toxic chemicals by imposing BTAs on certain substances, which were inputs for chemical derivatives used in the manufacture of fertilizer.¹¹⁸ Although Canada, the EC, and Mexico challenged this Act, a GATT panel found it was consistent with GATT rules, to the extent that the duty was equivalent to similar domestically produced substances.¹¹⁹

Later, the U.S introduced the Omnibus Budget Reconciliation Act of 1989, which included an excise tax applied to ozone-depleting chemicals (ODCs tax) in order to phase-out the production of ozone-depleting substances under its commitments in the Montreal Protocol.¹²⁰ The ODCs tax adjusted imports of these chemicals with a charge equal to the domestic tax. Also, when a domestically produced ODC was exported, a rebate may be allowed. The ODCs-related border adjustment was implemented to protect domestic producers, and to achieve the phase-out of ozone-depleting substances ODCs within the U.S international commitments.¹²¹

These U.S Acts represent border adjustment measures that apply to imported and exported products in connection with a country's environmental policies. Such measures may apply, in the climate change context, to the level of GHG emission of a

¹¹⁸ C. C. H. Editors, *U.S. Master Excise Tax Guide* (CCH, 2008).

¹¹⁹ United States - Taxes on Petroleum and Certain Imported Substances, L/6175-34S/136, para.5.2.7-10 (GATT Panel Report June 17, 1987).

¹²⁰ Sara P. Boroshok, "Environmental Excise Taxes, Focusing on Ozone-Depleting Chemicals, 1993," accessed April 2, 2018 <https://www.irs.gov/pub/irs-soi/93exenviro.pdf>.

¹²¹ Biermann and Brohm, "Implementing the Kyoto Protocol without the USA," 294.

product during its production phase. However, in contrast to the BTAs under the above mentioned Acts, what matters in climate-related border adjustments is not the inputs of final products but production processes including the carbon footprint of a product. As discussed in the previous chapter, in addition to the traditional objective of leveling the playing field between domestic and imported products, climate-related border adjustments could be used to achieve more ambitious objectives, such as offsetting carbon leakage, internationalizing the social costs of carbon reduction, and encouraging the participation of countries in a global climate change mitigation regime. Therefore, because of political sensitivity, border carbon adjustments are much more controversial than traditional border adjustments regarding their WTO compatibility.¹²²

2.2.2 WTO legal framework concerning border carbon adjustments

Scholars argue both for and against the efficiency of a market mechanism in combating climate change and carbon leakage. Some believe that unilateral GHG emission reduction measures are only the second-best option, and universal emission taxes or cap-and-trade mechanisms should be preferred.¹²³ Others contend that unilateral BCAs could impede future cooperation toward multinational climate change agreements.¹²⁴ However, in light of the lack of development at the global level, still others argue that even individual actions are considerably better than no action at all.¹²⁵

As discussed in Chapter 1, BCAs include price-based and non-price-based

¹²² Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 258.

¹²³ James R. Markusen, "International Externalities and Optimal Tax Structures," *Journal of International Economics* 5, no. 1 (1975): 15–29.

¹²⁴ Trevor Houser, *Leveling the Carbon Playing Field: International Competition and US Climate Policy Design* (Peterson Institute, 2008); and S. Dröge et al., "Tackling Leakage in a World of Unequal Carbon Prices," *Climate Strategies* 1 (n.d.): 2–16.

¹²⁵ Madison Condon and Ada Ignaciuk, *Border Carbon Adjustment and International Trade: A Literature Review*, Paris, France, *OECD Trade and Environment Working Papers* (Paris, France: Organisation for Economic Cooperation and Development (OECD), October 31, 2013), 5.

restrictions and regulations.¹²⁶ Price-based measures are carbon taxes on imports, international reverse allowances to importers, or even export tax rebates for domestic producers. Non-price-based measures may include specific standards or requirements relating to the level of GHG emissions from imported products.

BCAs may fall within the scope of GATT/WTO law.¹²⁷ Some provisions of WTO Agreements may be relevant to border adjustment on importation and border adjustment on exportation. A border adjustment imposed on imports is subject to the non-discrimination rules of the most-favoured-nation treatment and the national treatment principles (Article I and III of the GATT 1994). On the other hand, border adjustments imposed on exports is regulated by WTO rules on subsidies under the GATT 1994 and the Agreement on Subsidies and Countervailing Measures (the SCM Agreement). The Agreement on Technical Barriers to Trade (the TBT Agreement) may be relevant if border adjustments concern product's characteristics.

Since WTO Agreements at the time they were adopted were not designed to address climate change policies, the interface between trade rules and domestic climate change measures may raise a legal complex issue. The non-discrimination principles, for instances, focus on the fair treatment between imported products and domestic products. However, climate change related policies targeting GHG reductions primarily deal with process and production methods rather than the products *per se*. Besides, it may be difficult to define the comparable climate-policies and comparable effects of GHG related measures between countries, especially in the context of Article

¹²⁶ Gabrielle Marceau, "The Interface Between the Trade Rules and Climate Change Actions," in *Legal Issues on Climate Change and International Trade Law*, ed. Deok-Young Park (Springer, 2016), 5–6.

¹²⁷ Joost Pauwelyn, "Carbon Leakage Measures and Border Tax Adjustments under WTO Law," 2012, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2026879; Reinhard Quick, "Border Tax Adjustment in the Context of Emission Trading: Climate Protection of Naked Protectionism," *Global Trade & Cust. J.* 3 (2008): 163; and WTO and UNEP, *Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization* (UNEP/Earthprint, 2009).

XX of GATT and the TBT Agreement.

Another example relates to border adjustment on exportation. When BCA measures provide financial aid and tax rebates targeting specific producers, industrial sectors or nations, these measures may raise questions about consistency with GATT and the SCM Agreement. While the WTO allows its members to rebate or remit taxes applied on export products, it prohibits the imposition of such measures on firms or industries destined for exportation. These issues will be elaborated below.

2.3. The eligibility of price-based climate measure for border adjustment

A threshold issue concerning the legality of a price-based climate measure is the eligibility of such measure for border adjustment.¹²⁸ Only indirect taxes (taxes applied to products) can be adjusted at the border, while direct taxes (taxes applied to producers) cannot. Accordingly, if a price-based BCA (a carbon tax or an international reverse allowance) can be considered as an indirect tax, it would be subject to Article I and III:2 of GATT as an internal tax.¹²⁹ Otherwise, such measure would be subjected to Article II as direct tax or a tariff.¹³⁰

Specifically, Article II of the GATT requires that duties on imported products at a border must be limited to tariffs and it prevents countries from increasing tariffs without the re-negotiation of market access commitments. Article II:1(b) states that imported products included in a schedule of tariff concession are “exempt from ordinary customs duties in excess of those set forth and provided [in the tariff schedule]” and “... shall also be exempt from all other duties or charges of any kind

¹²⁸ Cosby et al., “A Guide for the Concerned.”

¹²⁹ Jochem Wiers, *Trade and Environment in the EC and the WTO: A Legal Analysis* (Europa Law Publishing, 2003).

¹³⁰ Ibid.

imposed on or in connection with importation in excess of those imposed on the date of this Agreement”

However, Article II:2(a) allows WTO Members to “impos[e] at any time on the importation of any product ... a charge equivalent to an internal tax ... in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part.” It provides a list of price-based measures other than tariffs that can be used at the border as long as such measures apply charges “equivalent” to internal taxes.¹³¹ The GATT Working Party in 1970 explained this exception basing on the destination principle that products should only be levied in the country of consumption.¹³² In accordance with this principle, it gave the following instructions:

There was a convergence of views to the effect that *taxes directly levied on products [i.e., indirect taxes]* were eligible for tax adjustments. Examples of such taxed comprised specific excise duties, sales taxes and cascade taxes and the tax on value added (...) Furthermore, the Working Party concluded that there was a convergence of views to the effect that certain *taxes that were not directly levied on products [i.e., direct taxes]* were not eligible for tax adjustment. Examples of such taxes comprised social security charges whether on employees and payroll taxes.¹³³ (emphasis

¹³¹ Article II:2(b) states as: “a charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article III* in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part.” The Article II also provides other types of price-based measures including anti-dumping, countervailing measures and charges for serviced render. In the context of climate change, countervailing measures may prevail when a state apply such duties on subsidized imports. The Section 6 of this Chapter discuss on this issue.

¹³² GATT Working Parties, para.14.

¹³³ *Ibid.*, para.10.

added)

Thus, the GATT Working Party distinguished between “indirect taxes” on products and “direct taxes” on producers to the extent that only one of them can be adjusted at the border. While indirect taxes are eligible for adjustment and “equivalent” to internal taxes, other taxes that are not imposed directly on products are normally not eligible for adjustment and subject to the requirements of Article II:1(b).¹³⁴ When BCAs are in the form of carbon taxes on imports or international reverse allowances, the crucial question is whether such measures can be classified as direct or indirect taxes.

Some scholars believe that the consideration of border tax adjustments should rely solely on the destination principle of indirect taxes.¹³⁵ When tariffs or customs duties applying to products based on their importation and exportation impose directly the cost of taxation on producers, border adjustments in the form of consumption taxes will pass such cost on consumers to level the playing field between domestic and imported products without placing any additional burdens on producers. This view explains the distinction between taxes with respect to taxation on consumers compared with taxation on foreign producers.¹³⁶ On the other hand, others consider that both indirect and direct taxes can affect the prices of a product, such as fuel taxes and payroll taxes that are both imposed on inputs and definitely be reflected in final product prices.¹³⁷ They predict that administrative feasibility might be the reason for the distinction of direct and indirect taxes because taxes levied on imports or

¹³⁴ Wiers, *Trade and Environment in the EC and the WTO*, 22.

¹³⁵ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 70; and Patrick Low, Gabrielle Marceau, and Julia Reinaud, “Interface between the Trade and Climate Change Regimes: Scoping the Issues, The,” *J. World Trade* 46 (2012): 485.

¹³⁶ Paul Demaret and Raoul Stewardson, “Border Tax Adjustment Under GATT and EC Law and General Implications for Environmental Taxes,” *J. World Trade* 28 (1994): 15.

¹³⁷ *Ibid.* at 6.

consumers are easier to trace than those levied on foreign producers.¹³⁸

However, there is no clear guidance on the classification of taxes that can be considered as border adjustment under Article II:2 of the GATT. Some scholars suggest that direct taxes may apply to the factors of production such as labor and capital, while indirect taxes may apply to products *per se*.¹³⁹ The Appellate Body in *China-Auto Parts (2009)* addressed a border duty applied on importation that may violate Article II:1 if it goes beyond the tariff schedule and an internal tax that complies with Article III:2 as long as it is non-discriminatory:

For a charge to constitute an ordinary customs duty [subject to Article II] ... the obligation to pay it must accrue at the moment and by virtue of or, in the words of Article II:1(b), “on,” importation. On the other hand, charges falling within the scope of Article III are charges that are imposed on goods that have already been “imported,” and that the obligation to pay them is triggered by an “internal” factor, something that takes place within the customs territory.¹⁴⁰

The Appellate Body found that China’s border duties imposed on auto parts were “internal charges” (not customs duties), as the charges were generated or set by an internal factor in which the declaration of duty accrued only after the completion of the motor vehicles, rather than the event of importation.¹⁴¹ This ruling may imply that if the obligation to pay a duty is due to an internal event, such as the distribution, sale, use or transportation of an imported product, then it is an “internal charge” governed

¹³⁸ *Ibid.* at 16.

¹³⁹ Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes,” 10.

¹⁴⁰ *China - Measures Affecting Imports of Automobile Parts*, WT/DS339,340,342/AB/R, para.158 (WTO Appellate Body Report January 12, 2009).

¹⁴¹ *Ibid.*, para.173.

by Article III. On the other hand, if the duty is imposed solely on importation and independently of distribution in the domestic market, then it is a border measure subject to the requirements of Article II.

Moreover, in *India-Additional Import Duties (2008)*,¹⁴² the Appellate Body considered the complaint by the U.S that India's import taxes violated Article II:1, since the taxation exceeded the tariff-binding rates. India argued that Article III and II:2(a) apply to the measure because such duties are "levied in lieu of state excise duties imposed in respect of like alcoholic beverages produced or manufactured in the state imposing the duty," and "to counterbalance sales taxes, VAT and other local taxes and charges."¹⁴³ The Appellate Body found that the same measure did not comply with the national treatment principle of Article III:2 since it did not apply any similar duty on "like" domestic products. It then examined the measure under Article II:1(b) and found a breach of the tariff binding commitment.

The Appellate Body also stated the relationship between border measures qualified as border tax adjustments under Article II:2(a) and border measures entitled custom duties under Article II:1(b), as follows:

The chapeau of Article II:2 ... connects Articles II:1(b) and II:2(a) and indicates that the two provisions are inter-related. *Article II:2(a), subject to the conditions stated therein, exempts a charge from the coverage of Article II:1(b). The participants agree that, if a charge satisfies the conditions of Article II:2(a), it would not result in a violation of Article II:1(b).* Thus, we consider that, in the context of this case involving the application of duties that are

¹⁴² India - Additional and Extra-Additional Duties on Imports from the United States, WT/DS360/AB/R (WTO Appellate Body Report October 30, 2008).

¹⁴³ *Ibid.* para.4.

claimed to correlate to certain internal taxes, Article II:1(b) and Article II:2(a) are closely related and must be interpreted together.¹⁴⁴ (emphasis added)

And

[T]he first sentence of Article III:2 prohibits the imposition on imported products of “internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products.” We therefore consider that *whether a charge is imposed “in excess of” a corresponding internal tax is an integral part of the analysis in determining whether the charge is justified under Article II:2(a).*¹⁴⁵ (emphasis added)

As suggested above, consistency with Article III:2 is a necessary condition for a border measure to be justified under Article II:2(a). Also, a price-based measure can fall under the scope of both Article II:1(b) and Article III, but these provisions cannot be applied simultaneously. As the Appellate Body found in the above cases, a border tax adjustment shares characteristics with both customs duties and those internal taxes applied to imports. In both situations, the obligation to pay such a tax first occur on the importation of a product. The reason behind such a measure is to level the playing field for imported products since similar requirements exist for domestic products.

In the context of climate change, whether a WTO Member may take a BCA in the form of a price-based border adjustment in accordance with Article II:2(a) is complicated because it is not a traditional measure. The purpose of a climate policy is to reduce the GHG emissions in a specific jurisdiction. Thus, the design of a

¹⁴⁴ *Ibid.* para.153.

¹⁴⁵ *Ibid.* para.180.

price-based BCA needs to be based on the pollution level that a producer or product may emit to the environment. However, governments cannot assess emissions based solely on final products but rather on various stages of the production process. From this point of view, it is not decided whether a carbon tax or an international reverse allowance applied on imported products can be classified as an indirect tax.

In regard to the production-process characteristic of border tax adjustments, the GATT panel in the *US-Superfund* (1987) case allowed an American tax that applied to inputs for processing chemical derivatives could be adjusted at the border, as follows:

The tax on certain imported substances equals in principle the amount of the tax which would have been imposed under the Superfund Act on the chemicals used as materials in the manufacture or production of the imported substance if these chemicals had been sold in the United States ... and *the tax rate is determined in principle in relation to the amount of these chemicals used and not in relation to the value of the imported substance*. The Panel therefore concluded that, to the extent that the tax on certain imported substances was equivalent to the tax borne by like domestic substances as a result of the tax on certain chemicals the tax met the national treatment requirement of Article III:2, first sentence.¹⁴⁶ (emphasis added)

Some scholars infer from this finding that GHG emissions released during the production process should be acknowledged as a vital part of the product, and hence

¹⁴⁶ United States - Taxes on Petroleum and Certain Imported Substances, L/6175-34S/136, para.5.2.8 (GATT Panel Report June 17, 1987).

the duties applying to such a product could be adjustable at the border.¹⁴⁷ However, others insist that such emission should not be considered as “inputs” during the manufacture of a product but rather on “outputs.”¹⁴⁸

In addition to the direct and indirect taxes discussed above, the GATT Working Party 1970 also listed a third category duty called “*taxes occultes*” or “hidden taxes.” This category includes consumption taxes on capital equipment, auxiliary materials, and services used in the transportation and production of other taxable goods. Some scholars believed that BCAs are hidden taxes since they are conceptual equivalent to direct taxes that cannot be adjusted at the border.¹⁴⁹ Other experts in the field considered that such hidden taxes level the playing field between similar products in the country of destination by internationalizing the social cost of carbon with increased prices.¹⁵⁰

Contrary to those comments, Holzer argued that the GATT Panel did not clarify whether or not the compliance test in the *US-Superfund (1987)* requires the inputs, on which a border tax adjustment can be imposed have to be physically present in the final product or not.¹⁵¹ Also, some scholars further support that such duty passes on to the consumer, which still affects the price and puts additional burdens on the producer.¹⁵² This characteristic makes carbon taxes similar to indirect taxes, such as

¹⁴⁷ Demaret and Stewardson, “Border Tax Adjustment Under GATT and EC Law and General Implications for Environmental Taxes,” 18; Joost Pauwelyn, “US Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law,” 2007, 20.

¹⁴⁸ Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes.”

¹⁴⁹ Gavin Goh, “World Trade Organization, Kyoto and Energy Tax Adjustments at the Border,” *Journal of World Trade* 38 38, no. 3 (2004): 397; Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 98.

¹⁵⁰ Pauwelyn, “Carbon Leakage Measures and Border Tax Adjustments under WTO Law”; “Tackling Leakage in a World of Unequal Carbon Prices.”

¹⁵¹ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 102.

¹⁵² Peter Wooders and Aaron Cosbey, “Climate-Linked Tariffs and Subsidies: Economic Aspects (Competitiveness & Leakage),” *Graduate Institute of International and Development Studies TAIT*

sale taxes and excise taxes.¹⁵³ Pauwelyn argued that carbon taxes can be qualified as indirect taxes as long as there is a “nexus” between such taxes and the products at issue. Because the purpose of carbon taxes is to incorporate the social cost of emission in the final price of products in order to encourage producers and consumers to the use of climate-friendly energies, even when these taxes are levied on producers based on emissions at production stage, the “nexus” is stronger than other process taxes, such as wage taxes or social-security taxes.¹⁵⁴

As the above arguments appear to suggest, the crucial question regarding the eligibility of a price-based BCA for border adjustment depends on the adjustability of a price-based measure applied on inputs not physically present in the final product. The GATT panel in the *US-Superfund* did not decide whether the input, to which a BCA is applied, must necessarily be physically present in the final product and it thus remains to be seen how WTO panels and Appellate Body decide this matter. But there are grounds to believe that a price-based measure would qualify as an indirect tax and adjustable at the border. Since price-based BCAs focus on limiting the consumption of carbon-intensive products, the measures have the connection with products. Moreover, the value of BCA is traced to the price of products, which consumers pay, not producers. Thus, a price-based BCA exhibits a property of an indirect tax.

2.4. Non-discrimination principles

2.4.1 The debate concerning the Product and Production Method

The compatibility of measures connected to the non-physical characteristics of

second conference "Climate Change, Trade and Competitiveness: Issues for the WTO," Geneva (2010); Pauwelyn, "US Federal Climate Policy and Competitiveness Concerns."

¹⁵³ Wooders and Cosbey, "Climate-Linked Tariffs and Subsidies: Economic Aspects (Competitiveness & Leakage)."

¹⁵⁴ Pauwelyn, "Carbon Leakage Measures and Border Tax Adjustments under WTO Law," 29.

a product with WTO law has been much debated. The term “processes and production methods” (PPMs) is not defined in the WTO Agreement, though some provisions refer to the term.¹⁵⁵ The OECD defines the term PPM as “the way in which products are manufactured or processed and natural resources extracted or harvested.”¹⁵⁶ Trade measures linked to PPM, which is usually called PPM measures, aim to achieve a public good such as environmental protection, improving human health, or climate change reduction.

PPMs are often classified into product-related and non-product-related measures.¹⁵⁷ Product-related PPMs leave a physical impact on the final product and addresses consumption externalities such as food-safety standards, pesticide residues or hormones in agriculture products. On the other hand, an example of non-product-related PPMs is an import ban on fish products harvested with harmful environmental methods, which address production externalities – the effects of the production method on the environment rather than downstream stages of a product’s lifecycle.

Debates concerning PPM measures started from the findings of GATT Panels in two cases of *US-Tuna*. In the early 1990s, the U.S imposed embargo on Mexican tuna harvested with methods that caused incidental dolphin killings. The U.S imposed a second embargo on countries that did not apply the same treatment to tuna from Mexico. Mexico challenged the first embargo in the *US-Tuna I (Mexico)* based on

¹⁵⁵ For instance, Paragraph 1 of Annex A to the SPS Agreement, paragraph 1 and 2 of Annex 1 to the TBT Agreement, Paragraph 12 of Annex 2 to the Agreement on Agriculture, and Article 51 of the TRIPS

¹⁵⁶ OECD, *Processes and Production Methods (PPMs): Conceptual Framework and Considerations on Use of PPM-Based Trade Measures*, OCDE/GD(97)137, (1997), 7, fn.30.

¹⁵⁷ Charnovitz, “The Law of Environmental PPMs in the WTO”; and Sanford E. Gaines, “Processes and Production Methods: How to Produce Sound Policy for Environmental PPM-Based Trade Measures Symposium: Trade, Sustainability and Global Governance,” *Colum. J. Envtl. L.* 27 (2002): 383–432; and Wiers, *Trade and Environment in the EC and the WTO*.

Articles XI, XIII and III of the GATT,¹⁵⁸ and the EEC challenged the second embargo in *US-Tuna I (EEC)* based on Articles XI and III of the GATT.¹⁵⁹

The GATT Panels in both cases found that PPM measures of the U.S could affect the market access of exporting members and would violate the non-discrimination principle, although the objective of such measures was environmental protection. In particular, the differences in the production methods of products at issue in these two cases would not have affected the outcome of the likeness test when these products were physically identical or similar. Also, the panels found these measures could not be justified under Article XX when they were aimed at the protection of environmental resources beyond the jurisdiction of the importing states.¹⁶⁰ The panels were afraid that to allow for the application of measures that emphasize the production side of imported products could have jeopardized the GATT's function, because a multilateral trade framework and legal security are not ensured.¹⁶¹ Thus, the GATT Panels in the *US-Tuna* cases stated that the distinctions between products based on the PPM characteristic are *a priori* illegal.

Critics of the GATT panels findings argue that these decisions could prevent GATT Members from pursuing environmental objectives as well as maintaining their sovereignty.¹⁶² Also, the decisions would isolate the WTO from critical human issues such as environment and climate change when panels considered PPM measures as

¹⁵⁸ United States - Restrictions on Imports of Tuna, DS21/R unadopted (GATT Panel Report September 3, 1991).

¹⁵⁹ United States - Restrictions on Imports of Tuna, DS29/R unadopted (GATT Panel Report June 16, 1994).

¹⁶⁰ *Ibid.*, para.7.1.2.1.1.

¹⁶¹ US-Tuna I (Mexico), para.5.26-7 (GATT Panel Report September 3, 1991).

¹⁶² See Charnovitz, "The Law of Environmental PPMs in the WTO," 60; and Vranes, "Carbon Taxes, PPMs and the GATT," 322; and Mitsuo Matsushita et al., *The World Trade Organization: Law, Practice, and Policy* (Oxford University Press, 2015), 722.

illegal.¹⁶³ On the other hand, approving the validity of the PPM characteristic under the likeness test may promote unilateral measures against imported products from countries with incomparable domestic policies and jeopardize the trade liberalization goals.¹⁶⁴ Moreover, the WTO agreements contain only a few provisions that apply directly to PPM measures while many trade disputes arise non-trade issues such as the environment.¹⁶⁵ Given that no international institution like the WTO has been established yet in the field of environment protection, the number of disputes relating to the conflict between trade development and environmental protection will increase, and debate on PPM will evolve.

Commentators often explain the reasoning of GATT Panels in two cases of *US-Tuna* by referring to the original idea behind the conclusion of GATT in 1947.¹⁶⁶ More precisely, the preamble of the GATT notes one of its objectives as:

Recognizing that their relations in the field of trade and economic endeavor should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, *developing the full use of the resources of the world and expanding the production and exchange of goods.*¹⁶⁷ (emphasis added)

¹⁶³ Robert E. Hudec, "GATT/WTO Constraints on National Regulation: Requiem for an Aim and Effects Test," in *Int'l L.*, vol. 32 (HeinOnline, 1998), 11–12; Charnovitz, "The Law of Environmental PPMs in the WTO," 63.

¹⁶⁴ Aaron Cosbey, "Achieving Consensus: Multilateral Trade Measures in Post-2012 Scenarios," *Climate and Trade*, 2009, 130; John H. Jackson, "World Trade Rules and Environmental Policies: Congruence or Conflict," *Wash. & Lee L. Rev.* 49 (1992): 11.

¹⁶⁵ GATT does not contain an independent provision on PPM measure whereas the TBT Agreement refers to PPM measures to the extent that those measures are "technical regulations" and lay down product characteristics. However, this definition will not cover PPM measures without any impact on the physical characteristics of the products. These issues will be analysed in the following sections in detail.

¹⁶⁶ David Sifonios, *Environmental Process and Production Methods (PPMs) in WTO Law* (Springer, 2018), 3.

¹⁶⁷ The Preamble of the GATT 1947.

The drafters of GATT, therefore, insisted that trade development be its main purpose. However, the preamble of the WTO Agreement, adopted in 1994, is slightly different from that of the GATT. The preamble states:

Recognizing that their relations in the field of trade and economic endeavor should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while *allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking 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.¹⁶⁸ (emphasis added)

The aim of the preamble of the WTO Agreement is not solely the expansion of trade, but sustainable development that requires the co-existence of economic development and environmental conservation. This change has played a vital role in the interpretation of the relevant GATT provisions.

The Appellate Body in *US-Shrimp (1998)*, for example, addressed issues related to the environment that GATT panels did not deal with.¹⁶⁹ In this case, the U.S required importers of shrimp products to ensure that their trawlers use “turtle excluder devices” in their nets. In its rulings, the Appellate Body clarified the right of the WTO Members to use trade measures to regulate environmental protection policies even when such measures require the adoption of comparable actions from exporting

¹⁶⁸ The Preamble of the Agreement Establishing The World Trade Organization.

¹⁶⁹ United States - Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R (WTO Appellate Body Report November 6, 1998).

countries.¹⁷⁰ Although the Appellate Body held the U.S measure was not justified under Article XX of the GATT in terms of its unjustifiable discrimination among WTO Members, its findings had significant consequences for PPMs. The Appellate Body considered an environmental measure that had no impact on the physical characteristic of the final product, and was unilaterally imposed could comply with GATT rules if the measure meets certain conditions.¹⁷¹

However, the *US-Shrimp (1998)* did not clarify the status of PPMs or the criteria of its justification under WTO law. The panel, in this case, found that the U.S measure violated Article I of the GATT, and proceeded to consider exceptions under Article XX. Afterwards, the Appellate Body examined the validity of the measure directly under Article XX without considering its PPM characteristics. Thus, it is uncertain whether the WTO accepts the nature of a PPM.

In *Canada-Autos (2000)*, when Canada provided exemption of import duties for automobiles based on the producers' characteristics, the panel took a different approach about the compatibility of a PPM measure. The panel examined a complaint under Article I of the GATT and did not focus on the link between the product and the measure at issue, but it considered whether the PPM measure discriminates by origin. The panel found as follows:

[W]hether conditions attached to an advantage granted in connection with the importation of a product offend Article I:1 depends upon whether or not such conditions discriminate with respect to the origin of products.¹⁷²

¹⁷⁰ *Ibid.* para.185.

¹⁷¹ Sifonios, *Environmental Process and Production Methods (PPMs) in WTO Law*, 4.

¹⁷² Canada - Certain Measures Affecting the Automotive Industry, WT/DS139/R; WT/DS142/R, para.10.29 (WTO Panel Report Feb 11, 2000).

In the context of climate change, effective measures addressing global warming should focus on the production processes rather than a product's physical characteristics because GHG emissions is the main cause of the situation in question. Therefore, the imposition of BCAs in the form of non-product-related PPMs is unavoidable. As examined in previous paragraphs, preceding rulings of WTO panels and Appellate Body on PPMs might have specific implications for BCAs. If the rulings of GATT panels in the *US-Tuna* cases were to continue, BCAs would be considered to be inconsistent with WTO law. On the other hand, in light of the Appellate Body findings in the *US-Shrimp (1998)*, BCAs might be justified under environmental exceptions under Article XX of the GATT.

Meanwhile, as illustrated by the panel report in *Canada-Autos (2000)*, WTO case law suggests a potential change from product-process doctrine to the requirement of an origin-neutral characteristic of non-product-related PPMs. Thus, as long as the PPM measures, such as BCAs, do not set conditions that discriminate in term of the origin of products, they will not violate WTO law. While BCAs are linked to the carbon footprint of products rather than the country from which they originate, such measures can be considered origin-neutral. Also, a scholar supposes that because BCAs base on the assessment of GHG emissions and evaluate the environmental impact of products rather than require a particular production method, they should be accepted by WTO panels and Appellate Body.¹⁷³ In this regard, BCAs are unlikely *per se* illegal under WTO law but need to be compliant with relevant conditions (including the likeness test and the chapeau of Article XX that will be discussed in 2.4.2 and 2.5.3 respectively).

¹⁷³ Charles Benoit, "Picking Tariff Winners: Non-Product Related PPMs and DSB Interpretations of Unconditionally within Article I:1 Note," *Geo. J. Int'l L.* 42 (2010–2011): 594.

2.4.2 The likeness

A key concerning the non-discrimination principles under WTO law (Article I and III of the GATT, and Article 2.1 of the TBT Agreement) is the “likeness test.”¹⁷⁴ The Most-Favoured-Nation treatment (MFN), on pillar of the non-discrimination principle, requires that any advantage conferred by a member to any product originating in or destined for any country shall be granted to the like products originating in or destined for the territories of all other Members. It secures non-discrimination among WTO Members. On the other hand, the National Treatment (NT) principle, another pillar, requires Members to treat imported products no less favorable than what they award to like domestic products, irrespective of price-based or non-priced-based measures. It ensures a non-discriminatory treatment between imported products and like domestic products. Its objective is to guarantee that WTO Members will not apply internal measures to provide special protections to domestic industries.

The compatibility of BCAs with WTO law depends upon the differentiation between two products based on their carbon-intensive characteristics. More specifically, if panels or the Appellate Body consider imported products were manufactured with carbon-intensive methods as similar to climate-friendly domestic products, any trade-restrictive measure that applies to imports will violate the MFN and/or NT principle. Since both Article I, Article III of the GATT and Article 2.1 of the TBT Agreement have their allocation on like products, interpretation of Article III can apply, *mutatis mutandis*, to Article I of GATT . This section examines the likeness test of NT under Article III of the GATT; and the TBT Agreement is discussed in 2.6.

¹⁷⁴ Marceau, “The Interface Between the Trade Rules and Climate Change Actions,” 8.

Criteria for the likeness test suggested by the GATT Working Party on Border Tax Adjustments in 1970 have been used by GATT and WTO adjudicative bodies.¹⁷⁵ Specifically, the criteria comprise four categories of “characteristics” that the products involved might share: (i) the physical properties of the products; (ii) the extent to which the products are capable of serving the same or similar end-uses; (iii) the extent to which consumers perceive and treat the products as alternative means of performing particular functions in order to satisfy a particular want or demand; and (iv) the international classification of the products for tariff purposes.¹⁷⁶

As is well-known, the Appellate Body in *Japan-Alcoholic Beverages II* compared the likeness to stretches and squeezes of an accordion.¹⁷⁷ However, the scope of “like products” may vary in particular provisions and facts and, therefore, must be determined on a *case-by-case* basis.¹⁷⁸ Furthermore, in the context of the national treatment of Article III of the GATT, different rules apply to price-based measures (Article III:2) and non-price-based measures (Article III:4). Each of these rules are analyzed in the paragraphs that follow.

2.4.2.1 Price-based measures

If a price-based Border Carbon Adjustment such as a carbon tax could qualify as a border adjustment within the meaning of Article II:2(a) of GATT as discussed above, it needs to be consistent with Article III:2 of GATT. This provision contains two non-discrimination obligations: one relating to “like products” (the first sentence) and

¹⁷⁵ GATT Working Parties, para.18.

¹⁷⁶ European Communities - Measures Affecting Asbestos and Asbestos-Containing Products, WT/DS135/AB/R, 101 (WTO Appellate Body Report March 12, 2001).

¹⁷⁷ Japan - Taxes on Alcoholic Beverages, WT/DS8/AB/R; WT/DS10/AB/R; WT/DS11/AB/R, 21 (WTO Appellate Body Report October 4, 1996).

¹⁷⁸ Reinhard Quick and Christian Lau, “Environmentally Motivated Tax Distinctions and WTO Law: The European Commission’s Green Paper on Integrated Product Policy in Light of the ‘Like Product-’ and ‘PPM-’ Debates,” *Journal of International Economic Law* 6, no. 2 (2003): 429.

one concerning “directly competitive and substitutable products” (the second sentence).¹⁷⁹

The Appellate Body in *Japan-Alcoholic Beverages II* found that the meaning of the term “like product” in the first sentence is narrow while the second sentence only requires a competitive relationship between products.¹⁸⁰ In other words, the competitive relationship under the first sentence is tighter than the relationship of “directly competitive or substitutable product” under the second sentence. When considering the likeness test under first sentence, WTO panels and the Appellate Body will apply the traditional criteria and focus on the substitutability in the market of products.¹⁸¹ This assessment excludes a requirement for the existence of trade impact or a protective intent of the measure.¹⁸²

Some scholars argue that, if the traditional test of likeness is applied to BCAs, imported carbon-intensive products and domestic low carbon products would be “like” since they share the same characteristics, end-uses, and tariff classification and the

¹⁷⁹ The first sentence of Article III:2 provides:

The products of the territory of any [Member] imported into the territory of any other [Member] 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.

The second sentence of Article III:2 (supplemented by the note *Ad Article III*) provides:

No [Member] shall otherwise apply internal taxes or other internal charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1.

A tax conforming to the requirements of the first sentence of paragraph 2 would be considered to be inconsistent with the provisions of the second sentence only in cases where competition was involved between, on the one hand, the taxed product and, on other hand, a directly competitive or substitutable product which was not similarly taxed.

¹⁸⁰ *Japan - Alcoholic Beverages II* at 17.

¹⁸¹ Philippines - Taxes on Distilled Spirits, WT/DS396/AB/R; WR/DS403/AB/R, para.119, 131 (WTO Appellate Body Report 2011).

¹⁸² *Japan - Alcoholic Beverages II* at 18.

carbon footprint would not be taken into consideration.¹⁸³ The difference in tax rates between those products would then breach the NT principle.

However, in *EC-Asbestos*,¹⁸⁴ EC argued that, in comparing the physical properties of asbestos and those of other industrial fibers, the risks posed to human health by the products should be taken into consideration. In concluding that Canada did not demonstrate the likeness of the products with sufficient evidence, the Appellate Body explicitly addressed the health concerns associated with asbestos-containing products.¹⁸⁵ Such consideration was not given as a separate criterion for the assessment of likeness, but as an indicator of physical properties and consumers' tastes and habits. Some scholars consider this findings of the Appellate Body as a broad-minded outcome for the traditional test of likeness.¹⁸⁶ This finding might be a positive indicator that the WTO would accommodate a national environment policy that is based on the characteristics of imported products. Consequently, if a product is harmful for the environment, its import and sale might be restricted without breaching WTO law.

Contrary to those presumptions, some commentators argue that this finding of the Appellate Body may not be very helpful to the question of BCAs. The health risk of asbestos was long acknowledged worldwide, but the risk of GHG emissions is controversial. They state that it is not certain whether the Appellate Body will repeat

¹⁸³ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 110; Quick and Lau, "Environmentally Motivated Tax Distinctions and WTO Law," 429.

¹⁸⁴ European Communities - Measures Affecting Asbestos and Asbestos-Containing Products, WT/DS135/AB/R (WTO Appellate Body Report March 12, 2001).

¹⁸⁵ *Ibid.* para.102.

¹⁸⁶ Christine Kaufmann and Rolf H. Weber, "Carbon-Related Border Tax Adjustment: Mitigating Climate Change or Restricting International Trade?," *World Trade Review* 10, no. 4 (October 2011): 507.

such an open approach with regard to BCAs.¹⁸⁷ Moreover, countries often focus on GHG-intensive products from heavy industries such as energy, steel or aluminum, which are so-called raw materials or intermediate products.¹⁸⁸ Such products do not significantly affect consumer preferences because usually customers do not care about them.¹⁸⁹

Consequently, a product's carbon footprint is not a feasible basis on which to draw the distinction between imported and domestic products under the likeness test of Article III:2, first sentence. Even if the imported product in question is not "like" within the meaning of the first sentence, the test under the second sentence would be applied in so far as the product is "directly competitive or substitutable." Unlike the first sentence, the second sentence only requires a competitive relationship between imported products and domestic products. As will be elaborated in next sections, an analysis concerning the second sentence may nevertheless be helpful to the determination of "like product" within the meaning of Article III:4 in the case of non-price-base measures.

2.4.2.2 Non-priced-base measures

If a WTO Member applies a regulation, not a fiscal measure to imported products and domestic products, Article III:4 would apply. A test under Article III:4 consists two steps. The first is to determine whether imported and like domestic products are treated differently and the second concerns whether the different treatment leads to the less favorable treatment of the imported products.¹⁹⁰ According to the

¹⁸⁷ Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim, *Global Warming and the World Trading System* (Columbia University Press, 2009), 36–37.

¹⁸⁸ These products are main coverage of EU ETS and its members which was discussed in Section 2.1.1.

¹⁸⁹ Goh, "World Trade Organization, Kyoto and Energy Tax Adjustments at the Border," 408; Cosbey, "Achieving Consensus: Multilateral Trade Measures in Post-2012 Scenarios," 23.

¹⁹⁰ *EC - Asbestos*, para.96, 98.

Appellate Body in *EC-Asbestos*, a likeness test for the purpose of Article III:4 is broader than the “like product” test under Article III:2, first sentence but not broader than the “directly competitive and substitutable products” test in the second sentence. Therefore, the competitive relationship between products is a crucial criteria under Article III:4.¹⁹¹

In the context of climate change, some authors support this approach and argue that the term “likeness” must be determined based on the competitive relationship between imported and domestic products and likeness of the two products must be presumed if they compete in the market.¹⁹² Consequently, as long as products produced with environmentally-sound PPMs and those not so produced compete, they would be considered like products and might be in breach of Article III of GATT. In contrast to this idea, others argue that physically identical products can be perceived as “unlike” due to different production methods.¹⁹³ Still others suggest that a likeness test based on the competitive relationship should focus on consumer preferences.¹⁹⁴ Products should be “like” if consumers distinguish products based on the applied PPMs, irrespective of whether these are product or non-product-related measures.

However, the original purpose of countries desiring to implement BCAs is to address carbon leakage and level the playing field between domestic and imported products. Thus, the conclusion of the likeness between carbon-intensive and

¹⁹¹ *Ibid.* para.103.

¹⁹² Marceau, “The Interface Between the Trade Rules and Climate Change Actions,” 9–10; Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes.”

¹⁹³ Jagdish Bhagwati and Petros C. Mavroidis, “Is Action against US Exports for Failure to Sign Kyoto Protocol WTO-Legal?,” *World Trade Review* 6, no. 2 (2007): 304; and Robert Howse and Antonia Eliason, “Domestic and International Strategies to Address Climate Change: An Overview of the WTO Legal Issues,” *International Trade Regulation and the Mitigation of Climate Change*, 2009, 19–21.

¹⁹⁴ Christine Kaufmann and Rolf H. Weber, “Carbon-Related Border Tax Adjustment: Mitigating Climate Change or Restricting International Trade?,” *World Trade Review* 10, no. 4 (October 2011): 510.

climate-friendly products is significant because balancing the competition condition is only possible when these products are competing against each other in a market.

2.4.3 The national treatment test under Article III of GATT

The discrimination, which is prohibited under Article III, is the treatment against imported products vis-à-vis domestic ones. The critical requirement of Article III is that WTO Members do not allow apply internal taxes and regulations “to afford protection to domestic production” (paragraph 1 of the Article). This first paragraph is part of the content concerning paragraphs 2 and 4 of the Article but in different ways.¹⁹⁵ Under Article III:2, discrimination refers either “taxes in excess of” (under the first sentence) or “not similarly taxed” (under the second sentence), which under Article III:4, discrimination implies “treatment less favorable.”¹⁹⁶

2.4.3.1 Article III:2, first sentence

If a carbon tax could qualify as “an internal tax or charge” within the meaning of GATT Article II:2(a) that were eligible for border adjustment, pursuant to Article II:2(a), the measure would have to apply on imports “consistently with the provisions of paragraph 2 of Article III.” Article III:2, first sentence, requires that the national treatment principle be perceived with respect to taxes and other internal charges on imports, as follows: “The products ... imported ... shall not be subject, directly or indirectly, to internal taxes... in excess of those applied, directly or indirectly, to like domestic products....”¹⁹⁷

If imported products are taxed in excess of like domestic products, under the

¹⁹⁵ Japan - Taxes on Alcoholic Beverages, WT/DS8/AB/R; WT/DS10/AB/R; WT/DS11/AB/R, 17 (WTO Appellate Body Report October 4, 1996).

¹⁹⁶ Quick and Lau, “Environmentally Motivated Tax Distinctions and WTO Law,” 430.

¹⁹⁷ Article III:2, first sentence of the GATT.

first sentence of Article III:2, a complainant does not need to show a trade impact or a protective purpose of a measure for a violation of the national treatment principle to be assumed.¹⁹⁸ Also, the requirement “not... in excess” must be observed and complied. It does not allow for a *de minimis* difference in the tax rate.¹⁹⁹

The logical analysis of a measure for its compliance with the national treatment principle under Article III:2, first sentence, is provided in the rulings of the Appellate Body in *Japan-Alcoholic Beverages*, as follows:

Read in their context and in the light of the overall object and purpose of the WTO Agreement, the words of the first sentence require an examination of the conformity of an internal tax measure with Article III by determining first, whether the taxed imported and domestic products are “like” and, second, whether the taxes applied to the imported products are “in excess of” those applied to the like domestic products.²⁰⁰

Therefore, if carbon-intensive and low-carbon products are found to be liked, any difference in tax rates between those imports would entail a violation of the national treatment principle. As discussed in 2.4.2, under the first sentence of Article III:2, the carbon footprint would be unlikely to contribute as a valid criterion for making a distinction among products. Moreover, a violation of the national treatment principle could result from the characteristics of an Emission Trading Scheme as an emissions reduction policy instrument. Installations participating in an ETS usually convey costs concerning allowances, but firms may reduce production scale in order to

¹⁹⁸ Reinhard Quick, “Border Tax Adjustment to Combat Carbon Leakage: A Myth,” *Global Trade & Cust. J.* 4 (2009): 356.

¹⁹⁹ *Japan - Alcoholic Beverages II* at 18.

²⁰⁰ *Ibid.* at 19.

decrease emissions and, then, sell surplus allowances on the secondary market, thereby increasing income. Also, firms may transfer to low-carbon production technologies that allow them to reduce the GHG intensity and gain additional allowances available for sale. Thus, imported products subject to an emissions allowance requirement will likely pay higher charges and be less flexible than like domestic products and violate Article III:2, first sentence of GATT.²⁰¹

2.4.3.2 Article III:2, second sentence

Following the examination of likeness established on the market-based approach in 2.4.2.2, carbon-intensive imports and low-carbon domestic products might be directly competitive or substitutable to each other. Accordingly, a carbon tax would be examined under the second sentence of Article III:2, as follows: “Moreover, no contracting party shall otherwise apply internal taxes or other charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1.”²⁰²

The meaning of Article III:2, second sentence, is further clarified by Ad Article III:2, as follows:

A tax conforming to the requirements of the first sentence of paragraph 2 would be considered to be inconsistent with the provisions of the second sentence only in case where competition was involved between, on the one hand, the taxed product and, on the other hand, a directly competitive or substitutable product which was not similarly taxed.²⁰³

The principles outlined in the paragraph 1 of Article III restricted the WTO

²⁰¹ Quick, “Border Tax Adjustment in the Context of Emission Trading,” 165–66.

²⁰² Article III:2, second sentence of the GATT.

²⁰³ Ad Article III:2 of the GATT.

Members to apply fiscal and non-fiscal internal measures “so as to afford protection to domestic production.” Thus, Article III:2, second sentence, prohibits the difference in taxation between directly competitive or substitutable products, if it results in the protectionism of domestic production.²⁰⁴ Hence, when imports and domestic products directly competitive or substitutable, not every case of differentiated taxation is prohibited, but only measures that afford protection to domestic production. Also, the term “not similarly taxed” in the second sentence of Article III:2 is very different from “in excess of” in the first sentence. Similarly, the term “not similarly taxed” is a more lenient requirement concerning an amount of difference in taxation, which is larger than *de minimis*.²⁰⁵

Under Article III:2, second sentence, the Appellate Body stated that when all conditions are met, including the tests of “directly competitive or substitutable products” and “not similarly taxed,” the protective application of a measure must still be proven, as follows:

... [A] finding that “directly competitive or substantive products” are “not similarly taxed” is necessary to find a violation of Article III:2, second sentence. Yet this is not enough. The dissimilar taxation must be more than *de minimis*. It may be so much more that it will be clear from that very differential that the dissimilar taxation was applied “so as to afford protection.”²⁰⁶

The examination of a measure under Article III:2, second sentence, focuses on the impact of a measure on the competitive relationship and follows the asymmetric

²⁰⁴ *Japan - Alcoholic Beverages II* at 23.

²⁰⁵ *Ibid.* at 26–27.

²⁰⁶ *Ibid.* at 18.

impact approach to comparing the treatment of products. Moreover, “the aim and effect” approach could be considered by WTO panels and Appellate Body to examine a measure under Article III:2, second sentence.²⁰⁷ Thus, if carbon-intensive and low-carbon products were found to be directly competitive or substitutable, a BCA could be examined more flexible under the national treatment test under Article III:2, the second sentence, comparing to its analysis under the “not in excess” test under Article III:2, first sentence. The national treatment test under Article III:2, second sentence, share commonalities with the “no less favorable treatment” test under Article III:4, which will be highlighted in the next section.

2.4.3.3 Article III:4

The application of Article III:4 includes non-fiscal measures, including “laws, regulation and requirements affecting... internal sale, offering for sale, purchase, transportation, distribution or use.”²⁰⁸ The “affecting” clause under this provision regulates the scope of application, which is limited only to those internal regulations affecting the competition conditions in the market.²⁰⁹ The Appellate Body also provided the list of indications referred to in Article III:4, which is exhaustive, as follows:

It is ... not any “laws, regulations and requirements” which are covered by Article III:4, but only those which “affect” the specific transactions, activities and uses mentioned in that provision.

Thus, the word “*affecting*” assists in defining the types of measure

²⁰⁷ Chile - Taxes on Alcoholic Beverages, WT/DS87/AB/R; WT/DS110/AB/R, 71 (WTO Appellate Body Report January 12, 2000).

²⁰⁸ Article III:4 of the GATT.

²⁰⁹ United States - Tax Treatment for “Foreign Sales Corporations-Recourse to Article 21.5 of the DSU by the European Communities,” WT/DS108/AB/RW, para.208 (WTO Appellate Body Report January 29, 2002).

that must conform to the obligation not to accord “less favourable treatment” to like imported products, which is set out in Article III:4.²¹⁰

The Appellate Body in *US-FSC (Article 21.5-EC)* interpreted the term “affect” in Article III:4 in a broad meaning concerning the scope of its application.²¹¹ The adoption of the national treatment principle to non-fiscal measures under Article III:4 prescribes that: “The products... imported... shall be accorded treatment no less favorable than that accorded to like products of national origin in respect of all laws, regulations and requirements.”²¹² However, different from finding a violation of the national treatment principle under the second sentence of Article III:2, Article III:4 does not require “the measure affords protection to domestic production.”²¹³

If a regulation accords treatment of imported products less favorable than to like domestic products, the determination of whether the domestic production accords to protectionism need to be examined. The examination of a measure at issue under Article III:4 comprises two steps. First, whether imported and like domestic products are treated differently and second, whether the differential treatment leads to the “less favourable treatment” to imported products.²¹⁴

The likeness test under this provision is examined in 2.4.2. Concerning the term “less favourable treatment,” the Appellate Body in *Korea-Various Measures on Beef* ruled that different treatment accorded to imported products cannot make a

²¹⁰ *Ibid.*

²¹¹ *Ibid.* para.209–210.

²¹² Article III:4 of the GATT.

²¹³ European Communities - Measures Affecting Asbestos and Asbestos-Containing Products, WT/DS135/AB/R, para.100 (WTO Appellate Body Report March 12, 2001); and European Communities - Regime for the Importation, Sale and Distribution of Bananas, WT/DS27/AB/R, para.216 (WTO Appellate Body Report September 25, 1997).

²¹⁴ *EC - Asbestos*, para.96,98.

presumption of less favorable treatment and, thus, can still be compliant with the requirements under Article III:4.²¹⁵ The rulings of the Appellate Body in *EC-Asbestos* also support the interpretation of “no less favourable” treatment that does not imply “identical” treatment, as follows:

...a Member may draw distinctions between products which have been found to be “like,” without, for this reason alone, according to the group of “like” imported products “less favorable treatment” than that accorded to the group of “like” domestic products.²¹⁶

Some scholars believe that the above mentioned statement of the Appellate Body might allow treating like products differently but equivalently.²¹⁷ Moreover, the Appellate Body in *Dominican Republic-Import and Sale of Cigarettes* ruled that the existence of a detrimental effect on imports from an internal measure would not assume the less favorable treatment for imported products within the meaning of Article III:4 when such effect is irrelevant to the origin of the imported product.²¹⁸ Therefore, if imported products are less competitive in the market compared to domestic products because of their higher carbon contents regardless of their origin, a requirement to surrender emissions allowances based on the carbon footprint would unlikely treat imported products less favorably vis-à-vis domestic ones.²¹⁹

Similarly, in *EC-Approval and Marketing of Biotech Products*, the panel found

²¹⁵ Korea - Measures Affecting Imports of Fresh, Chilled and Frozen Beef, WT/DS161/AB/R, WT/DS169/AB/R, para.137 (WTO Appellate Body Report January 10, 2001).

²¹⁶ *EC - Asbestos*, para.100.

²¹⁷ Quick and Lau, “Environmentally Motivated Tax Distinctions and WTO Law,” 434; and Richard G. Tarasofsky, “Heating Up International Trade Law: Challenges and Opportunities Posed by Efforts to Combat Climate Change,” *Carbon & Climate Law Review* 2, no. 1 (2008): 9.

²¹⁸ Dominican Republic - Measures Affecting the Importation and Internal Sale of Cigarettes, WT/DS302/AB/R, para.96 (WTO Appellate Body Report May 19, 2005).

²¹⁹ Pauwelyn, “US Federal Climate Policy and Competitiveness Concerns,” 30.

the different treatment of biotech and non-biotech products not from the result of an origin-based treatment but rather the “result of perceived difference between biotech products and non-biotech products in terms of their safety.”²²⁰ This finding might suggest that the differentiation between like products based on consumer perceptions concerning the carbon footprints would not amount to less favorable treatment and a violation of Article III:4, nor the violation of TBT Article 2.1.

2.5. Justifications under Article XX of the GATT 1994

A measure which violates a GATT provision may be permitted if it satisfies the conditions in Article XX of the GATT. The Appellate Body in *US-Gasoline* applied the two-tier test to determine whether such a measure can be justified under Article XX.²²¹ First, the measure must fall within one of the exceptions under sub-paragraphs (a) to (j). Among the exceptions, sub-paragraphs (b) and (g) are particularly important in the case of climate measures. Sub-paragraph (b) allows exceptions for measures that are “necessary” to protect human, animal, plant life, or health and sub-paragraph (g) allows exceptions for measures relating to the conservation of exhaustible natural resources. Second, it must also satisfy the chapeau of the article.

2.5.1 Article XX(b) – Measures necessary for the protection of health

In order to determine whether the measure at issue is “necessary” to achieve a goal in sub-paragraph (b), the Appellate Body in *Korea-Beef* applied a necessity test involving a “weighing and balancing” of the values at issue.²²² But in *Brazil-Retreated*

²²⁰ European Communities - Measures Affecting the Approval and Marketing of Biotech Products, WT/DS291/R; WT/DS292/R; WT/DS293/R, para.7.2514 (WTO Panel Report November 21, 2006).

²²¹ United States - Standards for Reformulated and Conventional Gasoline, WT/DS2/AB/R, para.22 (WTO Appellate Body Report May 20, 1996).

²²² Korea - Measures Affecting Imports of Fresh, Chilled and Frozen Beef, WT/DS161/AB/R, WT/DS169/AB/R, para.161–164 (WTO Appellate Body Report January 10, 2001).

Tyres,²²³ the Appellate Body examined a material contribution of the measure to the achievement of its objectives and applied the three-steps test: (i) the importance of the objective at stake, (ii) the material contribution of the measure at issue to the attainment of such objective, (iii) the trade restrictiveness of the measure including the consideration for alternative measures that are less-trade-restrictive and ensure the desired achievement of the original objective.²²⁴

In regard to the second step, the Appellate Body in *Brazil-Retreated Tyres* emphasized that the contribution to the achievement of objective should be significant and has to reveal a genuine relationship of ends and means between such pursued objective and the measure at issue.²²⁵ It stated:

This does not mean that an import ban, or another trade-restrictive measure, the contribution of which is not immediately observable, cannot be justified under Article XX(b). We recognize that certain complex ... environmental problems may be tackled only with a comprehensive policy comprising a multiplicity of interacting measures ... the results obtained from certain action – for instance, measures adopted in order to attenuate global warming and climate change ... can only be evaluated with the benefit of time.²²⁶

This passage would mean that when the Appellate Body assesses the contribution of a BCA to the achievement of a climate-policy objective, it would have a less strict consideration than in another context. However, since the objective of

²²³ *Brazil - Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, para.151 (WTO Appellate Body Report December 3, 2007).

²²⁴ *Korea - Beef*, para.162.

²²⁵ *Brazil - Retreaded Tyres*, para.210.

²²⁶ *Ibid.*, para.151.

BCAs such as carbon taxes and climate-related regulations is the reduction of emissions by preventing carbon leakage and competitive disadvantage, it is an open question whether the WTO accept the nexus between a BCA and its pursued objective.

The third step would then be important and a WTO Member which challenges the legality of a BCA would have to prove the existence of other less-trade-restrictive means.²²⁷ In order to pass this test, the main purpose of the implementation of BCAs must be their impact in reducing global emissions rather than role in reducing competitiveness concerns for domestic industries against imported products. However, a study addressed the challenge that WTO panels and Appellate Body have narrowly interpreted the scope of these justifications and have been cautious to only accept justifications based on human, animal or plant health to date.²²⁸ Several commentators argue that BCAs may fail in this third step.²²⁹

2.5.2 Article XX(g) – Measures relating to the conservation of exhaustible natural resources

Unlike sub-paragraph (b), which allows for exceptions “necessary” to protect human health, sub-paragraph (g) applies to measures “relating to the conservation of exhaustible natural resources.” WTO panels and the Appellate Body have clarified the term “exhaustible resources,” so far to include tuna,²³⁰ sea turtles,²³¹ dolphins,²³²

²²⁷ The Appellate Body at first required the country invoking the exception would have to prove the absence of alternatives, but then conclude that such country only needs to show the necessity of the measure. The burden of proof is then on the side of the complaining country. See United States - Measures Affecting the Cross Border Supply of Gambling and Betting Services, WT/DS285/AB/R, para.309 (WTO Appellate Body Report April 20, 2005).

²²⁸ Weber, “Border Tax Adjustment – Legal Perspective,” 415.

²²⁹ Monjon and Quirion, “A Border Adjustment for the EU ETS,” 1212–25.

²³⁰ United States - Prohibition of Imports of Tuna and Tuna products from Canada, L/5198-29S/91 (GATT Panel Report February 22, 1982).

²³¹ United States - Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R (WTO Appellate Body Report November 6, 1998).

salmon and herring,²³³ and clean air.²³⁴ As a commentator suggested, the levels of GHG emission in the atmosphere could be viewed as an exhaustible natural resource, like clean air in *US-Gasoline*.²³⁵ Particularly, BCAs focusing on the reduction of GHG emissions may be so viewed, because climate can be considered as the quality of atmospheric conditions over long period of time and the change of it causes the depletion of other natural exhaustible resources, such as forests, fisheries or biodiversity.

Another important term in sub-paragraph (g) is “relating to.” The Appellate Body in *US-Shrimp (1998)* found that this term requires a close and real relationship of ends and means.²³⁶ Such relationship would exist between the structure of the measure and the carbon emissions reduction goals. One author suggests that in order to pass this test, a BCA has to aim at offsetting carbon leakage and reducing emissions rather than restoring the competitiveness of domestic producers.²³⁷ Another author argues that this term also requires unambiguously that even-handed domestic policies be undertaken to obtain the public policy objective but does not require the identical treatment of domestic and imported products.²³⁸ It is then uncertain whether a BCA with different treatments on domestic and imported products based on their

²³² United States - Restrictions on Imports of Tuna, DS21/R unadopted (GATT Panel Report September 3, 1991).

²³³ Canada - Measures Affecting Exports of Unprocessed Salmon and Herring, L/6268-35S/98 (GATT Panel Report March 22, 1988).

²³⁴ United States - Standards for Reformulated and Conventional Gasoline, No. WT/DS2/AB/R (World Trade Organization Appellate Body Report May 20, 1996).

²³⁵ Bradly J. Condon, “Climate Change and Unresolved Issues in WTO Law,” *J Int Economic Law* 12, no. 4 (December 1, 2009): 895–926.

²³⁶ United States - Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, para.128–131 (WTO Appellate Body Report November 6, 1998).

²³⁷ James Bacchus, “Questions in Search of Answers: Trade, Climate Change, and the Rule of Law,” in *Keynote Address to the Conference on “Climate Change, Trade and Competitiveness: Issues for the WTO”*, Geneva, vol. 16, 2010, 13.

²³⁸ Condon, “Climate Change and Unresolved Issues in WTO Law,” December 1, 2009, 912–13.

environmental impacts could qualify under this requirement.

2.5.3 The chapeau of Article XX – The good-faith test

Sub-paragraph (b) and (g) must be interpreted alongside the chapeau of Article XX, which requires that a measure must not be applied in a manner that constitutes “a means of arbitrary or unjustifiable discrimination” or “a disguised restriction on international trade.” In the climate change context, these good-faith criteria may require that the implementing country demonstrates its serious efforts to seek international agreement on climate change prior to enacting a BCA.²³⁹ From this point of view, an author argues that although international agreements like the Kyoto Protocol and the Paris Agreement include emission-reduction targets of contracting parties, they do not have any enforcement mechanism for compliance.²⁴⁰ Thus, it is unclear whether a WTO Member would be considered “arbitrary or unjustified discrimination,” or “otherwise disguised restrictions on trade” if it imposes BCAs against countries that fail to comply with their commitments within an international agreement on climate change.

Importantly, the Appellate Body also stated that discrimination between countries where the same conditions prevail is arbitrary and unjustifiable when the intent of this discrimination does not show any reasonable link to the pursued objective or could even be against the objective.²⁴¹ In the context of climate change, a WTO Member when applying BCAs might not only impose on importation but also

²³⁹ The Appellate Body in *US-Shrimp* ruled the issue of good faith in relation to international efforts from the U.S to address the environmental objective - turtle conservation in the context of the Chapeau leading to “unjustifiable discrimination.” See *US - Shrimp (Appellate Body Report)*, para.168.

²⁴⁰ Jochem Wiers, “French Ideas on Climate and Trade Policies,” *Carbon and Climate Law Review* 2(1), 2008, 18–32.

²⁴¹ *Brazil - Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, para.225 (WTO Appellate Body Report December 3, 2007).

exportation by rebates of carbon taxes or exemptions of emissions allowance requirement (as mentioned in 1.4.3.2).²⁴² Therefore, the application of such measures could impair the environmental justification under Article XX because their goal might be to balance the competitiveness in the international market rather than public interests.²⁴³ A recent study supports this view and argues that a national climate change policy with rebates for emission-intensive export industries could not pass the good-faith test.²⁴⁴

In regard to the issue of “arbitrary or unjustifiable discrimination between countries where same conditions prevail,” the Appellate Body have shown flexibility in its reasoning.²⁴⁵ In *US-Shrimp (Article 21.5)*, the Appellate Body found that the U.S import ban passed this test because it required exporting countries to adopt only a comparable measure in effectiveness, but not the same program as the U.S.²⁴⁶ Therefore, a country may request an exporting country to adopt a comparable measure in effectiveness, but not an identical BCA, as a condition for market access.²⁴⁷ Although the purpose of this approach is to avoid any “disguised restriction” on trade, it could lead to a complicated scenario in the context of climate change.²⁴⁸ When a country like the U.S, for instance, exempts EU imports from a carbon tax for the

²⁴² Hufbauer, Charnovitz, and Kim, *Global Warming and the World Trading System*, 2009, 69.

²⁴³ *Ibid.*

²⁴⁴ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 169.

²⁴⁵ United States - Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, para.161 (WTO Appellate Body Report November 6, 1998).

²⁴⁶ United States - Import Prohibition of Certain Shrimp And Shrimp Products - Recourse to Article 21.5 of the DSU by Malaysia, WT/DS58/AB/RW, para.144 (WTO Appellate Body report October 22, 2001).

²⁴⁷ In *US-Shrimp (Article 21.5)*, an import ban from the U.S on shrimp products originating in countries without the same essential program has been replaced by a requirement of a program comparable in effectiveness to the U.S one. The new measure has passed the Appellate Body test that “allow for sufficient flexibility in the application of the measure so as to avoid arbitrary or unjustifiable discrimination.” See *ibid.*

²⁴⁸ Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes,” 17.

existence of the EU's ETS, but imposes a lower carbon tax on Chinese imports for its comparable export tax on emission-intensive products, it is difficult to tell whether "the same conditions prevail" in these countries.

2.6. Technical barriers to trade

Border Carbon Adjustments in forms of carbon standards or labeling requirements will need to satisfy the tests of likeness, necessity, and international standard under Article 2.1, 2.2, and 2.4 of the TBT Agreement. The PPM characteristic of such measures might also rise at an earlier stage on whether the TBT Agreement covers such measures.

2.6.1 Border Carbon Adjustments and coverage of the Agreement on Technical Barriers to Trade

The TBT Agreement provides a framework for the application of technical regulations and standards that contain requirements related to product characteristics. In the context of climate change, the question is whether the TBT Agreement covers a BCA providing a compulsory ceiling level of GHG emission for products to enter the market. In order to a measure to constitute a "technical regulation," Annex 1.1 of the TBT Agreement provides that such measure must lay down product characteristics or their related processes and production methods, be mandatory, and apply to an identifiable product or group of products.²⁴⁹

The definition of "technical regulation" in the first sentence of Annex 1.1 of the TBT Agreement indicates "product characteristics or their related process and

²⁴⁹ Annex 1.1 of TBT Agreement indicates: "Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method."

production methods,” but at the same time, measures that are concerned with “terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or production method” can be considered as technical regulations.²⁵⁰ Although it is generally recognized that the TBT Agreement covers product-related PPMs, uncertainty may exist about the term “related” and whether it covers non-product-related PPMs.²⁵¹

The WTO adjudicative bodies mentioned PPMs for the first time in *EC-Seal Products*.²⁵² Under the challenged EC measure, only specific seal products can enter into the market since they must meet different criteria ranging from the identity of the hunter, the type, and purpose of the hunt to the way the products were sold.²⁵³ The panel found the TBT Agreement covers a non-product-related PPM measure based on producers’ characteristic and the hunting methods because such a measure can contribute to the product’s characteristics. The Appellate Body reversed this finding and held that the product’s characteristics, in this case, did not comprise these differences and the panel should have examined the nexus between the PPM measure with the characteristics of a product.²⁵⁴

In this case, the Appellate Body found that only product-related PPMs fall within the scope of the TBT Agreement, but it did not provide clear instruction on the peculiarity of such measures. Commentators argue that this view from the Appellate Body only classified PPMs with the traceability in the final product as

²⁵⁰ Ibid.

²⁵¹ Sifonios, *Environmental Process and Production Methods (PPMs) in WTO Law*, 225.

²⁵² European Communities - Measures Prohibiting the Importation and Marketing of Seal Products, WT/DS400/R; WT/DS401/R (WTO Panel Report November 25, 2013); European Communities - Measures Prohibiting the Importation and Marketing of Seal Products, WT/DS400/AB/R; WT/DS401/AB/R (WTO Appellate Body Report May 22, 2014).

²⁵³ *EC - Seal Products (Panel Report)*, para.7.109.

²⁵⁴ *EC - Seal Products (Appellate Body Report)*, para.5.12.

“product-related.”²⁵⁵ Therefore, majority of PPMs addressing climate change will fall outside the TBT Agreement because GHG emission-reduction measures focus on industries or producers rather than particular products.²⁵⁶ However, even non-product-related PPMs fall outside the scope of the TBT Agreement, they are not *prima facie* inconsistent with the WTO law. Such measures will be subjected to the GATT, in particular, Article III and XX as examined in 2.4.

Recent WTO jurisprudence suggests that, the requirements to indicate carbon-footprint on a product’s label known as “labeling requirements” unquestionably fall within the scope of the TBT Agreement. In *US-Tuna II*²⁵⁷ and *US-COOL*,²⁵⁸ in which labeling requirements relating to non-product-related PPMs were at issue, the U.S did not dispute the application of the TBT Agreement to these measures and the panel in *US-Tuna II* considered the TBT Agreement covers the dolphin-safe labeling requirements since they were applied to an identifiable product, such as tuna.²⁵⁹ The TBT Agreement may then be taken to cover not only labeling requirements related to product characteristics but also non-product-related PPM labeling requirements.²⁶⁰

2.6.2 Non-discrimination principles

If a Border Carbon Adjustment falls within the scope of the TBT Agreement, it

²⁵⁵ Marceau, “The Interface Between the Trade Rules and Climate Change Actions,” 26; Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 141.

²⁵⁶ Matsushita et al., *The World Trade Organization*, 732; and Andreas R. Ziegler and David Sifonios, “The Assessment of Environmental Risks and the Regulation of Process and Production Methods (PPMs) in International Trade Law,” *Risk and the Regulation of Uncertainty in International Law*, 2017, 219–236.

²⁵⁷ United States - Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Product, WT/DS381/AB/R (WTO Appellate Body Report May 16, 2012).

²⁵⁸ United States - Certain Country of Origin Labelling (COOL) Requirements, WT/DS384/AB/R, para.314–315 (WTO Appellate Body Report July 23, 2012).

²⁵⁹ United States - Restrictions on Imports of Tuna, DS29/R unadopted, para.7.62, 7.78 (GATT Panel Report June 16, 1994).

²⁶⁰ Marceau, “The Interface Between the Trade Rules and Climate Change Actions,” 29–30; Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 142.

will need to pass the MFN and NT principles regulated in Article 2.1. The Appellate Body in *US-Tuna II* and *US-Clove Cigarettes* examined three elements in order to decide whether a regulation violates these provisions:²⁶¹ (i) The measure at issue is a “technical regulation” under the TBT Agreement, (ii) the imported products and domestic product are like, (iii) the imported products receive less favorable treatment than the domestic product. This test under Article 2.1 of the TBT Agreement is similar to that of Article III:4 of the GATT in that the terms “like products” and “less favorable treatment” appear in both provisions.

In *US-Clove Cigarettes*, the panel found that the examination of likeness between the products at issue should be based on a legitimate public policy objective rather than the competitive relationship, but the Appellate Body reversed this finding and considered the likeness test under Article 2.1 of the TBT Agreement to be the same as the likeness test under Article III:4 of the GATT to the extent that such test under the TBT Agreement aims to balance the interests between trade liberalization and health protection.²⁶² As a consequence, the application of climate standards or carbon-footprint labels on imported products and domestic products with the same physical characteristics will fail the likeness test under Article 2.1 of the TBT Agreement when the climate-friendly characteristic of those products could effect on consumers’ preferences or competitive conditions in the market.

On the other hand, in this case, the Appellate Body stressed the absence in the TBT Agreement of a provision equivalent to Article XX of the GATT.²⁶³ The Appellate Body took up this issue again in *US-Tuna II (Mexico)*. It stated that:

²⁶¹ United States - Measures Affecting the Production and Sale of Clove Cigarettes, WT/DS406/AB/R, para.216 (WTO Appellate Body Report April 4, 2012).

²⁶² *Ibid.*, para.112, 120.

²⁶³ *Ibid.*, para.109.

In the context of Article 2.1 of the TBT Agreement, the complainant must prove its claim by showing that the treatment accorded to imported products is “less favorable” than that accorded to like domestic products or like products originating in any other country. If it has succeeded in doing so, for example, by adducing evidence and arguments sufficient to show that the measure is not even-handed, this would suggest that the measure is inconsistent with Article 2.1 [footnote omitted].²⁶⁴

By suggesting the implementation in an “even-handed” way, the Appellate Body may consider that, in addition to the non-discrimination rule, Article 2.1 of the TBT Agreement contains a requirement comparable to Article XX of the GATT. Then, even when labeling requirements for climate standards cause detrimental impacts on imported product, they may not infringe the NT principle if such impacts are exclusively from a legitimate regulatory distinction.²⁶⁵ However, since all related measures to date have failed to be justified under the exceptions to trade liberalization interests of the TBT Agreement, the WTO adjudicative bodies must provide further instructions in which a measure could qualify the even-handed test in future disputes.

2.6.3 The necessity test

Article 2.2 of the TBT Agreement provides that a “technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective, taking account of the risks non-fulfillment would create.” This “necessity test” largely mirrors the test under Article XX(b) of the GATT as discussed in 2.5.1.

The examination of the necessity of a measure firstly consists of the assessment

²⁶⁴ United States - Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Product, WT/DS381/AB/R, para.216 (WTO Appellate Body Report May 16, 2012).

²⁶⁵ *Ibid.*, para.284.

of its trade-restrictiveness and the extent to which the measure contributes to its objective and secondly, the measure would be compared to possible alternatives. The Appellate Body in the *EC-Seal Products* confirmed the relationship between Article 2.2 of the TBT Agreement and Article XX of the GATT and noted that the balance between the desire to prevent unnecessary obstacle to trade and the right of Members to regulate and pursue public interests is, primarily, the same under these agreements.²⁶⁶

2.6.4 International standards

The TBT Agreement, Article 2.4, encourages WTO Members to harmonize internal measures with international standards by providing that technical regulations based on international standards would be deemed consistent with the TBT Agreement.²⁶⁷ This regulation may be helpful for international cooperation and governance, but the term “international standards” is not defined in the TBT Agreement. The Appellate Body stated that such international standards should be adopted by an international organization or body and available to all WTO Members in a non-discrimination manner,²⁶⁸ and that such standards need not to be agreed by the parties to a dispute.²⁶⁹ It remains unclear whether climate-related regulations, especially those developed by a group of WTO Members which may not be appropriate for the development objectives of developing countries, could be considered as “international standards.”

²⁶⁶ European Communities - Measures Prohibiting the Importation and Marketing of Seal Products, WT/DS400/AB/R ; WT/DS401/AB/R, para.5.127 (WTO Appellate Body Report May 22, 2014).

²⁶⁷ Meredith A. Crowley and Robert Howse, “Tuna–Dolphin II: A Legal and Economic Analysis of the Appellate Body Report,” *World Trade Review* 13, no. 2 (April 2014): 332.

²⁶⁸ *US - Tuna II (Mexico)*, para.374–375.

²⁶⁹ European Communities - Trade Description of Sardines, WT/DS231/AB/R, para.222 (WTO Appellate Body Report September 26, 2002).

2.7 Subsidies

Border Carbon Adjustments may comprise export rebates of carbon taxes or emission allowances to level the playing field for domestic producers on the overseas market. The question is whether such BCAs on the export side are consistent with the WTO law, especially the SCM Agreement.

The SCM Agreement defines the term “subsidy” as a “financial contribution” by a “government or any public body” that confers a “benefit” (Article 1.1), and a subsidy must be “specific” (Article 1.2). In climate change context, free allocation of allowances for emissions, for example, may constitute such a “subsidy” because it can be a “financial contribution” in the form of a “revenue ... foregone” by the government, and thus, bring the “benefit” to “specific” companies or industry receiving an allocation.

However, even if a measure qualifies a “subsidy,” it does not necessarily mean there is a breach of WTO law. Only subsidies contingent upon export performance or import substitutions are illegal under Article 3 of the SCM Agreement. Some scholars consider that because BCAs often aim at exempting exporters from tax duties, they can constitute export subsidies.²⁷⁰ However, if carbon taxes and charges accumulated under emissions allowance requirements can qualify as indirect taxes, they will be permissible for export rebates. Footnote 1 to the SCM Agreement, expanding on Article VI:4 of the GATT, provides:

the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in excess of those

²⁷⁰ Weber, “Border Tax Adjustment – Legal Perspective,” 415.

which have accrued, shall not be deemed to be a subsidy.

Likewise, paragraph (g) of Annex I of the SCM Agreement regulates export subsidy as follows:

The exemption or remission, in respect of the production and distribution of exported products, of indirect taxes in excess of those levied in respect of the production and distribution of like products when sold for domestic consumption.

In *US-FSC*,²⁷¹ the Appellate Body found the exemption of the U.S foreign sales corporations from an income tax to be a prohibited subsidy under Article 3.1 of the SCM Agreement,²⁷² and stated that:

The tax measures identified in footnote 1 as not constituting a “subsidy” involve the exemption of exported products from product-based consumption taxes. The tax exemptions under the FSC measure relate to the taxation of corporations and not products. Footnote 1, therefore, does not cover measures such as the FSC measure.²⁷³

Accordingly, products exported in a country which has a climate regime can receive exemptions from carbon taxes or emission allowances for the number of duties that would have been collected if such products were sold in the internal market. Also, paragraph (g) of Annex I of the SCM Agreement provides that when the exemption or abatement of indirect taxes on exported products is not “in excess of” the duties levied

²⁷¹ United States - Tax Treatment for “Foreign Sales Corporations,” WT/DS108/R (WTO Panel Report October 8, 1999); United States - Tax Treatment for “Foreign Sales Corporations,” WT/DS108/AB/R (WTO Appellate Body Report February 24, 2000).

²⁷² *US – FSC (Panel Report)*, para.7.108, 7.131.

²⁷³ *US – FSC (Appellate Body Report)*, para.93.

on “like products” destined in the domestic market, such export rebate does not constitute as an export subsidy. This rule, however, raises an issue about the term “like products” which can be problematic since the carbon-intensive products and climate-friendly products could be taxed differently in the domestic market, but they would be “like” as discussed above.

If a subsidy is classified as a “prohibited subsidy,”²⁷⁴ it is deemed specific and may be challenged by other WTO Members. On the other hand, an “actionable subsidy”²⁷⁵ can be challenged only when it passes the “specific” test and the complaining Member can show its “adverse effect” to international trade.²⁷⁶ The “specific” test requires that a subsidy be granted to “certain enterprises” defined as an enterprise or industry or group of those within the jurisdiction of the granting authority according to Article 2.1 of the SCM Agreement. However, the provision does not point to the exact quantity of enterprises or industries so that a measure could be deemed specific. In the case law of the WTO, most of the subsidies at issue were considered “specific.”

In particular, panels in *US-Upland Cotton*,²⁷⁷ and *US-Lumber IV*²⁷⁸ found a subsidy targeting a large number of products within an industry or a group of industries is specific. Notably, the “specific” test is not limited to the *de jure* assessment but *de facto* basis is also considered. A number of scholars explain that even when a subsidy is not explicitly limited to certain enterprises, its predominant or disproportionate beneficiaries are still to be examined due to the diversification of an economy as

²⁷⁴ Part II of the SCM Agreement

²⁷⁵ Part III of the SCM Agreement

²⁷⁶ Article 5 of the SCM Agreement

²⁷⁷ United States - Subsidies on Upland Cotton, WT/DS267/R, para.7.1150 (WTO Panel Report September 8, 2004).

²⁷⁸ United States - Final Countervailing Duty Determination with respect to certain Softwood Lumber from Canada, WT/DS257/R, para.7.120 (WTO Panel Report August 29, 2003).

regulated in Article 2.1(c).²⁷⁹ However, specificity is finally decided by WTO adjudicative bodies or investigating authorities on a case-by-case basis.²⁸⁰

In the context of climate policies, if a government issues export rebates or tax exemption only to certain sectors of the economy, especially with the most trade-exposed industries, a domestic ETS or a carbon tax system might not pass this test of specificity. Accordingly, an importing Member may unilaterally impose countervailing measures when its domestic industry has suffered injuries by those subsidies rather than seeking the multilateral dispute settlement. In addition, Condon argues that Article XX of GATT 1994 should apply to justify prohibited subsidies, actionable subsidies causing adverse effects, or even countervailing measures under since it can justify a measure which violates Article VI (countervailing duties) and XVI (subsidies in general).²⁸¹ If so, climate change mitigation subsidies that meet the requirements under Article XX shall be exempted from actions in dispute settlements and from countervailing measures of injured Members. This matter is still uncertain and needs to be clarified in future case law.

2.8. Policy options for the implementation of Border Carbon Adjustments within WTO

Disputes targeting domestic measures related to clean energy, causing to potential contradictions between trade regime and climate action has been increasing

²⁷⁹ Thomas Cottier, Olga Nartova, and Sadeq Z. Bigdeli, *International Trade Regulation and the Mitigation of Climate Change: World Trade Forum* (Cambridge University Press, 2009), 180.

²⁸⁰ United States - Subsidies on Upland Cotton, WT/DS267/R, para.7.1142 (WTO Panel Report September 8, 2004).

²⁸¹ Condon, "Climate Change and Unresolved Issues in WTO Law," December 1, 2009, 899–903.

among WTO Members.²⁸² However, climate change is a complex issue that requires effective negotiations between countries rather than the rulings of WTO panels and Appellate Body.²⁸³ Because a case-by-case dispute settlement is not appropriate for the implementation of border carbon adjustments, negotiated solutions within the WTO are called a legal reform of the organization to accommodate climate change mitigation. The following sections examine some options that scholars have proposed for improvements in WTO law.

2.8.1 Amending WTO trade rules in favor of unilateral climate policies.

An amendment of WTO rules could reduce the uncertainty about Border Carbon Adjustments that a case-by-case dispute settlement has caused.²⁸⁴ Many scholars believe this solution would lessen the burden on the WTO dispute settlement system while providing coherent linkage between trade and climate regimes.²⁸⁵ Such

²⁸² Recent disputes relating to renewable energy includes (i) *Canada - Renewable Energy* (DS412), concerning Ontario's feed-in-tariff program, (ii) *China - Measures Concerning Wind Power Equipment* (DS419), concerning China's Special Fund for Wind Power Equipment Manufacturing, (iii) *United States - Countervailing Duty Measures on Certain Products from China* (DS437), concerning many countervailing duties investigations from the U.S toward to pricing of Chinese solar panels and wind solar, (iv) *European Union and certain Member States - Certain Measures Affecting the Renewable Energy Generation Sector* (DS452) concerning various fit-in-tariff program of EU and its Member States, (v) *India - Certain Measures Relating to Solar Cells and Solar Modules* (DS456), Indian local content requirements to solar cells and/or modules, (vi) *United States — Certain Measures Relating to the Renewable Energy Sector* (DS510), concerning local content requirements and subsidies that many U.S. states imposed. Another challenged climate-related policy is the favouring of biofuels. Argentina and Indonesia have raised four cases against the EU's regulations on local content requirements and antidumping duties (<https://www.ictsd.org/sites/default/files/downloads/2012/02/biofuels-subsidies-and-the-law-of-the-wto.pdf>, accessed on 15 January 2019).

²⁸³ James Bacchus, "Global Rules for Mutually Supportive and Reinforcing Trade and Climate Regimes," *ICTSD and World Economic Forum, E15 Expert Group on Measures to Address Climate Change and the Trade System - Policy Option Paper E15Initiative* (2016): 13–14, http://www3.weforum.org/docs/E15/WEF_Climate_Change_POP.pdf.

²⁸⁴ Kasturi Das et al., *Making the International Trade System Work for Climate Change: Assessing the Options*, (Climate Strategies, 2018), 17.

²⁸⁵ According to Article X of the Agreement Establishing the WTO ("WTO Agreement"), a proposal for an amendment could be given to the Ministerial Conference by a WTO Member or one of the three specialized Council (Good, Services, and TRIPS). The Ministerial Conference has 90 days to reach a

amendments may be attractive way to balance the multilateral trade system and national climate policies. Some suggest that Article XX of the GATT should be amended so that it explicitly covers climate change measures or measures based on multilateral environmental agreements and others suggest an amendment of the SCM Agreement so as to admit accept the possibility of export rebates for carbon taxes or exemption for allocation allowance requirements.²⁸⁶ However, how the relevant provisions should be amended in order to achieve both trade and climate aims remains to be decided. Also, amendments that alter the rights and obligations of the WTO Members are binding on only those Members that have accepted them (Article X:3 of the WTO Agreement).²⁸⁷ Thus a WTO Member which does not accept such amendments may continue to dispute the compatibility with WTO law of BCAs or climate measure. In practice, the procedure for approval of an amendment in WTO law is highly complicated and challenging. To date, only one amendment was agreed in 2005.²⁸⁸ Therefore, in light of the current situation of the WTO and the U.S position under the Trump administration, an amendment of WTO rules which may concern

consensus on that proposal. In case the consensus is unachievable, the Ministerial Conference might decide to reach a two-thirds majority of members whether to submit the proposed amendment for their ratification procedures. When at least two-thirds of members have ratified the proposal, it will take effect. In specific provisions, the amendment can only be effective by the acceptance of all members. An amendment can change WTO members obligations and reduce legal hurdle relating to climate-related policies and BCAs that derives from the case-by-case nature of the organization's dispute settlement mechanism. Many scholars believe this solution would lessen the burden on the WTO dispute settlement system while providing coherent linkage between trade and climate regimes. See Harro Van Asselt, Francesco Sindico, and Michael A. Mehling, "Global Climate Change and the Fragmentation of International Law," *Law & Policy* 30, no. 4 (2008): 440.

²⁸⁶ International Bar Association, "Climate Change Justice and Human Rights Task Force Report," *Achieving Justice and Human Rights in an Era of Climate Disruption*, 2014, 166–67.

²⁸⁷ Amelia Porges and Thomas L. Brewer, "Climate Change and a Renewable Energy Scale-up: Responding to Challenges Posed to the WTO" (by International Centre for Trade and Sustainable Development (ICTSD) 7 ..., 2014), 1.

²⁸⁸ This amendment concerns the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) regarding a compulsory licensing provision related to public health and it became into force in 2017. See https://www.wto.org/english/news_e/news17_e/trip_23jan17_e.htm, accessed on 15 January 2019.

BCAs appears practically impossible.²⁸⁹

2.8.2 The waiver of specific WTO obligations

Another solution is a “waiver” under Article IX:3 of the WTO Agreement, which exempts members from a particular obligation.²⁹⁰ A Member can invoke this waiver provision only under exceptional circumstances for a limited time frame as stipulated in the Ministerial Conference’s decision. A waiver allows WTO Members to prioritize non-trade interests that they committed in other international legal regimes and, thus, helps to restrict the WTO’s jurisdiction to competence and legitimacy regarding other areas of international law.²⁹¹ Climate-related interests would be suitable for this option. Because a waiver does not create a new obligation or modify an existing one, this option is more feasible than amendment.²⁹² Many countries have applied for waivers in practice. An example is the Kimberly Waiver of 2003 concerning “conflict diamonds,” in which the diamonds are used to finance rebels

²⁸⁹ Phil Levy, “What’s Next For The World Trade Organization?,” *Forbes*. <https://www.forbes.com/sites/phillevy/2018/10/31/whats-next-for-the-world-trade-organization/> accessed on 15 January 2019.

²⁹⁰ Article IX:3 of GATT: “In exceptional circumstances, the Ministerial Conference may decide to waive an obligation imposed on a Member by this Agreement or any of the Multilateral Trade Agreements, provided that any such decision shall be taken by three fourths of the Members unless otherwise provided for in this paragraph.

(a) A request for a waiver concerning this Agreement shall be submitted to the Ministerial Conference for consideration pursuant to the practice of decision-making by consensus. The Ministerial Conference shall establish a time-period, which shall not exceed 90 days, to consider the request. If consensus is not reached during the time-period, any decision to grant a waiver shall be taken by three fourths of the Members.

(b) A request for a waiver concerning the Multilateral Trade Agreements in Annexes 1A or 1B or 1C and their annexes shall be submitted initially to the Council for Trade in Goods, the Council for Trade in Services or the Council for TRIPS, respectively, for consideration during a time-period which shall not exceed 90 days. At the end of the time-period, the relevant Council shall submit a report to the Ministerial Conference.”

²⁹¹ Isabel Feichtner, “The Waiver Power of the WTO: Opening the WTO for Political Debate on the Reconciliation of Competing Interests,” *European Journal of International Law* 20, no. 3 (2009): 645.

²⁹² Hufbauer and Kim, “Climate Change and Trade,” 11.

against the legitimate governments.²⁹³ This waiver exempted members from certain provisions of GATT so as to embargo trade with such diamonds.²⁹⁴ Some commentators suggest that WTO Members can negotiate a similar waiver for BCAs which could contain a limited harmonization for the application of measures to different countries.²⁹⁵

However, according to Article IX:3 of the WTO Agreement, a Member can invoke “waivers” only in exceptional circumstances for a limited time frame as stipulated in the Ministerial Conference’s decision. Waivers can thus work only as a suspension of the implementation of existing obligations. According to Article IX:3 and IX:4 of the WTO Agreement, the Ministerial Conference has to initiate a review to waiver exceeding one year and repeat annually until its termination. The Ministerial Conference needs to inspect the existence of exceptional circumstances underlining the waiver as well as the qualification of terms and conditions appointed to the waiver.

Therefore, a waiver is not a stable option. The provisional character of this option provides no durable solution to the WTO incompatibility of BCAs that represent long-term challenges and conflicts between trade and climate regimes. Moreover, a waiver may still be challenged by other Members under non-violation claims regarding nullification and impairment of rights under Article XXIII:1(b) of the GATT.²⁹⁶ Because of such shortcomings, a waiver is not a promising solution for the

²⁹³ “Conflict diamonds” mean diamonds which are used to finance rebels against the legitimate governments. See https://www.wto.org/english/news_e/news03_e/goods_council_26fev03_e.htm, accessed on 15 January 2019.

²⁹⁴ Ibid.

²⁹⁵ See Feichtner, “The Waiver Power of the WTO”; and Hufbauer and Kim, “Climate Change and Trade.”

²⁹⁶ Article XXIII:1(b) of GATT 1994: “1. If any contracting party should consider that any benefit accruing to it directly or indirectly under this Agreement is being nullified or impaired or that the attainment of any objective of the Agreement is being impeded as the result of ...

(b) the application by another contracting party of any measure, whether or not it conflicts with the provisions of this Agreement, ... the contracting party may, with a view to the satisfactory adjustment of

implementation of border carbon adjustments.

2.8.3 Seeking an authoritative interpretation of provisions in the WTO Agreements

There is another approach to accommodate climate concerns called “authoritative interpretation” (Article IX:2 of the WTO Agreement).²⁹⁷ The Ministerial Conference and the General Council can adopt such “authoritative interpretation” without ratification by the WTO Members.²⁹⁸ Different from interpretations by panels and the Appellate Body, an advantage this “authoritative interpretation” is its binding effects on all WTO Members and the ability to add or diminish the rights and obligations of members under the WTO Agreement.²⁹⁹

Some scholars suggest that WTO Members should adopt such interpretation regarding the legality of PPM measures.³⁰⁰ Others propose the clarification of the scope of Article XX of the GATT so that this provision covers climate measures taken in accordance with the Paris Agreement.³⁰¹ Meanwhile, other experts support the use of authoritative interpretation to clarify grey areas in WTO law for climate change

the matter, make written representations or proposals to the other contracting party or parties which it considers to be concerned. Any contracting party thus approached shall give sympathetic consideration to the representations or proposals made to it.”

²⁹⁷ See Matthias Buck and Roda Verheyen, *International Trade Law and Climate Change: A Positive Way Forward* (Stabsabt. der Friedrich-Ebert-Stiftung, 2001); and Claus-Dieter Ehlermann and Lothar Ehring, “The Authoritative Interpretation under Article IX:2 of The Agreement Establishing The World Trade Organization: Current Law, Practice and Possible Improvements,” *Journal of International Economic Law* 8, no. 4 (2005): 803–824.

²⁹⁸ Article IX:2 of the Agreement Establishing the WTO: “The Ministerial Conference and the General Council shall have the exclusive authority to adopt interpretations of this Agreement and of the Multilateral Trade Agreements. In the case of an interpretation of a Multilateral Trade Agreement in Annex 1, they shall exercise their authority on the basis of a recommendation by the Council overseeing the functioning of that Agreement. The decision to adopt an interpretation shall be taken by a three-fourths majority of the Members. This paragraph shall not be used in a manner that would undermine the amendment provisions in Article X.”

²⁹⁹ Ehlermann and Ehring, “The Authoritative Interpretation under Article IX.”

³⁰⁰ Buck and Verheyen, *International Trade Law and Climate Change*.

³⁰¹ Bacchus, “Global Rules for Mutually Supportive and Reinforcing Trade and Climate Regimes,” 16.

purposes, such as prohibited subsidies under the SCM Agreement rather than an amendment or a waiver.³⁰²

However, WTO Members have rarely used this method due to their divergence of view.³⁰³ The voting requirement for three-fourths of the WTO Members in decision-making (although consensus has been the norm in practice) forms one of the main drawbacks of the authoritative interpretation.³⁰⁴ Many writers address that the present voting process has been practically abandoned in the WTO although it was the usual practice for the GATT.³⁰⁵ Therefore, an authoritative interpretation about this matter is unlikely to be adopted in the short term.

2.8.4 Proposing A Plurilateral Trade and Climate Agreement

Giving the difficulty of obtaining consensus among the WTO Members, some authors propose a plurilateral agreement on trade-related climate policy measures to resolve the issue of climate and trade.³⁰⁶ This proposal of a plurilateral trade agreement, or “Sustainable Energy Trade Agreement,” comprises various a wide range of commitments from the liberalization of climate-friendly goods and services to carbon-related standards.³⁰⁷ A plurilateral agreement, which is similar to the

³⁰² Das et al., “Making the International Trade System Work for Climate Change,” 21.

³⁰³ In 1999, the EC attempted to obtain an interpretation to resolve the “sequencing” issue respecting the connection between Article 21.5 and Article 22.2 of the Dispute Settlement Understanding on compliance measures. Another endeavor by the EU was its parliament’s resolution pushing for an authoritative interpretation on the “like product” doctrine. See Ehlermann and Ehring, “The Authoritative Interpretation under Article IX.”

³⁰⁴ *Ibid.* at 806.

³⁰⁵ Thomas Cottier, “Confidence-Building for Global Challenges: The Experience of International Economic Law and Relations,” in *Building International Climate Cooperation: Lessons from the Weapons and Trade Regimes for Achieving International Climate Goals*, ed. Ruth Greenspan Bell et al. (World Resources Institute, 2012), 137–40.

³⁰⁶ Hufbauer, Charnovitz, and Kim, *Global Warming and the World Trading System*, 2009, 103.

³⁰⁷ Matthew Kennedy, “Legal Options for a Sustainable Energy Trade Agreement,” *ICTSD Global Platform on Climate Change, Trade and Sustainable Energy*, July 2012, <https://www.ictsd.org/sites/default/files/downloads/2012/07/legal-options-for-a-sustainable-energy-trade-agreement.pdf>.

Government Procurement Agreement and Trade in Civil Aircraft Agreement contained in Annex 4 of the WTO Agreement, would be binding on only those Members that have accepted it, and creates neither obligations nor rights for those that have not accepted it. Also, this agreement would be applied only to the former Members.³⁰⁸ After first being accepted by several WTO Members, such a plurilateral agreement concerning BCAs may gain acceptance of other Members in the future.³⁰⁹

However, for the approval of a plurilateral trade agreement, consensus of the WTO Members at the Ministerial Conference is required under Article X:9 of the WTO Agreement.³¹⁰ And a consensus would be unlikely, given the skepticism of the majority of the WTO Members about carbon-related trade restrictions.³¹¹ Even if approved, such an agreement may not be accepted by main GHG emitters. Then it is difficult to achieve the agreement's objectives.

2.8.5 Some observations

As discussed above, all proposals for improvements of WTO rules relating to BCAs including amendment, waiver, authoritative interpretation and plurilateral agreement are not very realistic. The consensus decision-making in the WTO makes any reform of WTO rules very difficult to realize. It seems that the U.S.'s withdrawal from the Paris Agreement and recent increase of trade conflicts between the U.S and

³⁰⁸ James Bacchus, "Questions in Search of Answers: Trade, Climate Change, and the Rule of Law," in *Keynote Address to the Conference on "Climate Change, Trade and Competitiveness: Issues for the WTO"*, Geneva, vol. 16, 2010, 6.

³⁰⁹ Susanne Droege et al., "The Trade System and Climate Action: Ways Forward under the Paris Agreement," *S.C. J. Int'l L. & Bus.* 13 (2017): 251.

³¹⁰ Article X:9 of the Agreement Establishing the WTO: "The Ministerial Conference, upon the request of the Members parties to a trade agreement, may decide exclusively by consensus to add that agreement to Annex 4. The Ministerial Conference, upon the request of the Members parties to a Plurilateral Trade Agreement, may decide to delete that Agreement from Annex 4."

³¹¹ Ehlermann and Ehring, "The Authoritative Interpretation under Article IX," 3; and Bacchus, "Questions in Search of Answers," 2010, 6.

other countries make the situation worse.³¹² In order to realize such a reform, a significant commitment of the WTO Members would be necessary.

2.9. Conclusion to Chapter 2

As analyzed above, Border Carbon Adjustments are not *a priori* illegal under WTO law. However, they need to satisfy the conditions for eligibility of measures for border adjustment and must be consistent with the non-discrimination principles when imposed on imports. If BCAs are inconsistent with WTO law concerning border adjustment they have to meet the requirements of Article XX of GATT under exceptions relating to public health and environmental policy reasons. The justifications for the import-sided BCAs under Article XX heavily depend on their examination of the “good faith” test under the chapeau of Article XX. On the side of exportation, BCAs need to comply with the WTO subsidy rules with a greater legal uncertainty when export rebates of carbon taxes and emissions allowance may be condemned as prohibited subsidies with obstacles for justifications under Article XX of GATT. Whether BCAs are allowed under WTO law is uncertain. The risk of a dispute being filed over these measures before the WTO dispute settlement mechanism is high.

This has called for negotiated solutions that could provide legal certainty to the issue of BCAs. Proposals have been made for legal changes at the WTO, including amendment of existing trade rules, waiver of specific obligations, authoritative interpretation of provisions and a plurilateral trade and climate agreement. However, the examination of those solutions within the WTO exhibits lack feasibility and

³¹² Jeff Swartz, “Are We Heading towards a Climate Change Trade War? | International Centre for Trade and Sustainable Development,” *Opinion and Analysis from ICTSD’s Network of Experts*, June 29, 2018.

effectiveness at least in the short and medium term. Thus, such shortcomings of multilateral *fora* call for a more appealing approach for the negotiation of implementing BCAs in practice.

Chapter 3: An Approach to Implementing Border Carbon Adjustments under Regional Trade Agreements

As analyzed in Chapter 2, a number of obstacles exist concerning the compatibility of Border Carbon Adjustments (BCAs) with WTO law. Although such problems can be settled on a case by case basis by WTO panels and the Appellate Body, such settlement may be inconsistent and uncertainty may remain. Therefore, proper negotiated solutions that could provide certainty to the issue of BCAs are necessary. This chapter introduces a regional approach which is represented by provisions regarding BCAs in Regional Trade Agreements (RTAs) such as the North American Free Trade Agreement (NAFTA), Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Regional Comprehensive Economic Partner (RCEP). In particular, it discusses the incentives for countries to conclude RTAs with climate-related provisions, legal issues related to the inclusion of such provisions and proposals for implementing BCAs within RTAs.

3.1. Prospects to regulate Border Carbon Adjustments by Regional Trade Agreements

Although regulation by the WTO Agreement is certainly ideal, it could be burdensome and time-consuming to negotiate and gain consensus on the issue of climate change within the WTO. Since negotiations within this largest international organization in trade have come to a standstill, the increase of Regional Trade Agreements has provided plenty of encouragement for analysis, ensuring that sustained research in the field is merited. This section describes a regional approach that aims at regulating the issue of Border Carbon Adjustments in regional trade agreements (RTAs) such as Free Trade Agreements (FTAs) and Custom Unions (CUs).

3.1.1 The proliferation of Regional Trade Agreements

The history of regionalism can be observed in many parts of the world.³¹³ Traditionally, the negotiation of regional economic integration was for the needs of co-operation beyond the nation-state that could form the basis for a more profound political coalition.³¹⁴ Afterwards, regional arrangements on trade developed with other aims beyond geographical proximity. This trend can be referred to as the “new regionalism,” which accept other features shared by members also be sufficient to determine, such as cultural, linguistic, social or historical bonds.³¹⁵ Thus, governments today can recognize an RTA by the mutual interests of parties rather than the geography.

This new regional approach to trade co-operation featured deeper economic integration with the formation of the EU, NAFTA, and MERCOSUR (Southern Common Market-*Mercado Común del Sur*).³¹⁶ Inspired by the establishment of these trade blocs in the Americas and Europe in the late 1980s and early 1990s, the number

³¹³ Regional economic integration firstly became an essential focus in Europe in the 1950s and 1960s, mainly intending to build peace after World War II, with the establishment of the European Economic Community in 1958. In Latin America, efforts at economic co-operation focused on promoting industrialization by substituting imports from the U.S. with regional production. In Africa, the establishment of regional institutions, such as African Unity in 1963 (nowadays the African Union), was concurrent with the increase of states-independence. In Asia, the Association of Southeast Asian Nations found their association in 1967 (ASEAN). See Theresa Carpenter, “A Historical Perspective on Regionalism,” in *Multilateralizing Regionalism: Challenges for the Global Trading System*, ed. Richard Baldwin and Patrick Low (Cambridge University Press, 2009), 13–27.

³¹⁴ David Mitrany, “A Working Peace System,” in *The European Union* (Palgrave, London, 1994), 77–97; and Ernst B Haas, *Beyond the Nation State: Functionalism and International Organization* (ECPR Press, 2008); and Ernst B. Haas and Desmond Dinan, *The Uniting of Europe: Political, Social, and Economic Forces, 1950-1957*, vol. 311 (Stanford University Press Stanford, 1958).

³¹⁵ For instance, under the WTO definition of RTAs, an agreement between the United States and Jordan is considered “regional.” See Tanja A. Börzel and Thomas Risse, “Introduction: Framework of the Handbook and Conceptual Clarifications,” in *The Oxford Handbook of Comparative Regionalism*, ed. Tanja Börzel and Thomas Risse (Oxford University Press, 2016), 3–15.

³¹⁶ Louise Fawcett, “Exploring Regional Domains: A Comparative History of Regionalism,” *International Affairs* 80, no. 3 (2004): 440; Fredrik Söderbaum, “Early, Old, New and Comparative Regionalism: The Scholarly Development of the Field,” 2015, 18.

of RTAs has flourished in the last two decades.³¹⁷ The reasons behind the proliferation of RTAs originated from the difficulties confronted in the Uruguay Round, which motivated several countries to pursue preferential deals as an alternative in case the negotiation of multilateral trade within the WTO would fail.³¹⁸ Also, over the past 50 years, the number of Member States of the WTO has grown to 164 as of 2019. This broad membership might cause an impasse to the multilateral trade liberalization. Such difficulties were revealed in the collapse of trade deal during the 2013 WTO Ministerial Conference in the context of the Doha Round.³¹⁹ Thus, WTO Members have considered RTAs as a possible alternative to improve economic welfare and domestic industries' profits.³²⁰

Recently, the emergence of regionalism in the trade context has incorporated the negotiation and establishment of mega-regional agreements, such as the EU-Canada Comprehensive Economic and Trade Agreement, the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), the Transatlantic Trade and Investment Partnership (TTIP), and the Regional Comprehensive Economic Partnership (RCEP). Mega-RTAs are not only significant in terms of the participation of the world's major trading nations but also their expansive scope, which goes far beyond market access to

³¹⁷ By December 2018, the WTO had received 681 notifications of RTAs, 467 of which were in force at that time. See https://www.wto.org/english/tratop_e/region_e/region_e.htm#facts, accessed on 11 May 2019.

³¹⁸ For instance, the expansion of the European RTAs network included countries from Central and Eastern Europe, the Balkans, and the Mediterranean; the influence from the U.S for a strong preference towards preferential agreements; the regionalism-oriented policies from Chile, Mexico, and Singapore aim to establish preferential relations with their major trading partners; the fragmentation of the former Soviet Union states looked for new trade organizations. See Rafael Leal-Arcas, "Proliferation of Regional Trade Agreements: Complementing or Supplanting Multilateralism," *Chi. J. Int'l L.* 11 (2010–2011): 597–630.

³¹⁹ Doha Round is the most recent round of trade negotiations within WTO. It was launched in November 2011. See https://www.wto.org/english/tratop_e/dda_e/dda_e.htm.

³²⁰ Scott L. Baier et al., "Do Economic Integration Agreements Actually Work? Issues in Understanding the Causes and Consequences of the Growth of Regionalism," *World Economy* 31, no. 4 (2008): 465.

address emerging issues, geopolitical goals and improve competitiveness.³²¹

Some authors have argued that mega-regionals might influence the development of multilateral trade rules, as future rules may be accommodated after the mega-RTAs.³²² Still, the acceleration of regional approach for trade governance sparked a debate on whether RTAs exhibit “stumbling-blocks” or could become “stepping stones” for the multilateral trade regime.³²³ Scholars were afraid that the emergence of regionalism would promote protectionism or cause a distraction from global trade negotiation.³²⁴

In actuality, WTO is the only international organization for trade with the membership of 164 countries. This organization has provided the necessary legal infrastructure of trade and a mechanism for enforcement. Meanwhile, the role of RTAs could assist and provide new rules which the WTO has failed to create and those that could elaborate and refine WTO rules. In this regard, the WTO and RTAs are complement to each other, and the combination of rules between them can help international trade regime be more transparent and comprehensive. Specifically, RTAs would support for deeper commitments than the ones typically granted at the multilateral level, moving trade agenda forward among a small group of countries.

Consequently, RTAs could experiment as laboratories for new and sensitive

³²¹ Anabel González, “Mega-Regional Trade Agreements Game-Changers or Costly Distractions for the World Trading System,” in *World Economic Forum Global Agenda Council Trade Foreign Direct Investment*, 2014, 1–48.

³²² Richard E. Baldwin, “Multilateralising 21st Century Regionalism,” *OECD Publishing Global Forum on Trade, Reconciling Regionalism and Multilateralism in A Post-Bali World*, no. Background Paper (2014).

³²³ Jagdish Bhagwati, “Regionalism versus Multilateralism,” *The World Economy* 15, no. 5 (September 1, 1992): 535–56; and Pascal Lamy, “Stepping Stones or Stumbling Blocks? The EU’s Approach Towards the Problem of Multilateralism vs Regionalism in Trade Policy,” *The World Economy* 25, no. 10 (November 1, 2002): 1399–1413.

³²⁴ Jagdish Bhagwati, *Termites in the Trading System: How Preferential Agreements Undermine Free Trade* (Oxford University Press, 2008); and Leal-Arcas, “Proliferation of Regional Trade Agreements.”

trade-related issues.³²⁵ Also, RTAs may cover not only trade matters in a narrow sense, but also other issues that cannot be settled at a multilateral level such as labor, environmental and competition standards.³²⁶ Once an RTA is concluded among a small number of WTO Members, other Members may follow this approach and multilateralize this idea. Practically, many WTO Members started to negotiate several sensitive trade-related issues at the bilateral or at regional level and only then brought to the multilateral negotiations in the WTO.³²⁷

3.1.2 The concept of climate clubs and Regional Trade Agreements

As analyzed in the Chapter 1, the negotiation of climate change mitigation and the implementation of Border Carbon Adjustments at a multilateral level might be the best option in terms of predictability, transparency, and legal certainty. Such actions require the participation of all countries in order to prevent free-riding.³²⁸ However, to date, there is little efficient international cooperation because achieving binding emission-reduction targets for all countries is challenging. As a consequence, international instruments have failed to secure a robust mechanism to tackle the climate change issue.³²⁹

This drawback, about which many scholars have discussed, is mainly caused by

³²⁵ Richard E Baldwin, “Multilateralising Regionalism: Spaghetti Bowls as Building Blocs on the Path to Global Free Trade,” *World Economy* 29, no. 11 (2006): 1451–1518.

³²⁶ E. K. Kessie, “The World Trade Organization and Regional Trade Agreements : An Analysis of the Relevant Rules of the WTO,” Sydney (Thesis, The University of Technology, Doctor of Juridical Science, 2001), 31–55.

³²⁷ Joy A. Kim, “Harnessing Regional Trade Agreements for the Post-2012 Climate Change Regime,” *Climate and Trade*, 2009, 57.

³²⁸ “Free-riding” is a phenomena that a country benefits from a public good without paying to the costs. See William Nordhaus, “Climate Clubs: Overcoming Free-Riding in International Climate Policy,” *American Economic Review* 105, no. 4 (2015): 1339.

³²⁹ For instance, the Kyoto Protocol showed its weakness in both environmental effectiveness and legitimacy when Canada withdrew from this regime in 2011 without any legal consequence. See Damian Carrington and Adam Vaughan, “Canada Condemned at Home and Abroad for Pulling out of Kyoto Treaty,” *The Guardian*, 2011.

the lack of incentive to remain a contracting party to such agreements.³³⁰ Also, there is no penalty in case of a country's failure to meet its commitments. Against this background, limited-membership coalitions for cooperation called "climate clubs" have been proposed.³³¹ These clubs are groups of like-minded countries that are willing to attempt more ambitious climate goals than are conceived at the multilateral forum. Although the emissions reductions gained by such existing groups have not been significant,³³² several governments have already started climate cooperation under this approach.³³³ Meanwhile, RTAs have been proven as efficient laboratories for rules that do not exist in the WTO context and well beyond trade, such as competition, investment, environmental protection, natural resources, and labor rights.³³⁴ As such, this form of trade agreements might fit the concept of "climate clubs."

The idea of using RTAs to combat climate change originates in Article XXIV of GATT. This article allows Free Trade Agreements and Custom Unions to become exceptions to the MFN principle in order to put forward the trade agenda through bilateral and regional trade agreements. Two or several WTO Members may conclude

³³⁰ William Antholis and Todd Stern, "Creating an E-8," *Brookings Institution*, 2007, 1–5; and William Antholis, "Five" Gs": Lessons from World Trade for Governing Global Climate Change," in *Brookings Trade Forum* (JSTOR, 2008), 121–138; and David G Victor, "The Case for Climate Clubs" (Citeseer, 2015).

³³¹ Miles Kahler, "Multilateralism with Small and Large Numbers," *International Organization* 46, no. 3 (1992): 681–708; David G. Victor, "Toward Effective International Cooperation on Climate Change: Numbers, Interests and Institutions," *Global Environmental Politics* 6, no. 3 (2006): 90–103; Moisés Naím, "Minilateralism," *Foreign Policy*, no. 173 (2009): 136; David G. Victor, *Global Warming Gridlock: Creating More Effective Strategies for Protecting the Planet* (Cambridge University Press, 2011).

³³² Nordhaus, "Climate Clubs: Overcoming Free-Riding in International Climate Policy," 2.

³³³ Regarding the US's climate policy of Trump presidency, research showed that climate clubs could function even without the participation of the US when other major emitters, such as EU, China, and Canada, show leadership. See Detlef F. Sprinz et al., "The Effectiveness of Climate Clubs under Donald Trump," *Climate Policy* 18, no. 7 (August 9, 2018): 828–38.

³³⁴ See the discussions in previous section. See also Leal-Arcas, "Proliferation of Regional Trade Agreements," 11.

an RTA and accommodate their climate change interests therein. In effect, some FTAs do contain climate change chapters.

A prime example of such RTA is the North American Free Trade Agreement (NAFTA).³³⁵ After concluding the NAFTA, which focuses mainly on trade issues, the parties negotiated separate arrangements such as the North American Agreement for Environment Cooperation (NAAEC). The NAAEC provides for sanctions that may be imposed on a party that fails to enforce environmental laws and, importantly, it allows citizens or organizations of the parties to submit a claim against a party that has not enforced its environmental laws. Some subsequent RTAs, such as the US-Colombia FTA, go a step further and provide for a mutual commitment to pass legislation which implements the terms of the multilateral environmental agreements and guarantees public participation and access to justice through an Environmental Affairs Council.³³⁶

The Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), a 21st century mega-RTA, also provides a framework to work out environment issues. Chapter 20 on Environment deals with climate change mitigation and requires the adoption of measures for the protection of the ozone layer.³³⁷ If a party fails to take such measures or otherwise modifies the ozone layer in a manner causing adverse effects on human health and environmental protection and therefore affecting trade or investment between the parties, other parties may ask that party for consultations or dispute settlement resolution (Article 20.5). In addition, the CPTPP encourages actions

³³⁵ Office of the U.S Trade Representative, “North American Free Trade Agreement (NAFTA).” See <https://ustr.gov/trade-agreements/free-trade-agreements/north-american-free-trade-agreement-nafta>, accessed on June 21, 2018.

³³⁶ For example, Chapter Eighteen of US - Colombia Trade Promotion Agreement. See <https://ustr.gov/trade-agreements/free-trade-agreements/colombia-tpa>, accessed on June 21, 2019.

³³⁷ Article 20.5 to 20.15 require commitments of parties regarding domestic measures for protecting the environment and controlling ozone-depleting substances in accordance with the 1987 Montreal Protocol on Substance that Deplete the Ozone Layer.

to a transition to low-emissions economy in accordance with the domestic circumstances and capabilities of each party. The parties may also cooperate to address other matters such as energy efficiency, emissions monitoring, market and non-market mechanisms on a bilateral or plurilateral basis (Article 20.15 and 20.12.2).

In the light of these requirements, some argue that this agreement has reinforced voluntary actions of parties, but failed to build strong commitments about climate change mitigation.³³⁸ However, unlike the EU and NAFTA, CPTPP is diverse not only in geography but also in the level of economic development among the countries participating in the agreement. Therefore, some developing-country parties can still benefit from the CPTPP to enhance the environmental protection requirements. Viet Nam, for instance, an original party to the CPTPP, existing rules on environmental protection have not been effectively implemented and many issues remain regarding pollution and high-emission production.³³⁹ Thus, compliance with the CPTPP may raise the awareness among policy makers and private entities. This could be an opportunity to revise law and policies in Viet Nam toward the mitigation of climate change.³⁴⁰ In addition, most of the contracting parties to mega-RTAs such as CPTPP, TTIP, RCEP are also large GHG emitters. Since they already have provisions related to climate change mitigation, RTAs may provide an effective solution to tackle climate change.

Although many scholars are skeptical about the benefits of the free trade

³³⁸ Natassia Ciuriak and Dan Ciuriak, "Climate Change and the Trading System: Implications of the Trans-Pacific Partnership," *The International Trade Journal* 30, no. 4 (August 7, 2016): 355.

³³⁹ See Angel Hsu, "Governing by Numbers: China, Viet Nam, and Malaysia's Adaptation of the Environmental Performance Index," in *Routledge Handbook of Sustainability Indicators*, ed. Simon Bell and Stephen Morse (Routledge International Handbooks, 2018).

³⁴⁰ Viet Nam News, "TPP Commitments: Environment," *Vietnamnews.Vn*. See <https://vietnamnews.vn/environment/295069/tpp-commitments-environment.html#EheXeYIQgS9C5kKX.97>, accessed on May 14, 2016.

model,³⁴¹ closer examination shows that RTAs could contribute to climate mitigation because of the following reasons. First, the limited number of participants may accelerate the negotiating processes. Second, the reciprocity between parties allows introducing sanctions and hence enhancing compliance. Also, RTAs provide flexibility for policy experimenting through periodic. Finally, negotiations on climate-related measures under RTAs can accommodate similar negotiations at the multilateral level and become a motivation of the international climate regime. Climate pilot projects, which failed to gain the consensus under the UNFCCC, can be experimented in bilateral and plurilateral RTAs.³⁴² Climate provisions facilitated by preferential trade can lessen the conflict of interests between countries and support to achieve an international climate agreement. Therefore, it is critical to examine the probabilities of making the process of trade regionalization climate-friendly, while ensuring the compatibility with WTO law.

3.2. A preliminary review of climate change – related provisions in RTAs

In the last few decades, the inclusion of environmental provisions in Regional Trade Agreements has been rising, not only in quantity but also in the diversity of measures and level of stringency. Recent research has shown that 85 percent of the RTAs contain at least one environmental provision, of which 14 percent address

³⁴¹ Kyla Tienhaara, “NAFTA 2.0: What Are the Implications for Environmental Governance?,” *Earth System Governance*, 2019, 100004; UNCTAD, *Trade and Development Report 2018: Power, Platforms and the Free Trade Delusion, Chapter II: The Shifting Contours of Trade under Hyperglobalization*, 2018, (2018).

³⁴² Noriko Fujiwara and Christian Egenhofer, “Do Regional Integration Approaches Hold Lessons for Climate Change Regime Formation? The Case of Differentiated Integration in Europe,” in *Climate and Trade Policy: Bottom-up Approaches Towards Global Agreement*, ed. Carlo Carraro and Christian Egenhofer (Edward Elgar Publishing, 2007), 42.

climate-related issues.³⁴³ This trend supports the innovation of trade rules to facilitate mitigation targets. These provisions are usually classified into three types: general provisions on the environment (3.2.1), provisions pursuing the liberalization of climate change-related goods and services (3.2.2), and provisions on climate change-related cooperation (3.2.3).³⁴⁴

3.2.1 Provisions related to the environment in general

The first type of provisions does not mention climate change directly but has some implications. Such provision are usually used to interpret an agreement's operational provisions, to oblige the parties to commit a high level of environment protection and enforce of environmental law, or broaden the scope of Article XX of the GATT. Besides, this type specifies the relationship between an RTA and multilateral environmental agreements, such as UNFCCC, Kyoto Protocol and Paris Agreement, and includes climate commitments that its parties have adopted. However, some of these provisions are not considered to have binding effects due to their general wording on environmental protection. For examples:

Example 1-A: Japan-Brunei Economic Partnership, preamble, which may be used to interpret this agreement's operational provisions:

Recognizing that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development and that the

³⁴³ Berger Axel, Clara Brandi, and Dominique Bruhn, *Environmental Provisions in Trade Agreements: Promises at the Trade and Environment Interface*, Briefing Paper 16/2017, (German Development Institute, 2017).

³⁴⁴ See Markus W. Gehring et al., *Climate Change and Sustainable Energy Measures in Regional Trade Agreements (RTAs)* (International Centre for Trade and Sustainable Development, Geneva, 2013); Rafael Leal-Arcas, *Climate Change and International Trade* (Edward Elgar Publishing, 2013); Harro van Asselt, *Climate Change and Trade Policy Interaction*, Paris, OECD Trade and Environment Working Papers (Organisation for Economic Co-operation and Development, May 31, 2017).

economic partnership can play an important role in promoting sustainable development.

Example 1-B: CPTPP, Article 20.3.4, concerning the enforce domestic environmental laws:

No Party shall fail to effectively enforce its environmental laws through a sustained or recurring course of action or inaction in a manner affecting trade or investment between the Parties.

Example 1-C: CPTPP, Article 29.1.1, which incorporates Article XX of GATT:

For the purposes of Chapter 2 (National Treatment and Market Access for Goods), [and several other Chapters], Article XX of GATT 1994 and its interpretative notes are incorporated into and made part of this Agreement, *mutatis mutandis*.

3.2.2 Provisions promoting or facilitating trade and investment in climate change-related sectors

This type of provisions specifically encourages trade liberalization in climate-friendly goods and regulation of energy subsidies. They can focus on the elimination of non-tariff barriers through the harmonization of standards. Also, many RTAs include provisions where contracting parties state their intentions to liberalize trade in environmental goods such as products related to renewable energy.³⁴⁵

Example 2-A: The EU-Singapore Free Trade Agreement, Article 13.11.2:

The Parties shall pay special attention to facilitating the removal of obstacles to trade or investment concerning climate-friendly goods

³⁴⁵ The term “environmental goods” will be further elaborated in Section 3.4.2

and services, such as sustainable renewable energy goods and related services and energy efficient products and services, including through the adoption of policy frameworks conducive to the deployment of best available technologies and through the promotion of standards that respond to environmental and economic needs and minimize technical obstacles to trade.

Example 2-B: The EU-Singapore Free Trade Agreement, Article 13.11.3:

The Parties recognize the need to ensure that, when developing public support systems for fossil fuels, proper account is taken of the need to reduce greenhouse gas emissions and to limit distortions of trade as much as possible. While subparagraph (2)(b) of Article 12.7 (Prohibited Subsidies) does not apply to subsidies to the coal industry, the Parties share the goal of progressively reducing subsidies for fossil fuels. Such a reduction may be accompanied by measures to alleviate the social consequences associated with the transition to low carbon fuels. In addition, both Parties will actively promote the development of a sustainable and safe low-carbon economy, such as investment in renewable energies and energy efficient solutions.

3.2.3 Provisions deepening cooperation on climate change

As will be seen in the following examples, this type of provisions includes general commitments to enhance efforts to address climate change and reaffirmations of existing commitments under climate treaties. It can also provide a broad basis for cooperation on climate change and the basis for voluntary cooperation on market

mechanisms. Although these provisions are an importance indication of cooperation in climate change mitigation, they are usually non-binding.

Example 3-A: The EU-Colombia-Peru-Singapore Free Trade Agreement:

The Parties are resolved to enhance their efforts regarding climate change, which are led by developed countries, including through the promotion of domestic policies and suitable international initiatives to mitigate and to adapt to climate change, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions, and taking particularly into account the needs, circumstances, and high vulnerability to the adverse effects of climate change of those Parties which are developing countries.

Example 3-B: The CPTPP, Article 20.15.2:

... Parties shall cooperate to address matters of joint or common interest. Areas of cooperation may include, but are not limited to: energy efficiency; development of cost-effective, low emissions technologies and alternative, clean and renewable energy sources; sustainable transport and sustainable urban infrastructure development; addressing deforestation and forest degradation; emissions monitoring; market and nonmarket mechanisms; low emissions, resilient development and sharing of information and experiences in addressing this issue. Further, the Parties shall, as appropriate, engage in cooperative and capacity-building activities related to transitioning to a low emissions economy.

Example 3-C: The Japan-Mexico Economic Partnership Agreement, Article 147.1:

Cooperative activities under this Article may include: ... promotion of capacity and institutional building to foster activities related with the Clean Development Mechanism under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, as may be amended, by means of workshops and dispatch of experts, and exploration of appropriate ways to encourage the implementation of the Clean Development Mechanism projects.

3.2.4 Some observations

Existing regional trade agreements exhibit a range of provisions, which offer significant policy spaces for pursuing climate friendly measures and potentially expand their effects to future agreements. Many developed countries expressed their expectations to use trade leverage to convince other countries to negotiate climate-related provisions under RTAs.³⁴⁶ However, existing provisions in RTAs are broadly formulated and they usually indicate cooperation relating to climate change and promote renewable energy without specific references to any sources as can be seen in examples 3-A, 3-B, 3-C. These provisions also reaffirm commitments of the parties to RTAs in other forums, including climate treaties. Since they do not adopt new obligations and policies to meet certain climate goals, it is unlikely that such provisions are binding commitments to be invoked in an RTA's dispute settlement mechanism.

³⁴⁶ Recently, the government of Canada stated that its trade agreements must “fully support efforts to address climate change”. See Chrystia Freeland, Address by Foreign Affairs Minister on the modernization of the North American Free Trade Agreement (NAFTA), August 14, 2017; Since 2008, all RTAs of the EU contain climate-related provisions. See Jean-Frédéric Morin and Sikina Jinnah, “The Untapped Potential of Preferential Trade Agreements for Climate Governance,” *Environmental Politics* 27, no. 3 (May 4, 2018): 557.

In addition, some argue that the contribution of existing RTAs to global climate governance is limited because they contain no comprehensive climate-related provisions with robust enforcement mechanisms.³⁴⁷ Although major economies including the U.S, EU, Japan, and China concluded RTAs with climate-related provisions, some significant GHG emitters have failed to address climate change in their RTAs.³⁴⁸ But, such trends have been changed substantially over time,³⁴⁹ and the level of stringency of climate-related provisions have improved with binding commitments rather than encouraging statements.³⁵⁰ Also, the number of RTAs comprising climate-related provisions will evolve with more leadership roles of emerging economies due to the demand for green energy and the concern of carbon leakage.³⁵¹

³⁴⁷ This study is conducted based on the examination of 688 RTAs signed between 1947 and 2016. The number of RTAs including climate-related provisions is relatively small, accounted for only 14 percent, compared to 86 percent of those addressing environment. So far, only agreements concluded by the U.S have dispute settlement mechanisms that comprise enforceable provisions with sanction-based measures although their levels of obligation are low. In contrast, the European agreements mostly apply for dispute settlement by consultation. Morin and Jinnah, “The Untapped Potential of Preferential Trade Agreements for Climate Governance,” 551–53.

³⁴⁸ There are nearly 50 states, which are large emitters and oil producers such as Saudi Arabia, Brazil, Venezuela, and Iran, exclude the conclusion of climate commitments within their trade negotiations. *Ibid.* at 559.

³⁴⁹ Stéphanie Monjon and Philippe Quirion, “How to Design a Border Adjustment for the European Union Emissions Trading System?,” *Energy Policy*, Special Section on Carbon Emissions and Carbon Management in Cities with Regular Papers, 38, no. 9 (September 1, 2010): 553.

³⁵⁰ For instance, in the early 1990s, the language of climate-related provisions was vague and inadequately enforceable, such as the 1992 Framework Agreement on Enhancing Association of Southeast Asia Nation Economic Cooperation that called on its parties to collaborate on “energy efficiency” (Article 2(B)(3)). Later in the 2010s, the more precise commitments on climate change are witnessed. The Korea-U.S FTA in 2011 provides that: “from 2012 to 2015, a manufacturer that sold up to 4500 motor vehicles in the territory of Korea in calendar year 2009 shall be deemed to comply with the target level set forth in the regulations if either the average fuel economy or the average CO2 emissions level for the vehicles the manufacturer sold in the territory of Korea during the relevant calendar year meets a target level that is 19 percent more lenient than the relevant target level provided in the regulation that would otherwise be applicable to that manufacturer.” (Section 1, Agreed Minutes)

³⁵¹ Rafael Leal-Arcas, Costantino Grasso, and Juan Alemany Ríos, “Multilateral, Regional and Bilateral Energy Trade Governance,” *Renewable Energy L. & Pol’y Rev.* 6 (2015): 38; Joanna I Lewis, “The Rise of Renewable Energy Protectionism: Emerging Trade Conflicts and Implications for Low Carbon Development,” *Global Environmental Politics* 14, no. 4 (2014): 10–35.

Comparing to the conclusion of a global climate agreement, regional approaches seem more realistic. With the advantage of a small group of countries with close interests, an RTA can contain environmental provisions regarding climate change mitigation. The question is how to conclude RTAs with strong climate-related provisions that can achieve both trade liberalization and climate change goal. Thus, a proper model of climate-provisions in RTAs is demanding.

3.3. Legal issues of Border Carbon Adjustments-related provisions in Regional Trade Agreements

The question of whether a party to an Regional Trade Agreement may take measures that are not fully consistent with the WTO Agreement need to be addressed. Under Article XXIV of the GATT 1994, RTAs must fulfill “external requirements” and “internal requirements.” Practically, however, each of these requirements is ambiguous and raises a politically sensitive issue.³⁵²

3.3.1 External requirement

Article XXIV of the GATT provides the formation of two types of regional trade agreements with the different level of economic integration, including free trade agreement (FTAs) and custom unions (CUs), and sets out certain “external requirements” for their formation, Article XXIV:5 provides as follows:

Article XXIV:5(a) articulates the requirement for a CU:

(a) with respect to a custom union, ... the duties and *other regulations of commerce* imposed ... in respect of trade with

³⁵² Petros C. Mavroides, “If I Don’t Do It, Somebody Else Will (or Won’t): Testing the Compliance of Preferential Trade Agreements with the Multilateral Rules,” *Journal of World Trade* 40(1) (2006): 187, http://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.kluwer/jwt0040§ion=13.

contracting parties not parties to such union ... shall not *on the whole* be higher or more restrictive than the general incidence of the duties and regulations of commerce applicable in the constituent territories prior to the formation of such union ... (emphasis added)

(b) with respect to a free trade area, ... the duties and *other regulations of commerce* maintained in each of the constituent territories and applicable ... to the trade of contracting parties not included to such area ... shall not be higher or more restrictive than the corresponding duties and *other regulations of commerce* existing in the same constituent territories prior to the formation of the free-trade area ... (emphasis added)

A question might be posed about whether the terms “on the whole” and “other regulations of commerce” cover all trade barriers including internal regulations, rules of origin and other possible trade restrictions. Although these terms have not been interpreted by panels and the Appellate Body,³⁵³ they will not affect the adoption of BCAs under Regional Trade Agreements because their trade-restrictions only apply to GHG emissions-intensive products between contracting parties to an FTA or a CU and do not apply to third parties. Therefore, the trade-restrictions that contracting parties to RTAs with BCAs-related provisions accord to non-parties the formation of such RTAs will not be different.

A formation of FTAs and CUs between WTO Members and non-Members may raise an issue regarding the phrase “as between the territories of contracting parties” in the chapeau of Article XXIV:5. Commentators interpret this phrase to mean that Article XXIV provides preferential trade agreements among only WTO Members and that, if a

³⁵³ Ibid. at 199.

non-Member is included, the requirement of a two-thirds majority of all WTO Members need to be fulfilled under Article XXIV:10 of the GATT.³⁵⁴ Because some countries which are large GHG emitters such as Iran and Algeria are not WTO Members, including such countries in RTAs may trigger a violation of Article XXIV:5. However, some preferential trade agreements have actually been concluded with non-WTO Members without receiving objection from other WTO Members.³⁵⁵

3.3.2 Internal requirements

Regional trade agreements also need to meet “internal requirements” under Article XXIV:8 of the GATT: “[T]he duties and *other restrictive regulations of commerce* ... are eliminated on *substantially all the trade* between the constituent territories in products originating in such territories” (emphasis added). The Appellate Body in *Turkey-Textile (1999)* stated that this requirement includes not only quantitative but also qualitative measurement.³⁵⁶ In regard to how measurement should actually be made, opinions about the percentage of trade to be liberalized and the number of sectors to liberalization vary, such as 80 percent, 90 percent, and even 95 percent,³⁵⁷ and this issue has not been settled to date. The inclusion of BCAs,

³⁵⁴ Youri Devuyt and Asja Serdarevic, “The World Trade Organization and Regional Trade Agreements: Bridging the Constitutional Credibility Gap,” *Duke J. Comp. & Int’l L.* 18 (2007–2008): 21.

³⁵⁵ Examples are Association Agreements between the European Economic Community (EEC) and Maghreb countries (Tunisia, Morocco, and Algeria) in 1982 and the Common Economic Zone between Russia, Ukraine, Belarus and Kazakhstan in 2004. Currently, there are only 12 countries who are not willing to be a Member of WTO including Eritrea, Kiribati, Marshall Islands, Micronesia, Monaco, Nauru, North Korea, Palau, San Marino, Somalia, South Sudan, Turkmenistan, and Tuvalu with a limited share of international trade. Even Iran and Algeria have already become observers of the WTO. See https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm, accessed on 15 January 2019.

³⁵⁶ Turkey - Restrictions on Imports of Textile and Clothing Products, WT/DS34/AB/R, para.49 (WTO Appellate Body Report October 22, 1999).

³⁵⁷ The lowest percentage of the total liberalized has been accepted is 80%. See Thomas Cottier and Marina Foltea, “Constitutional Functions of the WTO and Regional Trade Agreements,” in *Regional Trade Agreements and the WTO Legal System*, ed. Lorand Bartels and Federico Ortino (Oxford University Press, 2006), 49.

trade-restrictive measures, in RTAs would raise the concern, from the standpoint of the phrase “on substantially all the trade,” about whether BCAs could fall outside the liberalization limit.

Even when BCAs are deemed as trade restrictions within Article XXIV:8 and exceed the permissible volume of trade in terms of the requirement of liberalization, they can still be justified under Article XX. The Appellate Body in *Brazil-Retreaded Tyres* interpreted it as follows:

[W]e note that Article XXIV:8(a) of the GATT 1994 exempts, *where necessary, measures permitted under Article XX* from the obligation to eliminate “*duties and other restrictive regulations of commerce*” with respect to “*substantially all the trade*” ... if we assume ... MERCOSUR is consistent with Article XXIV and that the Import Ban meets the requirements of Article XX, this measure, where necessary, could be exempted by virtue of Article XXIV:8(a) from the obligation to eliminate other restrictive regulations of commerce within a customs union.³⁵⁸ (emphasis added)

However, this scenario leads the issue back to the problematic arguments of the defense of BCAs under Article XX of the GATT as discussed in the Chapter 2. It should also be noted that, under Article XXIV, the formation of RTAs is considered to be an exemption from the MFN obligation but the Appellate Body in *Turkey-Textiles (1999)* put forward a broader view of the issue:

[O]n the basis of this analysis of the text and the context of the chapeau of paragraph 5 of Article XXIV, we are of the view that

³⁵⁸ Brazil - Measures Affecting Imports of Retreaded Tyres, WT/DS332/AB/R, para.234, Footnote 445 (WTO Appellate Body Report December 3, 2007).

Article XXIV may justify a measure which is inconsistent with certain other GATT provisions. However, in a case involving the formation of a customs union, this “defence” is available only when two conditions are fulfilled. First, the party claiming the benefit of this defence must demonstrate that the measure at issue is introduced upon the formation of a customs union that fully meets the requirements of sub-paragraphs 8(a) and 5(a) of Article XXIV. And, second, that party must demonstrate that the formation of that customs union would be prevented if it were not allowed to introduce the measure at issue. Again, both these conditions must be met to have the benefit of the defence under Article XXIV.³⁵⁹ (emphasis added)

However, this view of the Appellate Body should not be oversimplified so that it could undermine the WTO principles. Respecting to the second condition laid down in this ruling, the measure at issue must be an absolute prerequisite for the formation of the RTA.³⁶⁰ Therefore, an RTA with the use of BCAs has to be compliant with all WTO rules, except for the MFN, unless it would be proven that without such measures the formation of the agreement is unfeasible. It is hardly possible for BCAs to defend the violation GATT rule, such as National Treatment of Article III of the GATT, under an FTA or a CU, but such violation need to recourse to the justifications under Article XX of the GATT.

³⁵⁹ Turkey - Restrictions on Imports of Textile and Clothing Products, WT/DS34/AB/R, para.58 (WTO Appellate Body Report October 22, 1999).

³⁶⁰ Holzer, *Carbon-Related Border Adjustment and WTO Law*, 2014, 285.

3.3.3 Probability of a Challenge in the WTO Dispute Settlement Mechanism

A main question regarding the inclusion of Border Carbon Adjustments within Regional Trade Agreements is whether there is a probability that such measures will be challenged in the WTO dispute settlement mechanism. Under WTO law, the compatibility of RTAs may be examined either, multilaterally by the Committee on Regional Trade Agreements (CRTA) or bilaterally, under the dispute settlement mechanism.³⁶¹ These procedures can be initiated at the same time and thus their outcomes may be inconsistent with one another.³⁶² In any event, commentators suggest that the examination by CRTA is unlikely.³⁶³ Because the procedure of CRTA is based on the consensus of all WTO Members including the parties to the objected RTA, an RTA would rarely be objected even if it contains WTO-inconsistent provisions.³⁶⁴ In effect, CRTA has not made any examination due to lack of consensus among the WTO Members.³⁶⁵

Similarly, WTO Members have not often invoked the dispute settlement mechanism against RTAs of other Members due to the lack of incentive and political reasons. In rare cases that concern RTAs, panels and the Appellate Body avoided to definitely decide on the compatibility of RTAs with WTO law. Although the Appellate Body in *Turkey-Textiles (1999)*, for instance, endorsed the panel's competence to pass rulings on the compliance of RTAs with Article XXIV of the GATT, it did not decide

³⁶¹ Mavroides, "If I Don't Do It, Somebody Else Will (or Won't): Testing the Compliance of Preferential Trade Agreements with the Multilateral Rules," 192ff.

³⁶² Ibid. at 195–96.

³⁶³ Devuyt and Serdarevic, "The World Trade Organization and Regional Trade Agreements"; and Kessie, "The World Trade Organization and Regional Trade Agreements."

³⁶⁴ Kessie, "The World Trade Organization and Regional Trade Agreements," 53.

³⁶⁵ WTO, "Regional Trade Agreements - the WTO Committee (CRTA)." See https://www.wto.org/english/tratop_e/region_e/regcom_e.htm, accessed on June 21, 2019.

the matter on the merits.³⁶⁶

Although the examination of an RTA's compatibility by the CRTA or under the dispute settlement mechanism is unlikely, the possibility of such challenge exists. Thus, it may be helpful to consider the motivation of a WTO Member to complain about BCAs in RTAs. A non-party to an RTA may bring a claim against such BCAs under the RTA before the WTO Dispute Settlement Body if it considers its rights are impaired as a result of the implementation of such BCAs.³⁶⁷ In the case of a FTA-type RTA, in which the trade policies of each party toward non-parties are separate, it is unlikely that non-parties will face adverse effects by trade restrictions under that FTA. Besides, when imposing BCAs, suppliers with high emission rates may increase their exports to non-parties to the RTA where the carbon price is lower and this could make imports from non-parties more affordable.³⁶⁸ Consequently, the chance for a challenge by a non-party to an RTA against BCAs-related provisions is low.

In the case of a CU-type RTA, whether there is an impairment to the interests of third countries might matter if that CU contains BCAs-related provisions. The formation of a CU with a common external trade and tariffs may raise trade barriers of a member to the third parties higher than before. Then Article XXIV:6 of the GATT may apply which requires that compensation shall be made for affected third countries

³⁶⁶ Turkey - Restrictions on Imports of Textile and Clothing Products, WT/DS34/AB/R, para.60 (WTO Appellate Body Report October 22, 1999).

³⁶⁷ On the other hand, it is inconceivable that one party to the RTA brings a claim against another party about BCA-related provisions in the RTA. Even if one party breaks a rule in the RTA, the other party can bring the claim to the dispute settlement mechanism of that RTA. Thus, the possibility that an RTA's party brings a claim about BCAs to the WTO dispute settlement system is virtually zero.

³⁶⁸ ICTSD, "Competitiveness and Climate Policies: Is There a Case for Restrictive Unilateral Trade Measures?," *ICTSD Information Note* No.16 (2009): 13, <https://www.ictsd.org/sites/default/files/research/2012/03/competitiveness-and-climate-policies-is-there-a-case-for-restrictive-unilateral-trade-measures.pdf>.

before the CU entries into force under the regulation of Article XXVIII.³⁶⁹ However, there are only thirteen CUs out of 288 RTAs notified to the WTO to date,³⁷⁰ and major GHG emitters including the U.S, the EU, China, India, Russia, and Brazil are unlikely to form a CU with one another. Furthermore, Mavroidis addresses a number of reasons that prevent WTO Members to initiate a legal claim against other Members forming RTAs.³⁷¹ Firstly, interpretations by panels and the Appellate Body regarding RTAs may be invoked against a Member with its own RTAs in the future. Second, more apparently, with political sensitiveness of regional and bilateral economic integrations, WTO Members may choose a non-performance against a violation of Article XXIV in the expectation that other Members will enact the same with their failure.³⁷²

The adoption of Border Carbon Adjustments in RTAs seems to be a viable option which enables WTO Members to take trade-restrictive measures which prevent carbon leakage under their climate change regime. The probability that BCAs in RTAs are challenged is lower than unilateral climate policies discussed in the previous chapter. However, as will be examined in 3.5, this option does not entirely solve the issue.

3.4. Proposals for implementing Border Carbon Adjustments through Regional Trade Agreements

The central question for implementing Border Carbon Adjustment under RTAs is how to design climate clubs with strong climate-related provisions as well as

³⁶⁹ Devuyt and Serdarevic, “The World Trade Organization and Regional Trade Agreements,” 40–41.

³⁷⁰ WTO, “Regional Trade Agreements Gateway.” See https://www.wto.org/english/tratop_e/region_e/region_e.htm#facts, accessed on June 21, 2019.

³⁷¹ Mavroides, “If I Don’t Do It, Somebody Else Will (or Won’t): Testing the Compliance of Preferential Trade Agreements with the Multilateral Rules,” 209–10.

³⁷² Ibid. at 209.

sustainable performance. As some scholars argue, stable coalitions with substantial emissions reduction have to offer benefits for members and punishment for non-compliance at the same time.³⁷³ Therefore, there are two characteristics for the formation of a successful climate clubs within RTAs: (i) benefits for membership that can surpass obligations through trade preference; and (ii) enforcement mechanisms without violating WTO law through protective devices.

Based on such ideas, the following sections proposes two types of climate-related negotiation which should be adopted in RTAs: trade preferences towards low carbon-intensive products (3.4.1) and protective devices to offset trade deflection (3.4.2).

3.4.1 Trade preferences towards low carbon-intensive production

A fundamental question concerning the incorporation of climate-related provisions, particularly Border Carbon Adjustments, in a Regional Trade Agreement is how to convince parties to this agreement to start negotiation. While BCAs can be seen as an enforcement mechanism for climate change mitigation, RTAs have to comprise strong incentives that could outweigh such obligations on contracting parties. The following sections discuss policy options in trade governance that could enhance negotiations in the context of climate change.

3.4.1.1 Incentives for participation in regional trade agreements with climate-related provisions

A small start with an opened door to multilateralism

Before the WTO established as a multilateral trade organization in 1995, its

³⁷³ Rafael Leal-Arcas, “New Frontiers of International Economic Law: The Quest for Sustainable Development,” *U. Pa. J. Int’l L.* 40 (2018–2019): 124.

first trade agreement, the GATT, had been successfully negotiated by 23 contracting parties with close interests. Many scholars suggest that this may be useful as a model for the development of climate change regime.³⁷⁴ Thus, the negotiation of RTAs with climate-related provisions should start with a limited membership including large GHG emitters whose participations are vital to push the climate commitments forward. Besides, negotiation on climate change within RTAs should concern only limited issues such as carbon markets with Emission Trading Systems, critical pollutants, or specific climate-friendly technologies rather than global climate threats. Such negotiation can make a new platform of climate cooperation efficient and manageable.³⁷⁵ Likewise, BCAs-related negotiations between contracting parties to an RTA should start with the issue of a mutual acceptance such as a single ETS for the region or recognition of emissions allowances on national ETSs of each country. BCAs would become an enforcement mechanism or an incentive for contracting parties to adopt such climate legislation.

While such negotiations under RTAs may be beneficial, scaling up such commitments in multilateral level is also desirable because the free riding of non-participants could lead the cooperation on climate change mitigation and BCAs to a zero-sum outcome.³⁷⁶ Some authors suggest that multilateralizing climate change

³⁷⁴ Robert A. Reinstein, "A Possible Way Forward on Climate Change," *Mitigation and Adaptation Strategies for Global Change* 9, no. 3 (July 1, 2004): 245–309; William Antholis, "Five" Gs": Lessons from World Trade for Governing Global Climate Change," in *Brookings Trade Forum*, vol. 2008 (Brookings Institution Press, 2009), 121–138; Victor, *Global Warming Gridlock*.

³⁷⁵ For example, the costs for cooperation between limited countries on research and development related to climate-friendly technologies are more efficient than the involvement of critical mass of participants. See David G. Victor, Charles F. Kennel, and Veerabhadran Ramanathan, "The Climate Threat We Can Beat: What It Is and How to Deal with It Essay," *Foreign Aff.* 91 (2012): 112–21.

³⁷⁶ For a desire for multilateralizing climate commitments. See N. Keohane, A. Peterson, and A. Hanafi, "Toward a Club of Carbon Markets," *Climatic Change* 144, no. 1 (September 1, 2017): 81–95; For an examination of free riding in climate change. See Robert O. Keohane and David G. Victor, "The Regime Complex for Climate Change," *Perspectives on Politics* 9, no. 1 (2011): 14.

commitments could be attained by the unilateral imposition of climate-related measures to non-contracting parties to RTAs or the inclusion of such measures in other RTAs.³⁷⁷ The multilateralization of climate-related provisions under RTAs could also benefit the international climate change regime. Contracting parties would link their commitments to the UNFCCC in terms of climate technology cooperation,³⁷⁸ or the Paris Agreement in terms of carbon markets.³⁷⁹

Climate-related negotiations within a broad range of economic partnerships

For a successful negotiation, provisions on climate-related measures including BCAs, should be part of a comprehensive agreement on economic cooperation including trade, investment, intellectual properties, government procurement, and other related issues. Then, even when a party to an RTA loses its interests in some provisions, other provisions may provide different benefits. Practically, such arrangement may occur under North-South type RTAs where developing countries are likely to make concessions to their regulatory legislation in the environmental policy in exchange for benefits from market access.³⁸⁰ Furthermore, commentators show that negotiation of

³⁷⁷ However, those suggestions are limited in case contracting parties have significant market powers such as the U.S, the EU and Japan. See Kateryna Holzer and Thomas Cottier, “Addressing Climate Change under Preferential Trade Agreements: Towards Alignment of Carbon Standards under the Transatlantic Trade and Investment Partnership,” *Global Environmental Change* 35 (November 2015): 514–22.

³⁷⁸ The UNFCCC issued its Technology Mechanism in 2010 to mandate the establishment of “cooperation with relevant international technology initiatives, stakeholders and organizations, and to promote coherent and cooperation across various technology activities both within and outside UNFCCC.” (para.121(f) of the Decision 1/CP.21 of the UNFCCC)

³⁷⁹ RTAs concentrated on carbon markets will have interactions with the market mechanisms developing under the Paris Agreement.

³⁸⁰ In 2004, during the negotiations on market access for Russia’s accession to the WTO, the EU only accepted for a bilateral protocol only upon Russia’s ratification of the Kyoto Protocol and its clear commitments to environmental and energy services. As a result, Russia committed to increasing its energy prices in order to promote efficient uses of natural resources. See Aaron Cosbey et al., “The Rush to Regionalism: Sustainable Development and Regional/Bilateral Approaches to Trade and Investment Liberalization,” *International Institute for Sustainable Development*, 2004, 28–29; and Barbara Buchner

trade-related provisions under RTAs is often begun from non-commercial objectives and the conclusion of an RTA is more likely a political process.³⁸¹

Concerning trade benefits that a contracting party could receive for the sake of its concessions on climate change issues, various options from the multilateral trade negotiation in the WTO could be inferred by RTAs contracting parties, such as increased market access or reductions in domestic support measures in the agriculture sector as mentioned in the Doha Round.³⁸² Also, developed countries can provide special and differential treatments, similarly to those that are allowed under WTO Agreements,³⁸³ to incentivize developing countries with global GHG emissions regime. Countries which fail to take robust actions in climate change mitigation would not receive trade preferences under this mechanism provided by the EU and other developed countries.³⁸⁴

Linkage to development priorities

The negotiation of climate-related provisions under RTAs should also consider the connection between these rules and national development priorities including

and Silvia Dall'Olio, "Russia and the Kyoto Protocol: The Long Road to Ratification," *Transition Stud Rev* 12, no. 2 (September 1, 2005): 354.

³⁸¹ Devuyst and Serdarevic, "The World Trade Organization and Regional Trade Agreements," 58.

³⁸² Mark Houdashelt et al., "Trade Incentives Role in Encouraging Greater Participation in a Post-2012 Climate Agreement," *Draft Report, Center for Clean Air Policy, June, 2007, 2*, http://ccap.org/assets/Trade-Incentives-Role-in-Encouraging-Greater-Participation-in-a-Post-2012-Climate-Agreement_CCAP-June-2007.pdf.

³⁸³ The GSP is adopted in the "Decision on Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries" of Enabling Clause under GATT in 1979. See https://www.wto.org/english/tratop_e/devel_e/dev_special_differential_provisions_e.htm (accesses on 13 May 2019).

³⁸⁴ In practice, the EU used trade preferences under GSP as awards to promote developing countries fighting with drug production and trafficking or for observing labour rights under conventions of the International Labour Organization. See <http://ec.europa.eu/trade/policy/countries-and-regions/development/generalised-scheme-of-preferences/> (accessed on 13 May 2019).

pollution reduction, job creation, public health so forth.³⁸⁵ Developing countries, especially emerging economies such as China or Viet Nam, are facing severe issues concerning industrial pollution that threatens their sustainable development and contributes to climate change.³⁸⁶ Therefore, those countries could likely be convinced to accept BCAs in regional trade negotiations by appealing to the need to restrict pollution. Both developed and developing countries have common interests in collaboration, particularly in the area of energy and environment. Therefore, the negotiation on BCAs-related provisions should be argued in a way that the imposition of such measures on carbon-intensive products could enhance their producers to cut emissions on the one hand and reduce the adverse effects of industrial pollution on the other.

Technical assistance and climate-friendly investment

Another incentive in regional negotiations may be the technical assistance and investment in climate-friendly technologies from developed countries to developing countries in forms of carbon capture, storage facilities, energy-efficiency technologies, and renewable energy. The success of such a partnership would support not only environmental and economic benefits for developing countries but also economic benefits for clean-technology producers in developed countries.

Since the developing countries tend to perceive that environmental provisions under RTAs cause a threat to their economic development goals, a commitment by developed country partners to grant technical assistance for capacity building can

³⁸⁵ Todd Stern and William Antholis, "A Changing Climate: The Road Ahead for the United States," *The Washington Quarterly* 31, no. 1 (January 1, 2008): 182.

³⁸⁶ Arthur P.J. Mol, "Environmental Governance through Information: China and Vietnam," *Singapore Journal of Tropical Geography* 30, no. 1 (March 1, 2009): 114–29.

significantly alleviate developing countries' resistance to these provisions.³⁸⁷ Practically, this approach proved its effectiveness to deal with ozone-depleting substances by the availability of new technologies from developed countries despite the opposition of developing countries at the beginning.³⁸⁸

3.4.1.2 Promoting climate-friendly products

This type of preferences provides incentives on market access towards low carbon-intensive products, new technologies, and inputs to climate-friendly processes being used to stimulate trade (and hence consumption) in products. This type enable the parties to contribute directly to emission reduction through changed trade patterns.

Negotiation of Environmental Goods

Trade preferences on environmental goods can be an effectiveness means for mitigating climate change. It can further promote the liberalization through trade agreements including environmental goods in contracting parties' commitments on market access.³⁸⁹ Although some authors expressed concern because many products can be used for both environmental and non-environmental purposes, the inclusion of environmental goods in RTAs can make a significant contribution. This approach

³⁸⁷ OECD, "Processes and Production Methods (PPMs): Conceptual Framework and Considerations on Use of PPM-Based Trade Measures," 162.

³⁸⁸ Keohane and Victor, "The Regime Complex for Climate Change," 11–13.

³⁸⁹ There is no official definition of "environmental goods" regarding complexities in this sector. See Rene Vossenaar, "Reducing Import Tariffs for Environmental Goods: The APEC Experience," *International Centre for Trade and Sustainable Development, Geneva, Switzerland* 22, no. Issue Paper No.22 (2016); This term encompasses products used "to measure, prevent, limit, minimize or correct environmental damage to water, air and soil, as well as problems related waste, noise and eco-systems." See Organisation de coopération et de développement économiques, *The Environmental Goods and Services Industry: Manual for Data Collection and Analysis* (OECD, 1999); Therefore, environmental goods may include all those products related to clean-technologies, energy efficiency, pollution control, among others. See Hanna Bucher et al., "Trade in Environmental Goods and Services: Opportunities and Challenges," *International Trade Centre Technical Paper, Geneva*, 2004; In addition, it might include low-carbon products for final consumption as well as inputs to production. See Yan Dong and John Whalley, "Carbon, Trade Policy and Carbon Free Trade Areas," *The World Economy* 33, no. 9 (September 1, 2010): 1073–94.

enables the parties to RTAs to contribute directly to the reduction of GHG emissions through a change in the arrangement of trade negotiations among them. The preference for environmental goods also encourages both consumption and production switching towards low emission products. However, the initiation of such endeavor requires a change in complicated rules of origin, which will be discussed later.

Carbon-related tariff rates less than Most-Favoured-Nation rates on carbon-intensive products

A feasible way of implementing Border Carbon Adjustments under Regional Trade Agreements is the application of tariff rates that are less than MFN rates. Traditionally, parties to RTAs expected the elimination of tariffs on their industrial products regardless of environmental and competitive concerns. Imposing tariff at less than MFN rates could improve the current state of affairs respecting a carbon-pricing perspective especially products from energy-intensive and trade-exposed industries such as cement, steel, aluminum, fossil fuels-generated electricity.³⁹⁰

Setting the BCAs rates below MFN levels of RTAs that qualifies the requirement of liberalization under Article XXIV:8 known as “the substantially all the trade” of the GATT would accommodate legal certainty because it does not burden the trade restriction more than what the parties negotiated. This option is the most practicable in the short-term. However, the MFN rates of WTO Members for carbon-intensive products such as steel are already low.³⁹¹ Therefore, applying this

³⁹⁰ Targeting energy-intensive and trade-exposed industries (EITE) with BCAs in the context of climate change mitigation is gaining more intentions from countries around the world. See an example of a proposal for a US GHG tax in Brian Flannery et al., *Framework Proposal for a US Upstream Greenhouse Gas Tax with WTO-Compliant Border Adjustments*, SSRN Scholarly Paper ID 3148213, Resources for the Future Report (2018), (Georgetown University Law Center, March 1, 2018).

³⁹¹ For instance, the tariff rates of the EU on raw steel is lower than 2%, and on steel products is not higher than 12%. Data collected from <http://madb.europa.eu/madb/euTariffs.htm>, accessed on 20 January 2019.

option solely does not warrant the full attainment of balancing the competitiveness and mitigating climate change.

Rule of origin

Regional Trade Agreements, especially Free Trade Agreements, usually contain rules of origin. Their primary purpose is to prevent the diversion of trade flow when non-parties attempt to transfer their products to a party's territory with low tariff rates and take advantage of the RTA in order to bring their products to another contracting party with high tariff rates. BCAs may cause rerouting of trade flow if these measures apply only to a limited number of countries. Respecting the implications of rules of origin regarding BCAs, the Agreement on Rules of Origin only provides general principles as compared with detailed provisions in most RTAs.³⁹² Thus, WTO Members have a wide discretion in designing rules of origin in RTAs. Due to the complexity of the characteristics of each type of product during the process and production relating to GHG emission. This approach requires further analysis and researches in the future.

3.4.2 Protective devices to offset trade deflection

Another type of climate-provisions would go farther and focuses on the anti-competitive effects that harm domestic producers when contracting parties to RTAs fail to comply with joint commitments on emission reduction because such failure could generate carbon leakage.³⁹³

3.4.2.1 Considerations for the compliance with WTO rules

As discussed in 1.4, Border Carbon Adjustments would be applied to imported

³⁹² WTO, "Trade Topics - Rules of Origin Gateway." See https://www.wto.org/english/tratop_e/roi_e/roi_e.htm, accessed June 21, 2019.

³⁹³ In regard of the issue of carbon leakage, refer to Section 1.4.

products in a way that reflects the cost of emissions reduction if they were produced in the market of the importing country. However, the crucial question is how to ensure such measures would not violate WTO rules. Although the formation of RTAs under Article XXIV of GATT is an exception of the most-favoured-nation treatment, the implementation of BCAs under such RTAs still need to comply with other WTO rules. The following sections discuss various options to provide BCAs under RTAs.

The inclusion of imported products in a national emissions trading system

The requirement for importers to rebate allowances for emissions comparable to the amount of the emissions produced during the production process is discussed in many proposals concerning BCAs as be seen in 2.1. Under this type of BCAs, usually called “international reverse allowances,” imports would correspond to similar requirements for domestic producers. When a country comprises imports in its emission trade scheme (ETS) by requiring the surrender of emissions allowances, this measure can qualify as “an internal measure” in the border adjustment scheme. As examined in 2.4, the WTO compliance of this type of BCA depends mostly on whether it can pass the likeness and the national treatment test under Article III:4 of the GATT.

An analysis of rulings of WTO panels and Appellate Body shows that the traditional approach to likeness would be impossible to determine the difference between products based on non-product-related PPMs.³⁹⁴ Accordingly, carbon-intensive products and carbon-efficient products would be “like” to the extent that they share the same physical characteristics, end-uses, consumer preferences, and tariffs classification. Thus, BCAs in forms of emissions allowance requirements would violate the national treatment principle under Article III:4 in case of such measures accord treatment to imported products less favorable than that applied to like domestic

³⁹⁴ See Section 2.4

products. Thus, BCAs should take into account origin-neutral factors concerning their detrimental effects on imports and their sufficient flexibility for foreign producers' compliance.

Border adjustment of a carbon tax on importation

Contracting parties to an RTA with a carbon tax regime on domestic products would equalize emissions costs at the border by introducing a price-based BCAs on imports. Similar to an importer allowance requirement, a carbon tax on imports associated with the carbon footprint of products is a PPM measure and also faces legal uncertainty. However, since this measure is perceived to be a fiscal measure, its adjustment on imports seems to fit into the traditional model of border adjustments on consumption taxes, such as VAT and excise duties.

The application of a price-based BCA to imports is subject to Article III:2 of GATT as analyzed in 2.4.3.1 and 2.4.3.2. The test under the first sentence of this article requires that the tax applied to imports should not exceed the tax imposed on like domestic products. The assessment based on the impact approach to compare the tax treatment of like products would lead to discrimination against imported products if the measure is applied to the carbon footprint of products. The test under Article III:2, second sentence, applies to BCAs if carbon-intensive and carbon-effective products are found to be directly competitive or substitutable and this test requires a carbon tax have to be applied so as not to afford protection to domestic production. Such examination focuses on the impact of a measure on the competitive relationship between products. The national treatment test under Article III:2, second sentence, has commonalities with the "no less favourable treatment" test under Article III:4 that was discussed previously.

Justification under Article XX of GATT

As analyzed in 2.5, whether BCAs which are incompatible with the WTO rules including the national treatment principle can be justified under Article XX of GATT largely depends on the possibility of a measure to satisfy the condition of the chapeau of the article. Concerning the coverage of a BCA scheme on imports, a contracting party to an RTA should take into account conditions of other contracting parties. Such a measure should be flexible enough to treat more favorably imports from contracting parties which make emission reduction efforts in any form and to allow for the differentiated regulatory treatment depending on a country's level of economic development. It should also recognize the rights and obligations of an exporting country under the UNFCCC or a future climate agreement.

Carbon-intensity standards applied to imports

As discussed in 2.6, emissions-intensity standards that apply to imports mainly relate to obligations under the TBT Agreement, especially the Article 2.2 and 2.4.

Compliance of a carbon-intensity standard with Article 2.2 of the TBT Agreement

Article 2.2 of the TBT Agreement provides that an emissions-intensity standard “shall not be more trade-restrictive than necessary to fulfill a legitimate objective” and the list of legitimate objectives is also provided therein. The requirement is similar to that of the necessity test under the chapeau of Article XX of GATT. However, unlike Article XX, the burden of proof under the TBT Agreement lies with the complainant, rather than the respondent³⁹⁵ and the list of legitimate objectives is not exhaustive but only illustrative.³⁹⁶ Thus, WTO panels and the Appellate Body would use the available

³⁹⁵ United States - Measures Affecting the Production and Sale of Clove Cigarettes, WT/DS406/R, para.7.364 (WTO Panel Report September 2, 2011).

³⁹⁶ Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes,” 22.

facts to determine the objective pursued by a measure and whether it is legitimate.³⁹⁷

Article 2.2 also contains, as Article XX of GATT, the standard of assessment about the trade-restrictiveness or the measure's contribution to the achievement of a legitimate objective and the nature and gravity of risks associated with non-fulfillment of the objectives.³⁹⁸ The assessment of these factors requires a comparison between the measure at issue and possible alternative measures.³⁹⁹ Consequently, whether the application of a carbon-intensity standard satisfies this provision depends mostly on its design. The measure has to be flexible enough not to restrict market access solely on the ground of non-compliance and to accept alternatives, such as the surrender of emissions allowances.

The relevance of international standard

As examined in 2.6.4, the application of carbon-intensive standards to imports would also raise the question concerning international standards.⁴⁰⁰ According to Article 2.5 of the TBT Agreement, a technical regulation which is in accordance with international standard shall be "reputably presumed not to create an unnecessary obstacle to international trade," and hence is presumed to comply with Article 2.2.⁴⁰¹ Currently, there are no carbon-intensive standards but existing international bodies could potentially develop them.⁴⁰²

³⁹⁷ United States - Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Product, WT/DS381/AB/R, para.314 (WTO Appellate Body Report May 16, 2012).

³⁹⁸ *Ibid.*, para.318,322.

³⁹⁹ *Ibid.*, para.322.

⁴⁰⁰ Pursuant to TBT Art. 2.4, if an international standard exists, a WTO Member must base its national standard on it unless the international standard "would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued, for instance because of fundamental climate or geographical factors or fundamental technological problems."

⁴⁰¹ Hufbauer, Charnovitz, and Kim, *Global Warming and the World Trading System*, 2009, 72.

⁴⁰² For instance, the International Organization for Standardization (ISO) with its ISO 14044 rules for the assessment of life cycle emissions, which might work as relevant international guidelines for setting national carbon-intensity standards. If an international climate agreement could be characterized by

Notably, an international standard under the TBT Agreement is not necessarily limited to that which was adopted by consensus.⁴⁰³ Thus, it can be argued that climate policy standards adopted by climate clubs under RTAs, could be relevant international standards for carbon-related technical regulations.⁴⁰⁴ The standards on emission intensity based on the emission intensity norms agreed to by the contracting parties to an RTA would be reliably considered to comply with the TBT Agreement.⁴⁰⁵ However, such an agreement should be available for the participation of other WTO Members.⁴⁰⁶

Carbon labeling requirements for imports

As mentioned in 1.4.3, requirements for carbon-labeling can be part of domestic emissions reduction systems. Such a measure can complement or facilitate the operation of emissions trading or carbon tax systems.⁴⁰⁷ In this respect, scholars propose the establishment of a carbon certification system based on the emission level of products.⁴⁰⁸ The “carbon label” attaches to a product would exhibit the emission footprint of that product and provide necessary information for calculation of the level of border adjustment applied concerning a domestic emissions trading or a carbon tax system.

Carbon certification and labeling requirements which are adopted by contracting parties to an RTA and mandated by a national regulation can qualify as

universal or near-universal membership, it would also serve as a relevant international standard. See Bradly J. Condon, “Climate Change and Unresolved Issues in WTO Law,” *J Int Economic Law* 12, no. 4 (December 1, 2009): 924.

⁴⁰³ Low, Marceau, and Reinaud, “Interface between the Trade and Climate Change Regimes,” 25.

⁴⁰⁴ *Ibid.*

⁴⁰⁵ *Ibid.*

⁴⁰⁶ United States - Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Product, WT/DS381/AB/R, para.398–399 (WTO Appellate Body Report May 16, 2012).

⁴⁰⁷ Alexander Kasterine and David Vanzetti, “The Effectiveness, Efficiency and Equity of Market Based and Voluntary Measures to Mitigate Greenhouse Gas Emissions from the Agri-Food Sector,” *UNCTAD Trade and Environment Review*, 2010, 102.

⁴⁰⁸ Hufbauer, Charnovitz, and Kim, *Global Warming and the World Trading System*, 2009, 68.

mandatory measures or technical regulations under the TBT Agreement. Such measures will be subjected to rules on non-discrimination, use of international standards and trade-restrictiveness of a measure as discussed in 2.6.

3.4.2.2 Issues arising from the implementation of Border Carbon Adjustments within RTAs

Emissions benchmarks

Concerning the implementation of Border Carbon Adjustments, the feasibility to administer carbon-related border adjustment schemes is crucial because of their novelty, technical complexity and lack of data on emissions. The imposition of such measure presents methodological challenges which could considerably influence their compliance with WTO rules.⁴⁰⁹ As analyzed in 2.4.3, BCAs should correspond to domestic measures so as to avoid conflicts with the non-discrimination principles. Thus, if climate-friendly products and carbon-intensive products were found to be like, a carbon tax or an emission allowance would provide the similar treatment for them.⁴¹⁰ However, the determination of the emissions-tracing in imported products and border adjustment levels is challenging and calls for a design that balances between effectiveness and feasibility.

It is essential to correctly evaluate the carbon content of products in order to implement appropriate BCA measures. Theoretically, all imports should be subject to emissions reduction obligations to balance the competitive conditions between domestic and imported products. However, the emissions rate of a product can be

⁴⁰⁹ Wooders and Cosbey, “Climate-Linked Tariffs and Subsidies: Economic Aspects (Competitiveness & Leakage),” 14–15,19.

⁴¹⁰ Charles E. Jr. McLure, “The GATT-Legality of Border Adjustments for Carbon Taxes and the Cost of Emissions Permits: A Riddle, Wrapped in a Mystery, inside an Enigma,” *Fla. Tax Rev.* 11 (2011): 256.

generated directly from its production process and the secondary sources such as energy inputs. Such a calculation would be made for each production facility based on actual emissions.⁴¹¹

A country can demand import producers to provide verifiable evidence of emissions reduction certified by an authorized body. However, the measurement of this approach is not always feasible and faces additional obstacles including potential legal challenges.⁴¹² In this scenario, a uniform price for both imported and domestic products, irrespective of their production processes and energy inputs, would be less burden for administration but it might restrain the emissions reduction goals because producers do not receive incentives to invest in clean technology.

Thus, the measurement should be based on standardized benchmarks serving as a proxy for the carbon intensity of products. Benchmark values can be set to reflect average performance or best available technology in a sector, either at a national, regional or global level (so-called “Best Available Technology-BAT” method).⁴¹³ The BAT method could serve as a reference to assess the carbon content of imported goods. An independent organ can evaluate carbon footprint by applying a single procedure as an international standard. Furthermore, this approach would avoid the issue of discrimination by demonstrating that the purpose of the adjustment is not for protectionism. By offering an objective criterion, the BAT within an RTA could be multilateralized to obtain international approval and allow for the definition of

⁴¹¹ Joshua Elliott et al., “Unilateral Carbon Taxes, Border Tax Adjustments and Carbon Leakage,” *Theoretical Inquiries in Law* 14, no. 1 (2013): 207–244.

⁴¹² Samuel Kortum and David J. Weisbach, “The Design of Border Adjustments for Carbon Prices,” *National Tax Journal* 70, no. 2 (June 1, 2017): 421–46.

⁴¹³ Robert Ireland, “Implications for Customs of Climate Change Mitigation and Adaptation Policy Options: A Preliminary Examination,” *World Customs Journal* 4, no. 2 (2010): 21–36.

international standards of production.⁴¹⁴ The proposed design of BCAs within RTAs should reflect both the emissions originating from the manufacturing process and energy inputs from electricity and fossil fuels generated off-site with different methodologies for the technical complexity. They include:

First, the CIM proposal in 2019 of the EU, which address in 2.1, can be a proper approach to determine the direct emissions from production. This proposal's methodology focuses on industrial sectors rather than countries and, thus, reduce the link to specific country attributes that might have prompted complaints of discrimination. The application of a BCA on imports based on average emissions of sectors on the global scale would balance between legal concerns about a country's focus, fairness considerations, and the sustained incentive for green investment.

Second, BCAs should also apply on indirect emissions generated from electricity and heat off-site. Scholars demonstrate that because those energies is often traded across national borders, the benchmark for determination should be based on average grid emission factors in regional markets rather than a specific country's averages.⁴¹⁵ This approach helps avoid a legal problem concerning country-specific characteristics of production process, but also represents the local features of the energy supply at the same time.

However, when there is lack of suitable or accurate data from imports, a country imposing BCAs could also base the determination of carbon footprint on the average direct and indirect emissions intensity of its domestic products.⁴¹⁶ Past policy

⁴¹⁴ However, this evaluation method of the carbon content of products leads to a comparative assessment of PPMs, which might be challenging to put into practice. This issue will be further elaborated in Section 3.5.

⁴¹⁵ Mehling et al., "Designing Border Carbon Adjustments for Enhanced Climate Action," 46.

⁴¹⁶ Jennifer Hillman, "Changing Climate for Carbon Taxes: Who's Afraid of the WTO?," *Georgetown Law Faculty Publications and Other Works*, July 1, 2013, 8, <https://scholarship.law.georgetown.edu/facpub/2030>.

proposals, such as the 2007 FAIR and 2009 CIM proposals,⁴¹⁷ avoided technical complexity and legal risk by basing the calculation of embedded carbon on the average carbon intensity of domestic goods. Standardized benchmarks, therefore, would not represent the emissions performance of individual emitters accurately. The BCA design would provide foreign producers a mechanism to comply with judicial precedent, including a transparent, accessible process to actual emissions data, and thereby demonstrate if their emissions intensity is lower than required benchmarks.⁴¹⁸ The proposal would involve creating a joint body under the RTA to develop a common international standard for the calculation of the carbon footprint of products.⁴¹⁹

The coverage of a Border Carbon Adjustment

In order to simplify the administration, Border Carbon Adjustments should only include products from high carbon-cost and trade-exposure sectors such as cement, steel, and aluminum that exhibit the embodied carbon higher than other manufactured products.⁴²⁰ This approach could reduce the administrative and technical burden of a BCA while still providing significant climate benefits.⁴²¹ This narrow scope covering only sectors with high carbon-intensity could contribute significant environmental benefits and ensures that the BCA meet the conditions set out in the chapeau of Article XX of the GATT as seen in 2.5.3. Determination of these sectors can build on established criteria and thresholds available in each country and proposed by scholars. The policy should also be accompanied by ex-ante studies to identify vulnerable

⁴¹⁷ See Section 2.1.

⁴¹⁸ Cosbey et al., “A Guide for the Concerned,” 16.

⁴¹⁹ Bacchus, “Global Rules for Mutually Supportive and Reinforcing Trade and Climate Regimes.”

⁴²⁰ Cosbey et al., “A Guide for the Concerned.”

⁴²¹ Christoph Böhringer, Jared C. Carbone, and Thomas F. Rutherford, “Unilateral Climate Policy Design: Efficiency and Equity Implications of Alternative Instruments to Reduce Carbon Leakage,” *Energy Economics* 34 (December 1, 2012): S208–17.

industries and possible downstream impacts.⁴²² Moreover, in order to meet the requirement of likeness under national treatment of WTO law, the coverage of a BCA must correspond to the list of products subject to the same domestic measure.

The adoption of BCAs should also consider whether both imported and exported products would be included. Some scholars suggest that BCAs on imports and exports could increase the effectiveness in preventing leakage.⁴²³ However, the scope of application should exclude exports because legal hurdles might arise concerning prohibited export subsidies under the SCM Agreement as analyzed in 2.7.⁴²⁴ Even with this limitation, many scholars argue that a BCA on imports will still secure potential benefits.⁴²⁵

3.4.2.3 A hypothetical design for the negotiation and implementation of BCAs between parties to RTA

Given that parties to an Regional Trade Agreement which comprises BCAs-related commitments have different national climate policies and their levels of development are different, a party which has a national climate regime such as an ETS, carbon tax or GHG emissions standards might request that importers of other contracting parties with no or lax regulations on climate change should submit emissions allowances in an amount corresponding to the carbon footprint of imported products.

In order to minimize the risk of allegations of discrimination against imported

⁴²² Aaron Cosbey and Carolyn Fischer, “Toward a New Climate Agreement: Conflict, Resolution and Governance,” in *Toward a New Climate Agreement: Conflict, Resolution and Governance*, ed. Todd L. Cherry, Jon Hovi, and David M. McEvoy (Routledge, 2014), 223.

⁴²³ Mehling et al., “Designing Border Carbon Adjustments for Enhanced Climate Action,” 40–41.

⁴²⁴ See Section 2.7. See also Joel P. Trachtman, “WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes,” *National Tax Journal* 70(2) (June 2017): 469–94.

⁴²⁵ Böhringer, Balistreri, and Rutherford, “The Role of Border Carbon Adjustment in Unilateral Climate Policy”; and Fisher and Fox, “Comparing Policies to Combat Emissions Leakage.”

products, some suggest that the level of BCAs would be benchmarked by the Best Available Technology (BAT) – the technology with the lowest level of emissions that has a significant market share.⁴²⁶ They argue that if such importers can supply certificates to the effect that the level of GHG emissions during the production process of their products are below the BAT level of the importing country, the importing country would allow the importers to submit the allowances in an amount respecting the exact carbon footprint of their products. This requirement is an incentive for the parties especially developing countries to invest in climate-friendly technologies and afterward receive lower border adjustment rates when exporting its products to other parties. A problem may concern the recognition of carbon footprint certificates, but the parties may agree to recognize carbon footprint certificates granted by an international certification body or negotiate a certification system if such a body is not easily available. RTAs with BCAs-related provisions also need to include a mechanism for identifying the comparable climate regimes of each party. As mentioned previously, the primary purpose of implementing BCAs under RTAs is to convince other parties to introduce their climate change mitigation regulations by putting a price on carbon. Irrespective of climate regime's form that a party chooses, the other parties must accept it as an equivalent action and commit not to impose the BCAs with that country.

I propose, first, that a party should indicate its national climate-related rules as efforts to combat climate change such as an ETS, carbon tax or climate-related standards and indicate these policies in an RTA annex. Second, upon the adoption of those regulations in that country, no other parties to the RTA may impose BCAs on its products. If a party considers that another party's climate-related rules are inconsistent

⁴²⁶ Section 3.4.3.2. See also Marco Sakai and John Barrett, "Border Carbon Adjustments: Addressing Emissions Embodied in Trade," *Energy Policy* 92 (2016): 102–110.

with the latter's commitments under the RTA, it could apply BCAs on carbon-intensive products imported from that party. In practice, the recognition of comparable national climate regulations between the parties requires a massive endeavor for a "common voice" on procedural and technical harmonization of non-product-related PPM measures such as laboratory practices, risk assessment, and certification procedures. However, such a challenge would be easier to overcome at the regional level rather than the multilateral level.⁴²⁷

3.5. Limitations to the implementation of Border Carbon Adjustments through RTAs

As examined in 1.4.3 and 1.5, Border Carbon Adjustments are the only options to offer both adequate protection against leakage and an incentive for other countries to facilitate climate-friendly production. The implementation of BCAs can raise administrative challenges because data on emissions of imported products may not be easily available. Although many scholars state that the availability of data on emissions of imported products has dramatically improved in recent years,⁴²⁸ it is still a barrier to the adoption of BCAs. Because BCAs aim to balance the competitive disadvantages based on carbon footprint of imported products, such measures have to distinguish the scope and methodologies to trace targeted emissions. While a BCA should cover emissions from a product's production, indirect sources from energies, and

⁴²⁷ OECD, "Processes and Production Methods (PPMs): Conceptual Framework and Considerations on Use of PPM-Based Trade Measures," 17,39.

⁴²⁸ Although the situation has recently been improved about this matter, the availability of data still constitutes a barrier. For instance, there is an increasing number of multi-regional input-output databases, such as the World Input-Output Database, the Global Resource Accounting Model, and the Global Trade Analysis Project. See Martin van de Lindt et al., *Carbon Emission Mitigation by Consumption-Based Accounting and Policy*, Carbon-CAP Deliverable D8.2: Final Project Report, (2017), 2; Kirsten S. Wiebe, Simon Gandy, and Christian Lutz, "Policies and Consumption-Based Carbon Emissions from a Top-down and a Bottom-up Perspective," *Low Carbon Economy* 7, no. 01 (2016): 22.

intermediate carbon content such as transportation and waste disposal, the calculation of carbon footprint involved in products is challenging. Also, international supply-chain involves products that have components originate in multiple countries, and this makes the tracking of carbon footprint more difficult. As discussed in 3.4.1.2, rules of origin in RTAs with BCAs-related provisions should mitigate the risk that emission-intensive products could be transferred to a third party and then to the destined country in order to take advantage of the MFN tariff rates rather than the BCA rates. Those rules would be more complex and demanding to administer than those associated with traditional trade arrangements. In addition, contracting parties to an RTA may make efforts on emission reductions with different schedules of commitments and various types of measures in terms of their economic developments. These call for differentiated trade preferences based on each country's emissions reduction commitments and carbon contents of various product's production process. Thus, such arrangements would add to administrative complexity.

3.6. Conclusion to Chapter 3

Because there are incentives for contracting parties to accept provisions on Border Carbon Adjustments, the implementation of these measures under Regional Trade Agreements could be a realistic scenario. Insofar as such RTAs meet the requirements under Article XXIV of GATT, the advantage of this approach is that other WTO Members which are not a party to the RTA concerned would not dispute such a measure before WTO bodies.

Any proposal for implementing BCAs through RTAs should make its benefits clear that can surpass obligations through trade preferences without violating WTO law. By avoiding discrimination and differentiation and ensuring a fair, inclusive, and

transparent process, the adoption of BCAs under RTAs would overcome legal challenges under WTO law. Although obstacles might occur concerning administrative burdens and potential trade impacts in the short-term, BCAs show their merits as a desirable option for global climate action in the long run when social concerns and physical manifestation of climate change progressively rise over time.

Conclusion

The scientific evidence shows that the impacts of climate change on the environment continue to evolve. In order to deal with this problem, international cooperation and financial resources are required. Failure to appropriately address this matter may result in the destruction of humankind. We must take measures for mitigating climate change by reducing its causes through the reduction of greenhouse gas (GHG) emissions and by reducing its adverse effects through structural and technological changes and capacity building. All levels of governance should be involved including multilateral, regional and national as well as both public and private sectors.

The issue of climate change is very challenging and it is difficult for the international community to adopt a universal international agreement. Despite efforts of the international community, this “top-down approach” has not succeeded in securing wide participation nor mutual acceptance on a global burden sharing and design for compliance. However, some countries, therefore, have started to adopt national measures to address climate change unilaterally.

On the other hand, as explained in 1.3, the “bottom-up approach” is represented by national climate change mitigation measures such as emission trading schemes (ETS), carbon taxes on fuel consumption, and other national carbon-intensity standards and regulations. However, due to the unilateral nature of national climate policies, unequal competition conditions may occur between domestic and foreign producers. If the producers in countries with limited carbon reduction regulations enjoy the advantage of selling their products at a lower price than producers that are obliged to bear emissions reduction costs, the latter producers may have incentives to relocate

their carbon-intensive production to countries with no or lax carbon constraint regimes. Thus, a strict climate policy in one country may lead to an increase in GHG emissions in other countries, especially least-developed or developing countries. The fight against climate change could be then meaningless due to the phenomenon of “carbon leakage.”

As examined in 1.4, there are a number of measures to address competitiveness and carbon leakage arising from the implementation of carbon reductions regime. Out of such measures, border adjustments, which target imports and exports that originate from or are destined for countries that have no comparable GHG emissions reductions system has recently gained support not only from policymakers but also from scholars. Such border carbon adjustments (BCAs) include tariffs, taxes, quotas, subsidies or technical regulations that can level GHG emissions costs both upward and downward. The main aim of BCAs is to address the risk of carbon leakage by imposing trade restrictions on carbon-intensive imports and compensation of emissions costs for domestic exporters.

As discussed in the Chapter 2, such measures are not *a priori* violate of WTO law but they need to meet the requirements of border adjustments for price-based measures, non-discrimination treatment to imported products, and subsidies rules on exportation. Firstly, the price-based BCAs applying on imported products need to qualify as indirect taxes, otherwise they would be considered ordinary customs duties and prohibited under Article II:1(b) of the GATT when the amount of applied taxes is higher than the bound tariffs of the Member. While border adjustments of consumption taxes are widely used and acceptable practice by WTO Members, the legal framework for border adjustments of taxes and regulations relating to processes and productions methods (PPMs) presents many hurdles. Thus, whether BCAs can qualify as indirect taxes is uncertain since the design of such measures based on the carbon footprint of

imported products is connected with PPMs and the WTO adjudicative bodies have not decided on this matter. Secondly, BCAs need to pass the test of non-discrimination treatment under the GATT and the TBT Agreement. Due to the PPMs characteristic, BCAs might be unable to pass the likeness test and thus be found to violate the most-favoured-nation and national treatment principles. Likewise, export-side BCAs might be considered as prohibited export subsidies under the SCM Agreement.

However, as examined in 2.5, WTO Members may invoke Article XX of the GATT to justify BCAs which may otherwise breach WTO law. Whether a BCA could be justified by this provision depends upon whether it is considered to arbitrarily discriminate between products from countries where the same condition prevails. In other words, countries which adopt BCAs have to consider conditions in other countries and make proper efforts to find a negotiated solution in an international climate agreement. The design of the BCAs should be flexible enough to exclude imported products from countries that have taken emission reduction efforts and to take into account the level of economic development of countries.

On the side of exportation, the imposition of BCAs in forms of allowance exemptions or rebates will face legal obstacles because such measures could be considered as prohibited subsidies under Article 3.1 of the SCM Agreement as analyzed in 2.7. Also, given the strict requirements of Article XX of the GATT, this article is unlikely to justify violations of the SCM Agreement.

Although Members could seek for the clarification of provisions concerning BCAs through the WTO dispute settlement system to reduce legal hurdles, a main drawback of this approach is that it only provides a one-time, case-by-case solution. Accordingly, WTO panels and the Appellate Body may settle disputes concerning

various BCAs differently and the legality of a specific BCA remains uncertain. Moreover, their decisions would have adverse effect on an important climate-protection policy of a Member State and could lead to non-compliance and retaliatory measures from that country. As a consequence, countries that seek to adopt BCAs need a negotiated solution providing legal certainty in the long-term. Such solutions could be achieved by negotiations of WTO Members at a multilateral, plurilateral or regional level. However, seeking multilateral and plurilateral negotiations is neither feasible nor effective due to WTO consensus decision-making.

Then, a regional approach as suggested in Chapter 3 is more appealing. Using Regional Trade Agreements such as Free Trade Agreements (FTAs) and Custom Unions (CUs) by WTO members as an instrument to enhance climate change mitigation is a realistic scenario at the moment. This idea comes from the ordinary meaning of Article XXIV of the GATT. If climate change provisions are included in RTAs, the international community may multilateralize such provisions. Whether the implementation of BCAs through RTAs satisfies the requirements of Article XXIV of the GATT is still uncertain. However, because such BCAs apply only to the parties to the RTA at issue, it is very unlikely that a dispute concerning such BCAs is referred to the WTO Dispute Settlement Body. At least, such possibility is lower than in the case of unilateral BCAs.

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