BORDER CARBON ADJUSTMENT MECHANISMS: LEGAL AND POLITICAL BARRIERS, AND THE REFORM OF THE WTO

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SUSTAINABLE DEVELOPMENT AS FUNDAMENTAL PILLAR OF ECONOMIC GOVERNANCE AND PUBLIC AFFAIRS

The EU Approach and International and Domestic Perspectives

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CONTENTS

Session VI. Sustainable Development, FTAs and the EU

BORDER CARBON ADJUSTMENT MECHANISMS: LEGAL AND POLITICAL BARRIERS, AND THE REFORM OF THE WTO

*Goran Dominioni and Alessandro Monti**

1. *Introduction*

Products traded internationally account for a large share of global greenhouse gas (GHG) emissions – and thus, the trading system has been widely regarded as a problem with respect to the global response to climate change. In this chapter, we take up the issue of the alignment of the WTO's vision, rules, and procedures with the world community's commitment to climate change action. We focus, in particular, on the issue of policy-induced GHG leakage[1], i.e. the displacement of GHG emissions from countries that increase the stringency of domestic GHG policies to low-standard countries. Increasing the stringency of domestic GHG policies often imposes additional costs on domestic producers, thereby re-

* We are grateful to Elisa Baroncini, Kasturi Das, Dan Esty, Kateryna Holzer, Jan Yves Remy, Joel Trachtman, and the other participants to the workshops in Bogotà, Bologna, and Talloires, for helpful comments. We are particularly grateful to the Remaking the Global Trading System for a Sustainable Future Project for supporting the writing of an earlier version of this chapter, which was circulated as a White Paper under the title *Internalizing Climate Externalities from Internationally Traded Goods: Challenges and Way Forward for Border Carbon Adjustment Mechanisms*. The usual disclaimer applies.

[1] M. Grubb, N.D. Jordan, E. Hertwich *et al.*, *Carbon Leakage, Consumption, and Trade*, in *Annual Review of Environment and Resources*, 2022, 47(1), pp. 753 ff.

ducing their competitiveness and incentivizing shifts in the production and investments (and related GHG emissions) to low-standard countries. As a result, GHG emission reductions achieved by a more stringent GHG jurisdiction are offset by increased emissions in a low-standard jurisdiction. Hence, concerns for GHG leakage can hamper climate action in high-ambition jurisdictions, threatening the achievement of commitments to deep decarbonization set in the Paris Agreement.

International trade contributes to GHG leakage by allowing the shift of production – and related investments – of GHG-intensive goods from high- to low-standard jurisdictions. To the extent that WTO rules and practices prevent high-ambition jurisdictions from addressing carbon leakage, there is a fundamental tension between the climate and trade regimes, which puts the latter under pressure.

In this chapter, we argue that a first step to reconciling the climate and trade regimes is to ensure that the prices of internationally traded products reflect the *climate-related harm* of producing and consuming these goods and we analyze possible ways to achieve this. In particular, we analyze the possibility of adopting border carbon adjustment (BCA) mechanisms on imports to price GHG emissions from international trade. In essence, BCA mechanisms apply a charge on the GHG emissions embedded in – i.e., released in the production and (sometimes) the consumption of – imported products. This charge aims to level the playing field between domestic producers and their competitors in low-standard jurisdictions, thereby reducing GHG leakage risks.

Academic and grey literature has discussed various instruments that can address GHG leakage[2]. This chapter focuses on BCA mechanisms due to their prominence in the policy debate. The EU has recently adopted the Carbon Border Adjustment Mechanism (CBAM)[3]. Other jurisdictions have also announced their intention

[2] C. Böhringer, C. Fischer, K.E. Rosendahl *et al.*, *Potential impacts and challenges of border carbon adjustments*, in *Nature Climate Change*, 2022, 12(1), pp. 22 ff.

[3] Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism, OJ L 130, 16.5.2023, pp. 52-104.

to follow a similar path, including Canada, the United Kingdom, and the United States[4]. Furthermore, BCA mechanisms are sometimes seen as instruments to support the creation of an international sub-global agreement on climate change mitigation (a so-called climate club). The discussion on implementing a climate club is now high on the G7 agenda[5].

After delineating the role for BCA mechanisms to internalize climate externalities and – thereby – address carbon leakage, we analyze potential legal and political barriers to implementation and discuss possible ways to resolve these conflicts. Lastly, we broaden the discussion to potential reforms of the vision, rules, and procedure of the WTO system, to better align it with the sustainability agenda.

2. *Addressing GHG leakage concerns through border carbon adjustment mechanisms*

This section discusses GHG leakage and the contribution of international trade to the problem. It then looks at how BCA mechanisms can help address GHG leakage related to international trade. Lastly, this section discusses the rationale for focusing on pricing GHG emissions embedded in internationally traded goods at the social cost of carbon – i.e., the economic cost of emitting an additional ton of GHGs – as a *first step* to addressing GHG leakage and reconciling the trade and climate regimes.

2.1. *GHG leakage and international trade*

The stringency of current GHG policies diverges significantly across countries, reflecting differences in policy priorities and resources available to address the climate problem. These variations can result in GHG leakage. In particular, an increase in the stringency of climate change mitigation policies in a given jurisdiction can raise

[4] M. Jakob, S. Afionis, M. Åhman *et al.*, *How trade policy can support the climate agenda*, in *Science*, 2022, 376(6600), pp. 1401 ff.

[5] G7, *G7 Statement on Climate Club*, 2022.

costs for domestic producers, reducing their competitiveness in the domestic and foreign markets. This reduction in competitiveness can shift production and investments (and the related GHG emissions) to low-standard jurisdictions. International trade enables these shifts, for instance, by allowing consumers and producers in high- standard countries to consume goods produced in low-standard ones.

GHG leakage can hamper climate action in high-ambition jurisdictions due to the fact that climate harms are global – albeit not evenly distributed – and do not depend on where GHG emissions occur. Thus, countries that wish to increase the stringency of domestic GHG policies risk losing competitiveness while not reaping the climate benefits of their policies. This is daunting for climate action given the bottom-up approach embraced in the Paris Agreement, which calls for climate ambition at the domestic level, as well as in light of with respect to the more general expectation for developed countries to take the lead in mitigating climate change, in line with the Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) Principle.

Ex-post econometric analyses from emission-intensive and trade-exposed industries under the EU emission allowances trading scheme do not provide strong evidence of carbon leakage[6]. However, the low price of emission allowances under this scheme in the periods considered in these studies can explain these results. Ex-ante numerical simulations confirm the theoretical intuition that an increase in the stringency of GHG emission policies will result in carbon leakage. In particular, these studies indicate that carbon leakage would be 5-30 percent, depending on assumptions on, for instance, carbon price level and the elasticity of the supply of fossil fuels[7]. Thus, countries that plan to increase their ambition on climate mitigation action have legitimate concerns that their efforts will be significantly offset by GHG emissions increases abroad.

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[6] S.F. Verde, *The impact of the EU emissions trading system on competitiveness and carbon leakage: the econometric evidence*, in *Journal of Economic Surveys*, 2020, 34(2), pp. 320 ff.

[7] These are reviewed in C. Böhringer, C. Fischer, K.E. Rosendahl *et al.*, *Potential impacts and challenges of border carbon adjustments*, in *Nature Climate Change*, 2022, 12(1), pp. 22 ff.

In light of the above considerations, the next sub-section will discuss how BCA mechanisms can help address GHG leakage.

2.2. *Border carbon adjustments mechanisms and GHG leakage*

By charging a price on GHGs embedded in imported products, BCA mechanisms can *level the playing field* between domestic and foreign producers selling in the importing country.

Furthermore, when carbon adjustment mechanisms also apply to exports by the implementing country (e.g., exported goods are exempted from domestic GHG policies), domestic producers can more easily compete in foreign markets. Both options can, in principle, help address competitiveness concerns and related GHG leakage issues. However, this chapter only focuses on imports, as the GHG benefits of export BCA mechanisms are not fully clear[8].

Furthermore, BCA mechanisms incentivize the uptake of more ambitious climate policies in trading partner countries – thereby reducing GHG leakage – in two ways. On one hand, the exporting country's government has an incentive to reduce the *compliance cost* in export sectors by implementing new climate policies. These could include, for instance, energy efficiency policies that help close the energy efficiency gap and subsidies for deploying environmental technologies. On the other hand, BCA mechanisms can be structured so that the price applied to each tonne of GHGs embedded in imported products equals the *difference* between the stringency of domestic and foreign climate policies. Under a BCA mechanism structured in this way, the exporting country can implement revenue-raising climate policies (such as carbon taxes) to reduce the carbon price applied by the foreign jurisdiction on its export and *collect revenues* that would otherwise accrue to the importing jurisdiction[9].

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[8] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[9] *Ibid.*

Existing research suggests that BCA mechanisms can address carbon leakage and competitiveness concerns effectively[10]. A meta-analysis of more than 30 studies finds that BCA mechanisms can reduce leakage by more than one-third on average (from 14 percent to 6 percent)[11]. However, the effectiveness of these mechanisms may depend on the specific design of the measure. Thus, jurisdictions interested in implementing a BCA mechanism should think carefully about its design. In any case, the next sub-section identifies a number of rationales for BCAs as a tool to internalize climate externalities from GHG emissions embedded in internationally traded goods to address GHG leakage and reconcile the trade and climate regimes. In particular, we argue that these instruments can also address trade distortions and can therefore be well aligned with the aims of the WTO.

2.3. *Border carbon adjustment mechanisms, climate externalities, and trade distortions*

A key aim (and responsibility) of the WTO is to increase the welfare of people globally and ensure an optimal allocation of scarce resources. Uninternalized climate externalities reduce the price of goods, the production or consumption of which releases GHG emissions. Besides causing carbon leakage, this under-pricing distorts trade by impeding that their production is located in countries characterized by a comparative advantage – a key condition for maximizing social welfare. Estimates by the International Monetary Fund indicate that climate externalities are almost one-third of the global unpriced externalities from fossil fuels in 2020[12]. These externalities

[10] C. Böhringer, C. Fischer, K.E. Rosendahl *et al.*, *Potential impacts and challenges of border carbon adjustments*, in *Nature Climate Change*, 2022, 12(1), pp. 22 ff.

[11] F. Branger, P. Quirion, *Would border carbon adjustments prevent carbon leakage and heavy industry competitiveness losses? Insights from a meta-analysis of recent economic studies*, in *Ecological Economics*, 2014, 99, pp. 29 ff.

[12] I. Parry, S. Black, N. Vernon, *Still not getting energy prices right: A global and country update of fossil fuel subsidies*, IMF Working Paper WP/20/236, International Monetary Fund, 2021.

are large, amounting to about 6.8 percent of global GDP, or 5.9 trillion US Dollars[13].

By pricing GHG emissions embedded in goods produced in low-standard jurisdictions, BCA mechanisms can help internalize climate externalities, thereby ensuring that international trade supports welfare creation. Thus, to the extent that BCA mechanisms allow pricing GHG emissions embedded in internationally traded products at the social cost of carbon, these instruments align with widely accepted aims of the WTO[14].

Indeed, leakage concerns may also exist in a world where all environmental externalities are already internalized. This is the case, for instance, if a country decides to implement a domestic carbon price per tonne of GHG emitted domestically that is much higher than the global social cost of carbon. Such country may still face carbon leakage problems that are worth addressing, even if all other countries already price GHG emissions at the social cost of carbon. Should the WTO be held accountable for these leakage effects? While in principle the answer might be yes, a first and easier step to take is to ensure that the WTO fulfils its widely acknowledged aims.

On this ground – and in alignment with recent scholarship on trade and climate change[15] – we think that as a *first step* towards reconciling the trade and climate regimes, it would be desirable to implement BCA mechanisms that price GHG emissions embedded in internationally traded products at the social cost of carbon, starting from the more carbon-intensive and trade-exposed industries. Focusing on pricing externalities from international trade can facilitate the acceptance of these instruments and it is thus well suited as

[13] *Ibid*.

[14] We recognize that estimates of the social cost of carbon vary significantly across studies. However, this has not prevented countries from acting on this. For instance, the Biden administration applies a social cost of carbon of 51 U.S. dollars per metric ton of carbon, see Interagency Working Group on Social Cost of Greenhouse Gases, United States Government Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. Similarly, this should not halt the implementation of a BCA mechanism. Ideally, cooperation among trading partners can help reaching an agreement on how to estimate the social cost of carbon.

[15] D.C. Esty, *Trade Implications of Greenhouse Gas Emissions Pricing*, in *World Trade Report 2022*, World Trade Organization, 2022.

a starting point for bridging the existing gaps between the *climate* and the *trade communities* and, pragmatically, as a logical springboard for efforts to align the WTO system with the need to address climate change.

3. *The legal and political viability of border carbon adjustment mechanisms: A deeper dive*

Implementing a BCA mechanism requires complying with WTO law and addressing political challenges. In this section, we discuss key WTO law and political challenges of implementing BCA mechanisms and potential ways to address these.

3.1. *WTO law compatibility*

A crucial challenge for the implementation of a BCA mechanism is to ensure compatibility with WTO law, to strengthen its legitimacy and avoid legal disputes[16]. In this regard, the rules concerning most-favored-nation treatment and national treatment under Articles I and III of the General Agreement on Tariffs and Trade (GATT) have particular relevance. These provisions respectively require that trade policies do not discriminate between different trade partners (most-favored-nation) and between domestic and foreign producers (national treatment). Below, we discuss three key potential issues on the compatibility of BCA mechanisms with these provisions. In particular, we focus on (i) whether products with differ-

[16] There is significant scholarship on the compatibility of BCA mechanisms with WTO law. This section aims to touch upon some of the key issues. See, for instance, J.P. Trachtman, *WTO law constraints on border tax adjustment and tax credit mechanisms to reduce the competitive effects of carbon taxes*, in *National Tax Journal*, 2017, 70(2), pp. 469 ff.; J. Bacchus, *Legal issues with the European carbon border adjustment mechanism*, CATO Briefing Paper, 2021, 125, pp. 3-6; M.A. Mehling, H. Van Asselt, K. Das *et al.*, *Designing border carbon adjustments for enhanced climate action*, in *American Journal of International Law*, 2019, 113(3), pp. 433 ff.; G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

ent levels of embedded GHGs can be considered "like products"; (ii) what GHG pricing instruments can be subject to adjustment under the GATT; and (iii) whether crediting climate policies implemented in the exporting country is compatible with the most-favored-nation principle.

The *like-products* question concerns whether adjustments for charges related to processes and production methods (PPMs) that do not leave physical traces in the product itself is compatible with Article III:2 GATT. This Article requires that imported products are not treated less favorably than domestic "like products". The issue of "likeness" with respect to PPMs and import taxes represents a long-standing and still ongoing discussion among trade lawyers. The landmark 1970 Report of the Working Party on Border Tax Adjustments clarified the legal treatment of these measures but did not take a position on the PPMs issue[17]. Nor was the issue fully clarified in WTO jurisprudence. A relevant precedent can be seen in the *Superfund* case, in which the importing country (United States) imposed an environmental tax on certain imported products due to the use of chemical feedstock in the production process, and the measure was deemed legitimate by a GATT panel[18]. However, this case concerned inputs that were physically incorporated, albeit in a different form, in the final product. Thus, at the moment, WTO jurisprudence does not explicitly recognize the possibility to adjust for charges on non-product-related PPMs, such as charges that target GHG emissions released in the production of imported goods.

The second key issue concerns what type of *GHG pricing instruments* can be taken into account within BCA mechanisms. In particular, it is debated whether border tax adjustments are feasible only for fiscal instruments, or also for regulatory instruments. Regulatory instruments include, for instance, emission allowance trading schemes, which – despite putting an explicit price on carbon

[17] GATT, *Border Tax Adjustments: Report of the Working Party*, L/3464, BISD 18S/97, 2 December 1970.

[18] GATT, *Panel Report, United States–Taxes on Petroleum and Certain Imported Substances*, BISD 34S/136, 17 June 1987.

– are generally not seen as fiscal instruments, or other non-price GHG policies, such as non-tradable performance-based standards[19]. Scholarly research is divided on this matter[20].

Lastly, a third critical point is whether *crediting* climate policies implemented in the exporting country is compatible with the most-favored-nation principle. From a trade law perspective, crediting for climate policies implemented abroad may give rise to legal challenges under Article I GATT. In particular, trade partners with weak GHG policies could be concerned with the more stringent border adjustment applied to their exports compared with products exported from high-standard jurisdictions. At the same time, also not crediting for policies abroad may lead to legal challenges. In this case, the challenge could come from countries that do have stringent GHG policies in place, as their products would be subject to both these policies *and* the border adjustment charge – and thus risk losing competitiveness compared with exports from low-standard jurisdictions[21]. Recently, Dominioni and Esty have argued that BCA mechanism should credit for a broad set of GHG policies, accounting for the administrative difficulties of doing so[22]. This would not only help delivering better environmental outcomes, make BCA mechanisms more politically acceptable, but and increase their alignment with WTO law[23].

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[19] W.A. Pizer, E.J. Campbell, *Border Carbon Adjustments without Full (or Any) Carbon Pricing*, 2021, Working Paper 21-21, Resources for the Future.

[20] Some authors argue that border carbon adjustment can be problematic to justify for regulatory instruments such as emissions trading schemes. In this sense, see C. Böhringer, C. Fischer, K.E. Rosendahl *et al.*, *Potential impacts and challenges of border carbon adjustments*, in *Nature Climate Change*, 2022, 12(1), pp. 22 ff. For a diverging view, see J. Englisch, T. Falcao, *EU Carbon Border Adjustments and WTO Law, Part One*, in *Environmental Law Reporter*, 2021, 51(10), 10857 ff.

[21] M.A. Mehling, H. Van Asselt, K. Das *et al.*, *Designing border carbon adjustments for enhanced climate action*, in *American Journal of International Law*, 2019, 113(3), pp. 433 ff.

[22] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[23] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

The practical relevance of the three mentioned issues is mitigated by the applicability of Article XX GATT[24]. Article XX GATT provides for general exceptions, which allow justifying measures that are otherwise incompatible with GATT obligations, as long as such measures qualify under one of the subheadings and meet the requirements of the "chapeau" of Article XX.

While Article XX does not specifically mention climate change as a possible justification for national measures, it is widely recognized that two exceptions – at least – can be relevant for such purposes: i) Article XX(b) for measures necessary to protect human, animal, or plant life or health, and ii) Article XX(g) for measures relating to the conservation of exhaustible natural resources[25].

To satisfy the requirements of the Chapeau of Article XX, the BCA mechanism should not be applied in such a way as to give rise to arbitrary or unjustifiable discriminations, or disguised restrictions on international trade. In other words, the WTO Member invoking the exception will have to demonstrate that no less-restrictive alternative was reasonably available and that the measure genuinely pursues climate-change objectives, and does not represent a form of disguised protectionism[26].

Case law has clarified various features that matter in establishing whether a BCA mechanism meets the criteria of the Chapeau of Article XX. Various features of the BCA mechanism discussed above help meet these criteria. The first factor relates to the climate change effects of the instrument[27]. Implementing the adjustment mechanism to sectors most exposed to carbon leakage and selecting carefully the emission benchmarks can improve the climate outcomes of the measure, and therefore also its compatibility with

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[24] M.A. Mehling, H. Van Asselt, K. Das *et al.*, *Designing border carbon adjustments for enhanced climate action*, in *American Journal of International Law*, 2019, 113(3), pp. 433 ff.

[25] J.P. Trachtman, *WTO Trade and Environment Jurisprudence: Avoiding Environmental Catastrophe*, in *Harvard International Law Journal*, 2017, 58, pp. 273 ff.

[26] WTO, Appellate Body Report, *European Communities–Measures Affecting Asbestos and Products Containing Asbestos*, WT/DS135, 2001.

[27] GATT, Panel Report, *United States–Prohibition of Imports of Tuna and Tuna Products from Canada*, (BISD 29S/91), 1982, para. 4.8.

Article XX[28]. Similarly, the Chapeau of Article XX will require to take into account the climate policies implemented in the exporting country as well as leave flexibility to the exporting country on how to avoid the imposition of the border change on its exports[29]. Crediting a broad set of policies implemented in the exporting country can help meet these requirements[30].

Compliance with the Chapeau of Article XX GATT also requires that the WTO Members that intend to implement BCA mechanisms first engage in serious and good-faith negotiations with affected countries to reach an agreed solution[31]. Arguably, the wide-ranging consensus in negotiations that led to the adoption of international climate agreements – such as the Paris Agreement or the Glasgow Climate Pact – might qualify as such. Yet, neither of these instruments explicitly refer to BCA, therefore it is recommendable that specific negotiations are held with the affected countries before the implementation of such a measure[32]. We further discuss these needs for negotiations below. Lastly, the mechanism needs to be implemented in a transparent manner. Below we discuss possible collaborations between the implementing jurisdiction and various international institutions that can help increase the level of transparency of the mechanism.

Overall, the analysis presented above indicates that a well-designed BCA mechanism would likely comply with WTO law. However, the lack of specific WTO jurisprudence on border carbon adjustments might lead to a certain reluctance by governments in adopting such instruments.

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[28] M.A. Mehling, H. Van Asselt, K. Das *et al.*, *Designing border carbon adjustments for enhanced climate action*, in *American Journal of International Law*, 2019, 113(3), pp. 433 ff.

[29] WTO, Appellate Body Report, *United States–Import Prohibition of Certain Shrimp and Shrimp Products, Recourse to Article 21.5 of the DSU by Malaysia,* WT/DS58, 2001, para. 149.

[30] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[31] Appellate Body, *United States– Import Prohibition of Certain Shrimp and Shrimp Products,* WT/DS58, 1998.

[32] M.A. Mehling, H. Van Asselt, K. Das *et al.*, *Designing border carbon adjustments for enhanced climate action*, in *American Journal of International Law*, 2019, 113(3), pp. 433 ff.

Therefore, in the following section, we discuss a few options through which WTO Members could better clarify the scope for the implementation of border carbon adjustments under existing WTO law. Before doing so, we discuss more in detail potential political obstacles to the implementation of BCA mechanisms and ways to address them.

3.2. *Other (non-legal) considerations*

Besides legal risks, the implementation of BCA mechanisms may disrupt existing cooperation on climate change and increase the risk of trade frictions. For instance, BASIC countries have pushed back on the implementation of BCA mechanisms, declaring these measures "discriminatory and against the principles of Equity and CBDR-RC"[33]. Along these lines, stakeholder and expert interviews indicate that the implementation of the EU BCA mechanisms can threaten current collaborations on climate change between the EU and other major emitters[34].

The key concern expressed by developing countries concerning current plans to implement BCA mechanisms by developed countries is the impact on their economies. Research indicates that implementing a BCA mechanism will reduce exports from trading partners, negatively impacting their GDP and employment[35]. Some analysts have raised concerns regarding the compatibility of this burden shift with the UNFCCC principle of Common but Differentiated Responsibilities and Respective Capabilities[36]. In addition, some countries have expressed concerns that the BCA mechanism coerces

[33] BASIC Ministerial Meeting, *Joint Statement issued after the 30th BASIC Ministerial Meeting on Climate Change*, 2021.

[34] C. Hübner, *Perception of the Planned EU Carbon Border Adjustment Mechanism in Asia Pacific–An Expert Survey*, Konrad-Adenauer-Stiftung, 2021.

[35] C. Böhringer, C. Fischer, K.E. Rosendahl *et al.*, *Potential impacts and challenges of border carbon adjustments*, in *Nature Climate Change*, 2022, 12(1), pp. 22 ff; G. Magacho, É. Espagne, A Godin, *Impacts of CBAM on EU trade partners: consequences for developing countries*, *AFD Research Papers*, 2022, 238, pp. 1 ff.

[36] M. Jakob, S. Afionis, M. Åhman *et al.*, *How trade policy can support the climate agenda*, in *Science*, 2022, 376(6600), pp. 1401 ff.

exporting countries to implement certain measures, in contrast with the bottom- up approach of the Paris Agreement[37]. Addressing these concerns will require that countries implementing a BCA mechanism act strategically, both at the *design* and at the *diplomatic* level.

From a *design* perspective, there are at least two features that can reduce the risks of trade retaliation and of disrupting climate change cooperation. First, the narrow application to sectors most exposed to carbon leakage would reduce the negative impacts on third countries[38]. Second, by crediting *effective carbon prices*, the proposed BCA mechanism offers greater flexibility to exporting countries on how to reduce the burden of the charge on their exporting sectors, thus reducing the mechanism's alleged "coercive" effect[39].

The negative impacts of BCA mechanisms on exporting countries could be addressed in various ways, including: i) implementing exemptions or lower charges for developing countries – especially SIDS and LDCs; ii) scheduling longer timelines for developing countries to meet decarbonization targets; iii) distributing carbon revenues collected through the BCA mechanism to trade partners to act on climate change or development more broadly; iv) a mix of two or three of these options. Current debates on the distribution of carbon revenues from international shipping could be a useful starting point to discuss the distribution of revenues from BCA mechanisms[40].

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[37] A. Gläser, C. Oldag, *Less confrontation, more cooperation: increasing the acceptability of the EU Carbon Border Adjustment in key trading partner countries*, Policy Brief Germanwatch (interviews with Chinese and Russian officials), 2021; C. Hübner, *Perception of the Planned EU Carbon Border Adjustment Mechanism in Asia Pacific–An Expert Survey*, Konrad-Adenauer-Stiftung, 2021.

[38] H. Shen, Q. Yang, L. Luo, *Market reactions to a cross-border carbon policy: Evidence from listed Chinese companies*, in *The British Accounting Review*, 2022, 101116.

[39] Potentially, as adequate methods are developed and data are collected, BCA mechanisms could also look beyond effective carbon prices and include other GHG policies. However, at the moment this route seems impracticable from an administrative perspective, see G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[40] G. Dominioni, D. Englert, *Carbon Revenues from International Shipping: Enabling an Effective and Equitable Energy* Transition, Technical Paper, World Bank, 2023; G. Dominioni, I. Rojon, R. Salgmann *et al.*, *Distributing Carbon Revenues from Shipping*, World Bank, 2023.

Carbon revenue use could be combined with capacity building and knowledge exchange activities sponsored by the implementing jurisdiction, to help trading partners with capacity deficiencies to reduce the impact of the BCA mechanism on their exporting sectors. For instance, the training could focus on building capacity to close the energy efficiency gap in exporting sectors of negatively impacted countries.

Implementing a BCA mechanism will also require a *diplomatic* effort by the implementing country. Besides increasing the chances of meeting the requirements of Article XX GATT (see above), these diplomatic efforts can help reduce opposition from trading partners. For instance, diplomatic engagements can foster transparency of the BCA mechanism and contribute to designing it in such a way that takes into account and (potentially) addresses the concerns of trading partners regarding the impacts of the BCA mechanism on their exports. This can help tailor the implementation of the BCA mechanism to the circumstances of trading partners, for instance regarding how to establish equivalence between GHG policies implemented in various jurisdictions.

Besides bilateral diplomatic efforts, the implementation of BCA mechanisms designed as illustrated above can greatly benefit from support from various international organizations. We focus on these cooperation needs in the next section.

4. *Cooperation needs to implement a border carbon adjustment mechanism*

Various international organizations can cooperate with the WTO in supporting the implementation of BCA mechanisms. For instance, the International Organization for Standardization (ISO) could help set up a certification standard for GHG emissions embedded in producing the goods under the BCA mechanism[41]. Exporters

[41] S. Droege, M. Panezi, *How to design border carbon adjustments*, in M. Jakob (ed.) *Handbook on Trade Policy and Climate Change*, Edward Elgar Publishing, 2022, 163 ff.

could use these certificates to reduce the charge applied to their products when the GHG embedded in their export is lower than the benchmark the importing country applies. There are long-standing collaborations between ISO and the WTO, and ISO classifications are often employed by the WTO, for instance, to determine whether products are like[42]. These collaborations can be a solid starting point for future collaborations.

The Organization for Economic Cooperation and Development (OECD), International Monetary Fund (IMF), and the World Bank could be engaged to produce approaches to estimate effective carbon prices in the importing and exporting countries, and more broadly to establish the equivalence between national GHG policies. Some of these organizations have developed method and collected data that could help to set default values for crediting effective carbon prices[43]. These methods can serve as a foundation to produce estimates of effective carbon prices on which adjustments can be established[44].

Other organizations could help increase the transparency and acceptability of BCA mechanisms among trading partners. Organizations such as the United Nations Conference on Trade and Development (UNCTAD) – which already performs impact assessments for the decarbonization of international trade concerning the shipping sector[45] – are well-positioned to provide a third-party assessment of the economic impacts of BCA mechanisms.

The participation of national trade ministries and environmental ministries to discussions on the implementation of BCA mechanisms is essential to facilitate governments' buy-in. To this end, one could also envision the creation of a joint expert working group between trade ministries and environmental ministries that operates under the auspices of the WTO and the UNFCCC.

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[42] *Ibid*.

[43] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[44] *Ibid*.

[45] See, for instance, UNCTAD, *UNCTAD Assessment of the Impact of the IMO Short-Term GHG Reduction Measure on States*, 2021.

4.1. *A way towards a climate club?*

As discussed above, the implementation of BCA mechanisms may have the adverse effect of increasing tensions between trade partners. However, implementing a BCA mechanism is sometimes seen as a vehicle to increase international cooperation on climate change because, as mentioned above, it can incentivize the uptake of more stringent climate policies in trade partner countries. Studies that account for strategic choices of individual countries confirm that – under some conditions – BCA mechanisms can help increase cooperation on carbon pricing[46].

Creating a climate club is now high on the G7 agenda, with the 2022 German presidency pushing for the establishment of such a club[47]. In light of this, it becomes even more important to implement a BCA mechanism that reduces trade tensions between G7 countries.

In this respect, it is important to implement BCA mechanisms that allow G7 countries that do not have an explicit carbon price in place at the national level – such as the United States – to participate in the climate club combined with a BCA mechanism[48]. Recognizing the adjustment for effective carbon prices in the BCA mechanism –instead of explicit carbon prices alone – can better enable the United States' participation in the climate club[49]. Such *an effective carbon pricing club* could also bring additional benefits in terms of increased domestic capacity to address climate change and include finance ministries more closely in the adoption of climate change policies[50].

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[46] See, for instance, Z.B. Irfanoglu *et al.*, *Potential of border tax adjustments to deter free riding in international climate agreements*, in *Environmental Research Letters*, 2015, 10(2), 024009.

[47] G7, *G7 Statement on Climate Club*, 2022.

[48] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[49] *Ibid.*

[50] G. Dominioni, *Pricing carbon effectively: a pathway for higher climate change ambition*, in *Climate Policy*, 2022, 22(7), pp. 897 ff.

5. *Rethinking WTO vision, rules, and procedures to align the trade and climate regimes*

We have argued that well-designed BCA mechanisms are unlikely to violate WTO rules. Nevertheless, the existence of some grey areas may represent a barrier to their implementation, especially by risk-averse governments. To overcome such challenges, in this section we suggest how to rethink the WTO's vision, rules, and procedures to facilitate the adoption of BCA mechanisms, and, ultimately, ensure a better alignment of the trade and climate regimes.

5.1. *Rethinking the WTO vision*

Supporting the establishment of BCA mechanisms to internalize climate externalities represents a key opportunity for the WTO to reassert its central role in governing international trade relationships. In the current political landscape, dominated by mounting skepticism towards multilateral institutions, the overall legitimacy of the WTO has been undermined on several fronts[51]. These include the United States' blocking of Appellate Body appointments and, more recently, speculations around the possible withdrawal of Russia following the conflict in Ukraine. In this context, the need to undertake urgent climate action can serve as a catalyst for cooperation among WTO Members.

We think that setting the internalization of climate externalities at the center of the vision for the 21st century should be a priority for the WTO. Focusing on climate externalities is an opportunity for the WTO to show leadership in international trade relations, as efforts to link climate and trade considerations are already taking place in a wide range of bilateral trade agreements. In this sense, the latest free trade agreements (FTAs) concluded by the European Union, such as the EU-UK FTA which includes several provisions on trade and climate change, represent a prominent example.

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[51] P. Low, *The WTO in Crisis: Closing the Gap between Conversation and Action or Shutting Down the Conversation?*, in *World Trade Review*, 2022, 21(3), pp. 274 ff.

The WTO has begun to intensify its work on the link between trade and environmental sustainability, including trade and climate change. Negotiations on relevant issues are taking place both within well-established fora, such as the Committee on Trade and Environment (CTE)[52], and in newly established ones, such as the Trade and Environmental Sustainability Structured Discussions (TESSD). In both cases, the issue of border carbon adjustment is at the forefront of the debate. Within the TESSD, in particular, parties have voiced their concerns regarding the need to ensure compatibility of carbon border adjustment mechanisms with the WTO legal framework[53]. These fora, alongside initiatives such as the *Remaking the Global Trading System for a Sustainable Future Project* and the related Villars Framework[54], may provide a suitable environment to start re-thinking the WTO vision and better align it with the international climate change regime.

In the following, we suggest a way to rethink WTO rules and procedures to facilitate the adoption of BCA mechanisms.

5.2. *Rethinking WTO rules and procedures*

In our analysis of potential legal issues that may arise from the implementation of BCA mechanisms, we have highlighted that no major amendments are required to ensure the WTO compatibility of BCA mechanisms, provided that these are adequately designed.

However, a practical issue remains: the imposition of carbon-based levies at the border might nevertheless raise legal claims before the WTO, especially considering the lack of WTO jurisprudence on the matter. Hence, it is recommended that WTO Members take proactive steps to minimize such risk. Given the urgency to reduce GHG emissions, it is important to minimize areas of uncertainty that could slow down ambitious climate action.

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[52] WTO, Committee on Trade and Environment, *Report of the meeting held on 2 February 2022*, WT/CTE/M/74, 2022.

[53] WTO, Trade and Environmental Sustainability Structured Discussions, *Communication by Japan, 23 March 2021*, INF/TE/SSD/W/10, 2021.

[54] J. Tracthman *et al.*, *Villars Framework for A Sustainable Global Trade System*, Villars Institute, 2023.

To this end, a first possibility is given by the adoption of an *authoritative interpretation*, which generally serves to clarify the legal boundaries to implement a WTO law-compatible BCA mechanism. The possibility to approve an authoritative interpretation is provided under Article IX:2 of the WTO Agreement, and this instrument could be well-suited to specify the boundaries of application of Article XX GATT exceptions to BCA mechanisms. However, the adoption of an authoritative interpretation appears practically challenging at the current juncture. According to the provision of Article IX:2 of the WTO Agreement, it requires at least a three-quarter majority of WTO Members, although there is a general preference for consensus[55].

Alternatively, a further option that has gained some popularity among legal scholars is for WTO Members to agree on the adoption of a waiver[56], as regulated under Article IX:3 of the WTO Agreement, whereby in exceptional circumstances an obligation imposed under WTO law is waived. Such a waiver could clarify the circumstances under which a BCA mechanism is exempted from the most-favored-nation and national treatment obligations. This would improve legal certainty and facilitate the adoption of more ambitious climate policies. Moreover, when compared to authoritative interpretations, a waiver appears politically more viable. Although its adoption also requires at least a three-quarter majority, its reach is not as broad as authoritative interpretations, as its validity can be circumscribed to specific Members and for a limited time. In fact, it is an instrument more frequently adopted in WTO practice, as waivers are adopted on a yearly basis[57]. However, the prospects of adoption of a waiver are likely to remain slim unless consensus is reached on key issues such as the design of BCA mechanisms, including standardized methods to establish the equivalence of GHG policies and GHG embedded in goods, and the operationalization of differentiation between developed and developing countries. Co-

[55] I. Van Damme, *Treaty Interpretation by the WTO Appellate Body*, in *European Journal of International Law*, 2010, 21(3), pp. 605 ff.

[56] J. Bacchus, *The case for a WTO Climate* Waiver, Special Report, Centre for International Governance Innovation, 2017.

[57] See, for instance, the list of waivers adopted in 2019, WT/GC/W/795.

operation efforts among trade ministries and within the CTE and TESSD are therefore essential to make a climate waiver possible.

From a longer-term perspective, the WTO could further strengthen its alignment with the climate change regime by amending its internal procedures. In particular, WTO member states could implement *ex ante* review mechanism under which sub-global instruments aimed to tackle climate change are scrutinized before being implemented[58]. If the instruments are deemed in alignment with international commitments to mitigate climate change enjoying broad support at the international level, such as those included in the Paris Agreement, the instrument would be barred from further scrutiny under WTO law. The assessment could be carried out by a new specialized body, perhaps established in cooperation with other international institutions (e.g. the UNFCCC Secretariat), that carries out the assessment following a lighter procedure than that required for climate waivers, to fasten the review process[59]. The governance arrangements and procedural rules for such an ex-ante review will need to be thought through carefully to ensure that the interest of relevant stakeholders are represented and the assessment adequately balances climate and trade considerations[60].

6. *Conclusions*

In this chapter, we have argued that implementing a well-designed BCA mechanism on imported products is a viable way to start reconciling the climate and trade regimes, as it can help to ensure that the price of internationally traded products reflects the social cost of carbon. In particular, we have discussed how such a BCA mechanism could look like to adequately address carbon leakage, taking into account legal, political, and administrative constraints. The analysis has also revealed that WTO law is unlikely to pose ma-

[58] G. Dominioni, D.C. Esty, *Designing Effective Border-Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes*, in *Arizona Law Review*, 2023, 65, pp. 1 ff.

[59] *Ibid.*

[60] *Ibid.*

jor obstacles to the adoption of a well-designed BCA mechanism. Yet, grey areas remain which may prevent risk-averse governments to implement these instruments. In light of this, we have argued that there is a role for the WTO to clarify the conditions under which BCA mechanisms can be compatible with WTO law and we have examined possible ways forward. We think that acting on this could reaffirm the leadership of the WTO in international trade for the 21st century.