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LEGAL IMPLICATIONS OF THE USE OF EXPORT TAXES IN ADDRESSING CARBON LEAKAGE: COMPETING BORDER ADJUSTMENT MEASURES

Baris Karapinar and Kateryna Holzer*

The prevailing uncertainties about the future of the post-Kyoto international legal framework for climate mitigation and adaptation increase the likelihood of unilateral trade interventions that aim to address climate policy concerns, as exemplified by the controversial European Union initiative to include the aviation industry in its emissions trading system. The emerging literature suggests that border carbon adjustment (BCA) measures imposed by importing countries would lead to substantial legal complications in relation to World Trade Organization law and hence to possible trade disputes. Lack of legal clarity on BCAs is exacerbated by potential counter or pre-emptive export restrictions that exporting countries might impose on carbon-intensive products. In this context, this paper investigates the interface between legal and welfare implications of competing unilateral BCA measures. It argues that carbon export taxes will be an inevitable part of the future climate change regime in the absence of a multilateral agreement. It also describes the channels through which competing BCAs may lead to trade conflicts and political complications as a result of their distributional and welfare impacts at the domestic and global levels.

I INTRODUCTION

As the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC)[1] in Durban (COP17) has shown, the future of the post-Kyoto international legal

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1 United Nations Framework Convention for Climate Change 177 UNTS 107 (opened for signature 9 May 1992, entered into force 21 March 1994).

framework for climate protection looks increasingly uncertain.[2] The parties largely agree that there needs to be a comprehensive international regime in order to achieve the objective of a maximum increase in global temperatures of two degrees Celsius, set out in Copenhagen.[3] However, fundamental disagreements on the structure of the post-Kyoto regime, defining the rights and obligations of the parties, continue to hinder progress in multilateral negotiations. The absence of an agreement in this context increases the likelihood that countries might resort to unilateral or bilateral policy measures to address their climate policy considerations. The European Union's (EU) recent unilateral initiative to include the aviation industry in the EU's emissions trading system (ETS) is a case in point.[4] This is a controversial measure introducing a cap on carbon dioxide (CO_2) emissions from flights both to and from EU airports, which is opposed by the EU's major trading partners, such as the United States, China, India and the Russian Federation.[5] United States airlines filed a complaint in the European Court of Justice (ECJ), which has recently been rejected, while the United States House of Representatives has already taken a step to prohibit United States carriers from participating in the EU ETS.[6]

Similar trade-related disputes are likely to emerge, as countries that impose domestic emissions costs might feel the need to adjust their trade policies to avoid consequent loss of competitiveness and potential carbon leakage, defined as any increase in greenhouse gas (GHG) emissions in jurisdictions with lax or no emissions reductions caused by emissions reductions in jurisdictions with emissions constraints. Depending on the design of the emissions reduction system, they could use a range of unilateral border carbon adjustment (BCA) measures that would equalise emissions costs through taxing imports. These BCA measures may take various forms, from the inclusion of imports in a national ETS – which might require importers to buy emission allowances in the quantity corresponding to the carbon footprint of imported products – to an emissions-intensity

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2 Conference of the Parties to the United Nations Framework Convention on Climate Change *Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011*, FCCC/CP/2011/9/Add1 (2012).

3 Conference of the Parties to the United Nations Framework Convention on Climate Change *Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009*, FCCC/CP/2009/11/Add.1 (2010).

4 Directive 2008/101/EC amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community [2008] OJ L8/3.

5 *Joint Declaration of the Moscow Meeting on Inclusion of International Civil Aviation in the EU–ETS* (2012) (*Joint Declaration of the Moscow Meeting*).

6 Case C-366/10 *Air Transport Association of America v Secretary of State for Energy and Climate Change* [2011] ECR I-0000; European Union Emissions Trading Scheme Prohibition Act Pub L No 112-200, 126 Stat 1477 (2012). See Lorand Bartels *The Inclusion of Aviation in the EU ETS: WTO Law Considerations* (International Centre for Trade and Sustainable Development, Trade and Energy Sustainable Series Issue Paper No 6, Geneva, 2012) at 2.

standard for imported products. Yet, such forms of import-BCA measures are likely to face serious legal constraints.

The emerging literature on the trade law implications of unilateral BCA measures is substantial.[7] Generally, it suggests that BCAs linked to the carbon footprint of imported products are unlikely to pass the test for non-discrimination under articles I and III of the General Agreement on Tariffs and Trade (GATT).[8] For countries intending to use import-BCAs, the classical interpretation of World Trade Organization (WTO) rules is a major legal constraint. It leaves little policy space for differentiation among products, for taxation and regulation purposes, on the basis of how the products are produced. This interpretation has largely been reinforced by the rulings of WTO adjudicative bodies (panels and the Appellate Body). Nevertheless, WTO case law and literature also suggest that there might be possible justifications for BCA measures under the environmental and/or health-related exceptions under article XX of GATT.[9] Therefore, the uncertainty about the outcome of a possible WTO dispute over BCAs remains.

The potential legal complications are likely to be exacerbated by competing carbon-related border measures imposed on *exports* by *exporting* countries. In order to counter or pre-empt BCAs that might be instituted by importing countries with domestic carbon regulations, exporting countries could apply exports optimisation taxes on carbon-intensive products. As a countermeasure, this would alter the impacts of import-BCAs in relation to competitiveness, carbon leakage and tax revenues generated. At the same time, additional legal complexities would arise for the world trading system because WTO law regulating export restrictions is not well developed. The case law in the field is informative, yet inconclusive.[10] Hence, there is a need for further legal

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7 See for example Joost Pauwelyn "US Federal Climate Policy and Competitiveness Concerns: the Limits and Options of International Trade Law" (April 2007) Nicholas Institute for Environmental Policy Solutions <www.nicholas.duke.edu>; Reinhard Quick "'Border Tax Adjustment' in the Context of Emission Trading: Climate Protection or Naked Protectionism?" (2008) 3 GTCJ 163; Aaron Cosbey "Border Carbon Adjustment: Key Issues" in Aaron Cosbey (ed) *Trade and Climate Change: Issues in Perspective* (International Institute for Sustainable Development, Winnipeg, 2008) 19; Gary Hufbauer, Clyde Charnovitz and Jisun Kim *Global Warming and the World Trading System* (Peterson Institute for International Economics, Washington (DC), 2009); Kateryna Holzer "Proposals on carbon-related border adjustments: Prospects for WTO Compliance" (2010) 1 CCLR 51; Christine Kaufmann and Rolf Weber "Carbon-related border tax adjustment: mitigating climate change or restricting international trade?" (2011) 10 WTR 497; Bartels, above n 6.

8 General Agreement on Tarriffs and Trade 1867 UNTS 187 (opened for signature 15 April 1994, entered into force 1 January 1995) [GATT].

9 For more details of justification for Border Carbon Adjustment (BCA) measures under article XX of GATT, see Pauwelyn, above n 7, at 37–41; Kaufmann and Weber, above n 7, at 511–520.

10 For an extensive analysis of the GATT/World Trade Organisation (WTO) case law on export restrictions, see Baris Karapinar "Defining the Legal Boundaries of Export Restrictions: A Case Law Analysis" (2012) 15 JIEL 1.

research analysing the legal implications of various competing measures for equalising emissions costs.

In this context, this article investigates the interface between legal and welfare implications of unilateral border carbon adjustment measures taken by importing countries and carbon export taxes imposed by exporting countries. It argues that carbon export taxes will be an inevitable part of the future climate change regime in the absence of a multilateral agreement. Hence, it reflects on the potential role of export taxes in helping countries address issues of competitiveness and carbon leakage, and whether they could contribute to emission reductions by involving the export sectors of developing countries in climate mitigation. It also describes the channels through which competing BCAs may lead to trade conflicts and political complications as a result of their distributional and welfare impacts at the domestic and global levels.

This article is organised as follows. Part II sets the background by discussing possible application of BCAs on imports from countries without carbon restrictions by countries with emissions reduction systems. It describes the practical, political and legal constraints that may arise from the application of such measures. Part III examines the role of carbon export taxes, which might be imposed in response to unilateral import restrictive measures. It analyses the WTO law regulating export restrictions in the light of the case law. Part IV highlights the potential legal and welfare consequences of the use of carbon export taxes against import-BCA measures. Part V offers a brief conclusion.

II PROSPECTS FOR THE USE OF BORDER CARBON ADJUSTMENTS

A A Range of Options

The world of different carbon prices puts producers who are bound by emissions costs at a competitive disadvantage compared with producers who do not bear emissions costs, while competing in the domestic and world markets. Apart from reducing the competitiveness of domestic producers, this situation can also cause carbon leakage. This is when emissions reductions in countries with emissions constraints lead to increases in emissions in countries with lax or no emissions regulations, thereby undermining the effectiveness of emissions abatement policy in countries with strong climate policy commitments.

Although empirical research does not provide much evidence of carbon leakage, theoretical economic analysis shows that the risk of carbon leakage exists, especially in the long-run.[11] Producers from countries imposing emissions costs would either lose their shares in the domestic

11 Peter Wooders and Aaron Cosbey "Climate-linked tariffs and subsidies: Economic aspects (competitiveness and leakage)" (June 2010) The Graduate Institute, TAIT Trade and Climate Change Conference Papers <http://graduateinstitute.ch> at 21.

and world marketplace to cheaper emission-intensive products coming from "pollution havens" or would choose to relocate their production to countries with no climate policy in place.[12] In the first case, demand in the domestic market would largely be satisfied by cheaper imports from countries with unconstrained emissions. This could potentially lead to the growth of carbon-intensive manufacturing abroad. In the second case, emissions reductions achieved at home would be downgraded by increases in emissions abroad. Relocation of carbon-intensive production to countries with no emissions constraints is unlikely in the short-run. This is due to the limited mobility of resources and because many other factors, besides emissions costs, influence investment decisions. In the long-run, however, companies can decide and could afford to make their new investments in jurisdictions free of emissions costs.[13]

Competitiveness and carbon leakage concerns would become more prominent in a scenario where no post-Kyoto global climate agreement has been reached after a long period of time. This is quite plausible, given the current slow pace of the UNFCCC negotiations. The absence of an international climate agreement, with legally binding emissions reduction commitments shared by all countries, would increase discrepancies in world carbon prices. This scenario leaves countries, which voluntarily undertook emissions reduction commitments, beyond those under the Kyoto Protocol[14] and irrespective of whether or not there would be a post-Kyoto agreement, having to take unilateral actions to restore their competitive positions and prevent carbon leakage.[15] The most widely discussed options for such unilateral measures include the use of BCAs aimed at equalising emissions costs through taxing imports or compensating national exporters' emissions costs on exportation. BCAs can take different forms – from requirements for importers to submit emissions allowances or carbon import taxes, to carbon-intensity standards and carbon-labelling requirements imposed on imports. As well as BCAs applied to imports, adjustment of emissions costs can also be applied to exports by giving rebates on emissions costs to national exporters. In a broader sense, BCAs might also include carbon import duties, and antidumping and countervailing duties to

12 Indian Institute of Foreign Trade "Frequently Asked Questions: WTO Compatibility of Border Trade Measures for Environmental Protection" (2010) Centre for WTO Studies <http://wtocentre.iift.ac.in> at 13–14.

13 Wooders and Cosbey, above n 11, at 4.

14 Kyoto Protocol to the United Nations Framework Convention for Climate Change 2303 UNTS 148 (opened for signature 16 March 1998, entered into force 16 February 2005).

15 For instance, in 2005 the European Union (EU) introduced an emissions trading scheme (ETS) embracing about 50 per cent of EU carbon emissions, while pledging to reduce carbon emissions by 20 per cent by 2020, no matter whether the United Nations-led Kyoto Protocol terminates. See Directive 2003/87 establishing a scheme for greenhouse gas emission allowance trading within the Community [2003] OJ L275/32. Australia is about to set a price on carbon through a carbon tax, followed in 2015 by an ETS: see <www.datacenterdynamics.com>.

counteract the non-payment of emissions costs by producers from nations that set no caps.[16] All the foregoing examples of BCAs present options for importing countries with an ETS or any other emissions reduction system in place. However, BCA-equivalent measures can also be adopted by exporting countries with the same aim of addressing concerns about carbon leakage and competitiveness in a world of different carbon prices. We argue in this article that export taxes imposed on carbon-intensive products, by exporting countries, are likely to counteract BCAs imposed by importing countries and even compete with them. This will lead to significant implications in relation to carbon leakage, competitiveness and emissions reductions.

The choice of BCA measures is likely to depend upon the design of any emissions reduction system in a country imposing a measure which, in turn, is based on a range of economic and political considerations. For instance, countries which rely heavily on fossil fuels, and hence have a high level of embedded carbon in their products, are likely to prefer an ETS over a carbon tax because of the flexibility in an ETS to use offsets from emissions reductions made in developing countries. If carbon tax rates eventually converged around the world, producers from such countries would be at a cost disadvantage compared to other producers, especially those from the EU.[17]

In the EU, BCAs are likely to be used in the form of a requirement for importers to surrender emissions allowances at the border according to the quantity that would correspond to the carbon footprint of imported products.[18] The inclusion of international aviation in the EU ETS is the first BCA measure put into practice in the EU and the world in general. Over 4000 passenger and cargo airlines, both EU- and foreign-based, landing in or departing from EU airports will be required to surrender emissions allowances each year for the flights during the previous year starting from April 2013.[19] Failure to comply with the requirement would cost an airline EUR 100 for each tonne of CO_2 equivalent emitted for which an allowance is not submitted.[20]

In the United States, BCAs have been discussed in the context of climate Bills introduced in Congress during the past decade. Proposals on BCAs were most prominent in the Waxman-Markey

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16 Philipp Aerni and others "Climate Change and International law: Exploring the Linkages between Human Rights, Environment, Trade and Investment" (2010) 53 Germ Yrbk Intl L 139 at 160–167.

17 See Indian Institute of Foreign Trade, above n 12, at 11.

18 Directive 2009/29 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community, [2009] OJ L140/63 in art 10(b) on "Measures to support certain energy-intensive industries in the event of carbon leakage" instructs the European Commission to submit to the European Parliament and to the Council a report on the carbon leakage risks for EU industries accompanied by proposals, which might inter alia foresee the "inclusion in the Community scheme of importers of products which are produced by the sectors or subsectors determined in accordance with Article 10a".

19 See Directive 2003/87, articles 3(a)–3(g) and Annex I.

20 Directive 2003/87, article 16(3).

American Clean Energy and Security Act.[21] Section 401 of part IV of the Bill allowed for inclusion of imports in a United States cap-and-trade scheme starting from 2020. As previously discussed under the Bingaman-Specter Low Carbon Economy Act and the Lieberman-Warner Climate Security Act, BCAs for imports would include a requirement for United States importers to buy "international reserve allowances".[22] Although the momentum for the adoption of climate legislation in the United States has for now been lost, should a federal cap-and-trade system be established in the future, it will inevitably include a BCA scheme to meet the demands of industries subject to carbon costs under an ETS.

Indeed, the need to address competitiveness concerns in the world of different emissions costs presents a strong case for the application of BCAs. Some believe that with BCAs in place, domestic industries will be less reluctant to participate in a cap-and-trade scheme, which would ensure deeper emissions cuts and, hence, the success of national climate change mitigation policy. A BCA scheme would allow distribution of allowances at auction, rather than by allocating them for free or giving exemptions to firms or whole industries, both of which lower carbon prices and undermine the effectiveness of emissions reduction policy.[23] BCAs are likely to stimulate producers from exporting countries to invest in low-carbon technologies to enable them to produce with lower emissions, and thereby to be subject to lower BCA charges at the border of countries with BCA schemes. BCAs are also likely to make producers from exporting countries lobby their governments to set up an ETS at home as a means to seek an exemption from the BCA schemes of the countries they export to, on the grounds of taking a comparable action against climate change.[24] This article argues that BCAs can also trigger an exporting country to introduce export taxes on products covered by the BCA scheme, of an importing country, in order to pre-empt or counteract BCAs.

As follows from the experience in other policy areas, particularly under the international regime for protection of the ozone layer, border adjustments need not necessarily be used in practice. It would be enough to keep BCAs as a credible threat of sanctions for non-cooperation or non-compliance. The threat of applying export and import bans on trade in ozone-depleting substances

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21 The American Clean Energy and Security Act 2009 (HR 2454) passed a vote in the United States House of Representatives on 26 June 2009, with most Democrats in favour and most Republicans against: see John Broder "House Passes Bill to Address Threat of Climate Change" *New York Times* (online ed, New York, 27 June 2009). In the Kerry-Boxer Clean Energy Jobs and American Power Act (S 1733), an alternative to Waxman-Markey, which later that year was introduced in the Senate, BCAs were not explicitly mentioned but were not excluded as an option either. The same holds true for the Kerry-Lieberman American Power Act, the Senate's last climate Bill unveiled in May 2010.

22 Low Carbon Economy Act of 2007 (S 1766),Title V, s 502; Climate Security Act of 2007 (S 2191), Title VI, s 6006; American Clean Energy and Security Act, pt IV, s 401.

23 Karsten Neuhoff "Border Adjustments: Economics versus Politics – resolved with international cooperation?" (7 July 2009) Climate Strategies <www.climatestrategies.org> at 1.

24 Cosbey, above n 7, at 21.

(ODS) with non-parties to the Montreal Protocol appeared to be sufficient to encourage countries to participate in the Montreal Protocol.[25] This has helped to prevent ODS leakage and free-riding and contributed significantly to the success of the international system for protection of the ozone layer.[26]

The use of BCAs could be justified by the need to internalise the negative environmental externality resulting from carbon-intensive production in countries with no restrictions on emissions. It is also in line with international environmental law, particularly, with the evolving "polluter pays" principle which has increasingly been used as the basis for resolving trans-boundary environmental disputes since the *Trail Smelter Arbitration*.[27]

The above considerations are relevant for BCAs imposed on imports. However, as already mentioned, a country with an ETS can also apply BCAs to its exports. It should be noted that the export-side border adjustment is normal practice for value-added tax (VAT), which is used by practically all countries. BCAs on exportation could translate into rebates on the costs of emissions allowances payable to national exporters participating in a domestic ETS. For instance, the United States Waxman-Markey American Clean Energy and Security Bill, and some earlier EU proposals, provide for rebates for energy-intensive and trade-exposed industries, which would have to bear the costs of compliance with an ETS. The Waxman-Markey Bill stipulated that, starting from 2014, United States entities, from eligible sectors, would receive a certain amount of the emission allowance rebate per unit of production.[28] An earlier draft of amendments to the EU ETS proposed that starting from 31 December 2014, exporters from the EU would receive emissions allowances

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25 Vienna Convention for the Protection of the Ozone Layer 1513 UNTS 293 (opened for signature 22 March 1985, entered into force 22 September 1988) and its Montreal Protocol on Substances that Deplete the Ozone Layer 1522 UNTS 3 (opened for signature 16 September 1987, entered into force 1 January 1989). Export and import bans are authorised by provisions of the Montreal Protocol but the parties have never applied them. The choice of export and import bans as border adjustment tools has been determined by the specifics of the ozone layer protection system under the Montreal Protocol, which relies on command-and-control measures and not on price-based (fiscal) tools.

26 Scott Barrett "Climate Change and International Trade: Lessons on their Linkage from International Environmental Agreements" (June 2010) The Graduate Institute, TAIT Trade and Climate Change Conference Papers <http://graduateinstitute.ch> at 10–12.

27 *Trail Smelter Arbitration* (*United States v Canada*) (1938/1941) 3 RIAA 1905. The 1941 arbitral award referred to a dispute between Canada and the United States on trans-boundary air pollution caused by the lead and zinc smelter complex in British Columbia. According to the ruling, at 1965, "no State has the right to use or permit the use of its territory in such a manner as to cause injury … in or to the territory of another".

28 American Clean Energy and Security Act, s 401.

from the EU registry on their exports. Two per cent of the total quantity of allowances issued under the EU ETS would be set aside for the export rebates.[29]

While BCAs applied to imports would level the playing field for domestic producers in a domestic market, export rebates by countries with emissions constraints would level the playing field for national producers in export or world markets. However, in contrast to BCAs applied to imports, export rebates do not stimulate emissions reductions either in a country running a BCA scheme or in exporting countries. Neither do they induce trading partners to take comparable actions against climate change. Moreover, reimbursement of emissions costs makes no sense from the perspective of climate change mitigation policy. Therefore, it is doubtful that reimbursement of emissions costs on exportation would be an effective tool from a climate policy perspective.

B Constraints in Administering Import-BCA Schemes

Despite all the opportunities that BCAs can offer, their imposition is likely to face serious practical, legal and political constraints. In terms of practical implementation, there is considerable uncertainty as to the capability of customs authorities to trace carbon emissions in final products. How can the amount of emissions at various stages of a product's life cycle be calculated, especially if the product has been produced or assembled in different countries? To produce the same product, different countries use different sources of energy, which might significantly differ in their emissions, and different technologies, which might require different amounts of carbon-intensive energy and other inputs. Therefore, the information on the carbon footprint of imported products can be difficult to verify.[30]

Customs would have to acquire information on the carbon content of an imported product either directly from foreign producers or importers, for which a proper reporting, monitoring and verification system would need to be established. Alternatively, they could use the reference information on the carbon content, which could be inferred based on the best available technology, or the predominant method of production in the corresponding industry of the importing country or on the average level of emissions costs incurred by domestic producers of like products.[31] In any case, the process of assessment of the carbon content becomes very complex, particularly for products with high value added.

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29 Article 29(5) (FAIR) of the 2007 Draft Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the EU greenhouse gas emission allowance trading scheme.

30 Zhong Xiang Zhang "Encouraging Developing Country Involvement in a Post-2012 Climate Change Regime: Carrots, Sticks or Both?" in *Climate and Trade Policies in a Post 2012 World* (United Nations Environment Programme, Geneva, 2009) 79 at 83.

31 Holzer, above n 7, at 60–61.

With respect to legal hurdles, there is great uncertainty about the consistency of BCAs with the international trading rules of the WTO.[32] It is very likely that BCAs imposed on the carbon footprint of imported products would not pass the test for non-discrimination under articles I and III of GATT (that is, the Most Favored Nation (MFN) and national treatment principles). Also, such BCAs could easily fall under the prohibited categories of tariffs in excess of binding ceilings under article II(1)(b) of GATT or quantitative restrictions under article XI of GATT.

The main concern about BCAs, from a WTO legal perspective, is that measures would not be imposed on the products themselves, but on the processes and production methods (PPMs) used in their manufacture. The classical interpretation of WTO rules leaves little policy space for differentiation among products, for taxation and regulation purposes, based on how they are produced or on labour standards and technological impacts on the environment.[33] Nevertheless, it might be possible to justify PPM-based BCA measures taken for climate change mitigation, as necessary to protect the life or health of people, animals or plants or as measures relating to the conservation of exhaustible natural resources under general exceptions to GATT rules under paragraphs b) and g) of article XX of GATT, respectively. Although the chances for justification seem to be high, the uncertainty about the outcome of a possible WTO dispute over the issue of BCAs remains.[34] It is challenging to design a BCA scheme in accordance with the requirements of the chapeau of article XX, so that it would not constitute "a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".

The WTO consistency of BCAs, which would be applied as emissions allowances rebates to national exporters, is disputable too. Besides the PPM issue and the risk that over-compensating domestic exporters constitutes a prohibited export subsidy, the question also arises as to the environmental integrity of such policy measures.[35] The reimbursement of emissions costs makes little sense from a climate policy perspective, and this could ruin the chances for defence of BCAs under article XX of GATT, if claims of violations under substantive provisions of GATT were made.[36]

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32 At 57–64.

33 Robert E Hudec "GATT/WTO Constraints on National Regulation: Requiem for an 'Aim and Effects' Test" (1998) 32 Int'l Law 619 at 624–626.

34 Pauwelyn, above n 7, at 37–41.

35 Holzer, above n 7, at 62–64.

36 Hufbauer, Charnovitz and Kim, above n 7, at 69.

BCAs are also a very sensitive political issue, which threatens to divide the groups of developed and developing countries even more radically in their stance on the future of an international climate regime. Developing countries argue that:[37]

> The use of [BCAs] diminishes the prospects for development of the developing countries. Trade generates wealth and offers the possibility to developing countries of investing this wealth in renewable energy and energy conservation measures. This will not happen if they are made poorer by the unilateral trade restrictive measures of developed countries.

Developing countries also believe that BCAs, applied by developed countries, would punish developing countries for not taking sufficient actions against climate change. This would be contrary to the principle of common but differentiated responsibilities and respective capabilities, fixed in article 3(1) of the UNFCCC as an underlying principle of the international system of climate change mitigation and adaptation.[38]

There is a risk that unilateral BCA measures would incite retaliation from trading partners, which could turn into trade wars with devastating consequences for the international trading system. The current reaction of the United States, China, India, Russia and some other influential countries to the inclusion by the EU of international aviation in the EU ETS is a case in point.[39] The Chinese government, for instance, has already prohibited Chinese airlines from participating in the EU ETS and threatened to suspend a major supply contract with Airbus.[40]

III WTO IMPLICATIONS OF CARBON EXPORT ADJUSTMENT TAXES

Various actions could be taken by developing countries against the unilateral trade-restrictive measures of developed countries. One of the policy tools at the disposal of exporting countries, facing import-BCAs, is export restrictions. For example, an export tax might be imposed to address some of the complications likely to arise from potential clashes between the trade and climate change regimes. Developing countries could use carbon exports optimisation taxes to counter or pre-empt import-BCAs. Such a tax could level the playing field in developed countries for

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37 Indian Institute of Foreign Trade, above n 12, at 43.

38 At 36–37.

39 A joint declaration adopted by 23 countries at the Moscow meeting on 22 February 2012 contains a set of possible retaliations, including the imposition of similar charges on EU air carriers by other countries exposing EU companies to double taxation, revision of bilateral air services (open skies) agreements and bringing disputes to the International Civil Aviation Organization and the WTO: see *Joint Declaration of the Moscow Meeting*, above n 5. It should be noted that United States airlines failed in their challenge to the EU ETS in the European Court of Justice in 2011: see Case C-366/10, above n 6.

40 "Warning over aviation ETS" (12 March 2012) Pan European Networks <www.paneuropeannetworks.com>.

competing products originating from countries with no domestic carbon regulation. It could also serve as a backstop for climate leakage resulting from carbon restrictions in developed countries. Export taxes, for example, on carbon-intensive products originating from major developing countries could help reduce concerns about competitiveness and carbon leakage in countries pursuing emissions reduction policies and offer an opportunity to increase the scale of auctioning of emissions allowances under an ETS.[41]

The fundamental difference between import-BCAs and export carbon taxes is that the revenue generated through the latter stays in the exporting developing country. Hence, as a second-best policy option (to not facing BCAs), exporting countries are likely to prefer taxing their own industries, and retaining the revenue, to allowing their exporters to be exposed to BCAs imposed by the importing countries. While reducing the carbon emissions resulting from production of these products for export, export carbon taxes could also contribute towards reducing global emissions.[42] They would also provide incentives for domestic producers, in the exporting country, to invest in carbon-efficient production and processing methods.

The questions of how effective carbon export taxes would be in addressing carbon leakage and competitiveness concerns and in achieving emissions reductions go beyond the scope of this article. We will, however, discuss below the possible legal and welfare implications of the use of carbon export taxes and their ability to counteract BCAs of importing countries. The following questions arise:

- What would the legal status of carbon export taxes be in WTO law?
- What would the possible welfare impacts of carbon export taxes be at the domestic and global levels?
- What would the legal implications of competing border adjustment measures for the world trading system be?

A WTO Law and Carbon Export Restrictions

The WTO regulation covering export restrictions is limited. With respect to quantitative export restrictions (that is, export quotas, licences and bans), the most relevant legal text is article XI of GATT. Article XI requires Members to eliminate all prohibitions and quantitative restrictions on exports, with the exception of those imposed "temporarily" to "prevent or relieve" "critical

41 Xin Wang, Ji Feng Li and Ya Xiong Zhang "Can export tax be genuine climate policy? An analysis on China's export tax and export VAT refund rebate policies" (2010) Idées pour le débat <www.iddri.org> at 5.

42 Of course, this depends on the percentage of production of the carbon-intensive products subject to the export tax, which would have been re-oriented to the domestic market due to increased demand from domestic higher value-added industries for cheaper intermediate products.

shortages" of foodstuffs or other products "essential to the exporting contracting party" and of those intended to allow time for the application of regulations such as classification, grading and marketing.[43] As for export restrictions aimed at protection of the environment, violating article XI can also be excused if they qualify for an exception under article XX. However, the text of article XI is not specific enough to define the circumstances which could justify the measure (that is, critical shortage). More importantly, article XI does not restrict Members from imposing taxes on exports, which implies that embers are allowed to impose export taxes, unless otherwise provided for in Members' accession protocols.[44]

The application of export taxes, however, is not without conditions. It is, for instance, subject to the MFN principle of article I of GATT, meaning that these taxes have to be imposed on all like products irrespective of their export destination. Furthermore, Wang, Li and Zhang also argue that imposition of export restrictions could be subject to the disciplines on national treatment (that is, non-discrimination between imports and like domestic products) of article III. They argue that as article III of GATT applies to internal taxes and other internal charges, such as VAT rebates on exportation, these are another possible form of export restrictions of fiscal character and are likely to be in breach of article III.[45]

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43 The full text of article XI of GATT reads:

> 1. No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.
>
> 2. The provisions of para 1 of this Article shall not extend to the following:
>
> (a) Export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party;
>
> (b) Import and export prohibitions or restrictions necessary to the application of standards or regulations for the classification, grading or marketing of commodities in international trade;
>
> (c) Import restrictions on any agricultural or fisheries product, imported in any form, necessary to the enforcement of governmental measures which operate …

44 See generally Baris Karapinar "Export Restrictions and the WTO Law: How to Reform the 'Regulatory Deficiency'" (2011) 45 J World Trade 1139; Daniel Crosby "WTO Legal Status and Evolving Practice of Export Taxes" (2008) 12 ICTSD Bridges 4.

45 Wang, Li and Zhang, above n 44, at 11.

1 Prospects for justification under environmental exceptions

Countries also impose export restrictions for environmental reasons such as to slow down the depletion of exhaustible natural resources, including fisheries, forestry and minerals.[46] As mentioned above, there is no restriction on WTO Members, other than for some of the newly acceded Members, imposing export taxes. However, there could be cases where the application of carbon export taxes might be inconsistent with WTO law, which is particularly relevant to new Members. In those cases, the question of whether a defence under article XX of GATT would be available is critical. For instance, a defence under article XX would not be justifiable if carbon export taxes are applied on a non-MFN basis (unless applied under article XXIV of GATT conditions for a free trade agreement or customs union). This would be the case where a country decided to apply taxes on exports of particular products only to countries with an ETS to pre-empt the imposition of BCAs and not to all other countries. In such a case, it would be difficult to justify the origin-based discrimination under the health or environment protection exceptions of article XX. How would trade restrictions be able to protect public health or the environment if they did not apply across the board, irrespective of export destination? That would require a specific situation where a country would to be able to argue that emissions "exported" to countries without an ETS are less harmful to health and the environment than those "exported" to countries with an ETS.

A special case would be if export taxes were imposed based on the carbon footprint of products, that is, similar to the PPM-based BCAs currently planned for imposition by importing countries with an ETS. In this case, the PPM character of an export tax might not pass the likeness test, under article I of GATT, and trigger a violation of the MFN principle similar to a PPM-based BCA. Yet, this violation might be justifiable under article XX on the grounds that export taxes linked to the carbon footprint, and applied on an MFN basis, would stimulate investments in low carbon technologies and hence might contribute to the climate policy objective of emissions reductions.

The decision as to whether invoking article XX exceptions is justified would also require the assessment of whether a carbon export adjustment measure achieves the intended climate policy objectives. In this context, it is important to note that there could be significant discrepancies between the intended policy objectives and the actual outcomes. Effects of export taxes on emissions reductions can differ significantly across countries and between the imposing country and the rest of the world. Although export restrictions would initially reduce the supply of the taxed goods in international markets, they may stimulate the demand for domestic production of carbon-intensive products by domestic downstream industries. Therefore, the net amount of carbon being

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46 Jane Korinek and Jeonghoi Kim "Export Restrictions on Strategic Raw Materials and Their Impact on Trade and Global Supply" (2011) 45 J World Trade 255 at 255; Siddharta Mitra and Tim Josling "Agricultural Export Restrictions: Welfare Implications and Trade Disciplines" (January 2009) International Food and Agricultural Trade Policy Council <www.agritrade.org> at 3–4.

emitted into the global atmosphere would not be reduced. Hence, it would be highly unlikely that such a measure would be justifiable on environmental grounds by reference to article XX.

2 Special cases

While the WTO regulations dealing with export restrictions offer ample flexibility for domestic policy considerations, some new WTO Members were requested to make "WTO-plus" commitments during their accession negotiations.[47] They were obliged to phase out export taxes or to limit them to a designated number of tariff lines with a bound rate. The review of the accession protocols of the 25 new Members shows that WTO-plus commitments, concerning export taxes, are binding for three Members, namely Ukraine, China and Mongolia. In addition, the Russian Federation – which has recently acceded to the WTO – has an accession protocol that binds export duties applied on more than 700 tariff lines, including mineral fuels and metals.[48]

Since these countries are important exporters of carbon and energy-intensive commodities, their policy options in relation to carbon export adjustment taxes are limited. For example, Ukraine committed itself to implement a specific timeline for phasing down the export restrictions that it had imposed on various iron and steel products, scrap metals, crude oil and natural gas.[49] China's commitments on export restrictions were similarly extensive. Both its Working Party Report and Accession Protocol limit the number of commodities and the level of export duties that it is allowed to impose.[50] According to paragraph 11(3) of the Accession Protocol, "China shall eliminate all taxes and charges applied to exports unless specifically provided for in Annex 6 of this Protocol or applied in conformity with the provisions of article VIII of the GATT 1994." There are a total of 84 tariff lines – including some carbon-intensive products – in annex 6, with maximum levels of allowable export duties. Hence China's policy space in this field is strictly limited.

China's specific commitments under its Accession Protocol were at the heart of a recent WTO dispute.[51] China defended some of its export restriction measures by claiming that they were

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47 For a detailed analysis of "WTO-plus" commitments in this field, see Karapinar, above n 44.

48 *Report of the Working Party on the Accession of Russian Federation* WT/ACC/RUS/70, 17 December 2011 at [621]–[677].

49 *Report of the Working Party on the Accession of Ukraine* WT/ACC/UKR/152 , 25 January 2008 at [232].

50 *Working Party Report on the Accession of China* WT/MIN(01)/3, 10 November 2001; and *Accession of the People's Republic of China* WT/L/432, 23 November 2001.

51 *China – Measures Related to the Exportation of Various Raw Materials* WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R, 5 July 2011 (Reports of the Panel) [*China – Raw Materials (Reports of the Panel)*]; *China – Measures Related to the Exportation of Various Raw Materials* WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R, AB2011-5, 30 January 2012 (Report of the Appellate Body) [*China – Raw Materials (Report of the Appellate Body)*]. For a detailed analysis of the case, see Baris Karapinar "China's Export Restriction Policies: Complying with 'WTO plus' or Undermining Multilateralism" *World TR* 10 at 389; and Karapinar, above n 10.

intended to control the export of "highly energy-consuming, highly polluting and resource-intensive" products. In fact, one of the official policy documents it provided to the Panel as evidence was the *Policies and Actions for Addressing Climate Change*.[52] China argued that its export restrictions on these products – including magnesium scrap, manganese scrap and zinc scrap – would reduce the production of these minerals as the restrictions would reduce the external demand. This would then lead to a reduction of the pollution associated with their production. Hence it argued that it had the right to resort to the exception under article XX(b) of GATT.

In this context, the Panel first decided on the applicability of article XX exceptions to China's Accession Protocol. Since China's defence was strongly based on article XX exceptions, the Panel examined the question of whether article XX defence was actually available to a claim under paragraph 11(3) of China's Accession Protocol. The Panel noted that paragraph 11(3) does not refer directly to any provisions of GATT. In the absence of such an explicit reference, it concluded that China did not have the right to invoke article XX to justify the violation of its accession commitments relating to export restrictions. China appealed this decision. However, the Appellate Body followed the same textual approach as the Panel and noted that paragraph 11(3) of China's Accession Protocol had no textual reference to article XX.[53] Hence, the Appellate Body upheld the Panel's decision, which makes it clear that China cannot impose export taxes on energy intensive products which are not covered under annex 6 of its Accession Protocol.

This decision would bind not only China but is likely to apply to other new Members if they resort to article XX in order to justify carbon export adjustment taxes that they may want to impose in future. In particular, the Ukraine and the Russian Federation are likely to be affected. Nevertheless, the review of the accession protocols and the emerging case law illustrate that other WTO Members are allowed to impose export restrictions (including quantitative ones if they qualify for an exception under article XX) and export taxes, in particular, on carbon-intensive products. Hence these measures could be considered as a policy tool for use by exporting countries to counteract BCAs imposed by importing countries.

IV POTENTIAL IMPLICATIONS OF THE USE OF CARBON EXPORT TAXES AGAINST IMPORT-BCAS

The use of carbon adjustment export taxes as a competing measure against import-BCAs might lead to various legal, economic and political complications. If countries imposing these measures cannot agree on the terms of mutual recognition, competing BCAs might lead to trade conflicts.

The application of a carbon adjustment export tax would affect the distribution of welfare. Export taxes imposed on carbon intensive products would lower the domestic prices of these

52 *China – Raw Materials (Reports of the Panel)*, above n 51, at [7.510].

53 *China – Raw Materials (Report of the Appellate Body)*, above n 51, at [303]–[306].

products and, consequently, the producers of these restricted commodities would lose out. However, the downstream sectors that use these commodities would benefit from the taxes and lower domestic prices would in turn give them price advantage in international markets. In countries other than the country that imposes the export tax, producers would gain at the expense of consumers' welfare. The export tax would dampen the incentive for domestic suppliers to produce and the suppliers in other countries might increase production depending on their factor mobility. Nevertheless, since export taxes distort markets, they would lead to significant welfare losses.[54]

As for potential legal implications, the requirement for MFN treatment might lead to political complications at the sectoral and products levels. In the absence of a multilateral agreement, there might also be legal implications if countries decide to address BCAs in bilateral and regional trade agreements. Similarly, if countries such as China and the Ukraine engage in BCAs, this might result in additional complications given the WTO-plus commitments that they undertook with respect to export duties upon their accession to the WTO.

As discussed above, one of the possible motivations for exporting countries to apply export taxes to carbon-intensive products is to prevent the imposition of import-BCAs on their exports by countries that have an ETS or carbon tax in place. Exporting countries, which have neither committed themselves to emissions reduction targets under the Kyoto Protocol, nor introduced an ETS or any other emissions reduction system on a voluntary basis, could apply export taxes on products covered by an ETS in importing countries. This would enable them to exempt their exports from BCAs applied by the importing countries. An importing country with an ETS in place could consider the export taxes of an exporting country as a comparable climate action for the purposes of a BCA scheme.

Indeed, some legislative proposals on import-BCAs set conditions for exclusion of imports from BCAs, on the grounds that countries from which imports originate have taken actions against climate change that are comparable to those taken in the importing country applying BCAs. For instance, the Waxman-Markey Bill provided for exclusion from import BCAs of sectors which would have more than 85 per cent of imports coming from countries that:[55]

> 1) would have been parties to international agreements requiring economy-wide binding national commitments at least as stringent as those of the US;
>
> 2) would have had annual energy or greenhouse gas intensities for the sector comparable to or better than the equivalent US sector; and

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54 Mitra and Josling, above n 46, at 8–12.

55 American Clean Energy and Security Act 2009, s 401. The inclusion of aviation in the EU ETS also provides for the exclusion of flights landing in the EU if they come from countries that adopt measures for reducing emissions from flights departing from those countries: see Directive 2003/87/EC, article 25(a).

3) would have been parties to an international or bilateral emissions reduction agreement for that sector.

By applying an export tax on products covered by a BCA scheme in the United States, countries exporting to the United States might meet the comparability criteria for climate change actions set by the United States BCA scheme and get their exports excluded from BCAs at the United States border. Yet, it is not clear how the United States would measure the comparability of a measure applied by its trading partners. As such, any mutual recognition is likely to face legal and political constraints.

Measuring the comparability of climate actions involves methodological problems, the solution to which depends on political considerations. When can different policy measures taken in different countries qualify as comparable? The answer obviously depends on the criteria that would be used to compare policy measures. Climate actions of different countries could be compared according to the amount of emissions reductions they achieve. In this case, the reduction in emissions achieved by an ETS of an importing country over a certain period would be compared to the reductions achieved over the same period by the carbon export taxes of an exporting country. Such a comparison requires sector-based economic calculations. Climate actions could also be compared on the basis of the costs they impose on domestic industries or on the society as a whole. A comparability criterion based on the costs of a measure would reflect the objective of a BCA scheme to level the playing field distorted by carbon regulations.

Countries are likely to disagree about what criteria should be used for comparison, as well as about who should judge the comparability – should it be an agency designated by an importing country, by an exporting country or by an international organisation? Therefore, there seems to be a need to resolve these issues either in bilateral agreements on mutual recognition of climate actions (also possibly as part of preferential trade agreements) or in a multilateral agreement providing for harmonisation of climate laws and standards.

Furthermore, if an importing country's BCA scheme does not foresee exclusion of imports, an exporting country might still use the argument of comparable climate action in a WTO dispute dealing with the justification of a BCA measure, under article XX of GATT. An exporting country applying an export tax on products, covered by the BCA scheme of an importing country, could claim that the importing country has applied a measure "in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail", that is, contrary to the requirements set forth in the chapeau of article XX. It could be argued that the application of an export tax to carbon-intensive products puts the exporting country in the same position as an importing country running an ETS or a carbon tax scheme, in the

corresponding domestic sectors.[56] Therefore, the imposition of BCAs on products from a country "where the same condition prevails" would constitute arbitrary discrimination.

However, a counterargument by an importing country that does not accept an export tax as a comparable climate action, could be that the tax in question does not purely serve a climate policy objective. Indeed, besides the emissions reduction objective, countries imposing export taxes or other export restrictions on carbon- or energy-intensive goods still achieve other economic goals by supporting downstream, high value-added sectors. And, even if there is genuine climate policy behind such measures, economic gains might still be achieved. Countries applying export restrictions would hope that nations with an ETS in place would relieve their home-taxed and carbon-intensive exports from BCAs. In this sense, the use of export taxes or other export restrictions for meeting comparability criteria in border adjustment schemes, and thereby preventing imposition of BCAs by the importing country, is similar to the use of export restrictions (that is, voluntary export restraints) for preventing the imposition of antidumping duties by the importing country.

Hence, the best scenario for guaranteeing the exemption from BCAs would be through mutual recognition, between importing countries and exporting countries, of one another's actions as making an equivalent contribution to climate change mitigation. This might require signing a bilateral agreement on mutual recognition between an importing and exporting country. Another option is a plurilateral agreement on mutual recognition of climate laws embracing, for instance, some countries with an ETS and BCAs and some countries applying carbon export taxes, preferably large greenhouse gas emitters.

V CONCLUSIONS

Despite some progress having been made in climate negotiations during the COP17 meeting that took place in Durban, uncertainties about the future of the post-Kyoto international legal framework for climate protection remain. These uncertainties increase the likelihood that countries might resort to unilateral or bilateral policy measures to address their climate policy considerations. However, such measures might lead to loss of competitiveness and to potential carbon leakage, which may encourage countries to apply unilateral BCAs on imports that would equalise emissions costs through taxing imports. The emerging literature suggests that BCAs imposed on the carbon footprint of imported products are unlikely to pass the test for non-discrimination under WTO law, yet it would still be difficult to predict the outcome of a possible WTO dispute over import-BCAs.

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56 In *United States – Standards for Reformulated and Conventional Gasoline* WT/DS2/AB/R, 29 April 1996 (Report of the Appellate Body) at 23–24, the Appellate Body, when considering discrimination under the chapeau of article XX, compared prevailing conditions not only among different exporting countries, but also the conditions prevailing in exporting countries and in an importing country imposing a measure.

Exporting countries could also take unilateral measures against the import-BCAs imposed by importing countries. In this article, we have analysed the potential role of carbon exports optimisation taxes, as a competing measure against import-BCAs, in addressing concerns about competitiveness and carbon leakage. Our analysis of the WTO legal framework for export restrictions reveals that application of carbon exports optimisation taxes would lead to additional legal complexities. While WTO Members may face limitations in imposing carbon-related quantitative restrictions, arguably surmountable through exceptions provided for health and environmental reasons in article XX of GATT, they would generally be allowed to apply carbon export taxes. However, carbon export taxes could only be applied on an MFN basis. This suggests that exporting countries would not be able to impose carbon export taxes only on exports to countries with an ETS (or any other emissions reduction system) and a BCA scheme related to it. The non-MFN application of carbon export restrictions would not be justifiable under article XX exceptions.

In addition, because of the extra commitments taken upon accession to the WTO, some new Members, including China, the Ukraine, and the Russian Federation are not allowed to impose export taxes, or they are allowed to impose them only on the limited number of products and within the bound rates indicated in their accession protocols. As the Panel and the Appellate Body in the *China-Raw Materials* dispute clarified, China and potentially other new Members with similar commitments cannot even resort to article XX exceptions to justify the duties they impose on their exports. Therefore, the use of an export tax as a climate policy tool is not possible for these countries.

We also conclude that countries would be able to apply export taxes linked to the carbon footprint of exported products. Such PPM-based export taxes might stimulate more emissions reductions in the export sectors of countries without domestic carbon restrictions. Yet, the application of such taxes would affect the distribution of welfare, which might have political implications at the domestic and international levels. It should be noted that these measures would inevitably result in net welfare losses, and hence countries need to weigh the effectiveness and the potential benefits of export restrictions carefully against the welfare losses they cause.

Further research is needed to inform the policy debates in this field. The issue of measuring the comparability of climate actions taken by different countries is crucial. We argue that an international agency entitled to judge comparability on a bilateral, plurilateral or a multilateral basis, as well as on harmonisation and mutual recognition of climate regulations in general, is needed. Such an institution would rely on independent research which should be based on a set of objective measurement criteria. For example, the decision on whether export taxes imposed on steel and some other carbon-intensive products could qualify as a comparable climate action, in order for export of these commodities to be exempted from BCAs in the United States, the EU and some other countries considering the use of BCAs, should be based on robust scientific research. Similarly,

further research is needed on the potential economy-wide impacts of competing BCAs at the sectoral level.