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Legal Implications of the Use of Export Taxes in Addressing Carbon Leakage: Competing Border Adjustment Measures

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The paper explores 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 abscence of a multilateral agreement. Hence, it discusses the role of export taxes in helping countries address competitiveness and carbon leakage concerns, and WTO law and economic issues arising from the use of climate policy-related export restrictions.

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1. Introduction

As the 17th Conference of the Parties (COP17) to the United Nations Framework Convention on Climate Change (UNFCCC) in Durban has shown, the future of the post-Kyoto international legal framework for climate protection looks increasingly uncertain. While the parties largely agree that there needs to be a comprehensive international regime in order to achieve the objective, set out in Cancun, of a maximum increase in global temperatures of 2 degrees Celsius, 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 (EU ETS) is a case in point. 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 (US), China, India and the Russian Federation. US airlines have filed a complaint in the European Court of Justice (ECJ), and the US House of Representatives has already taken a step to prohibit US carriers from participating in the EU ETS.[2]

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

[2] Bartels (2011), p. 2.

avoid consequent loss of competitiveness and potential carbon leakage. 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. It may take various forms from the inclusion of imports into a national ETS – which might require importers to buy emission allowances at the quantity corresponding to the carbon footprint of imported products – to an emissions-intensity 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.[3] 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). For countries intending to use import-BCAs, the classical interpretation of WTO rules, which leaves little policy space for differentiation among products for taxation and regulation purposes on the basis of how the products are produced, is a major legal constraint. 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 under the environmental and/or health-related exceptions of GATT Article XX, yet the uncertainty about the outcome of a possible WTO dispute over BCAs remains.[4]

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 optimization taxes on carbon-intensive products. As a countermeasure, this would alter the impacts of import-BCAs in relation to

[3] See e.g. Pauwelyn (2007), Quick (2008), Cosbey (2008), Hufbauer, Charnovitz and Kim (2009), Holzer (2010), Kaufmann and Weber (2011), Bartels (2011).
[4] For more details of justification for BCAs under GATT Article XX, see Pauwelyn (2007), pp. 37-41, and Kaufmann and Weber (2011), pp. 511-520.

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.[5] Hence, there is a need for further legal research analysing the legal implications of various competing measures for equalising emissions costs.

In this context, this paper 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 explores the 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 paper is organised as follows. Section 2 sets the background by discussing possible application by countries with emissions reduction systems of BCAs on imports from countries without carbon restrictions. It describes the practical, political and legal constraints that may arise from the application of such measures. Section 3 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 light of the case law. Section 4 highlights the potential legal and welfare consequences of the use of carbon export taxes against import-BCA measures. Section 5 offers a brief conclusion.

2. Prospects for the use of border carbon adjustments

[5] For an extensive analysis of the GATT/WTO case law on export restrictions, see Karapinar (2012).

2.1. A range of options

The world of different carbon prices puts producers bound by emissions costs at a competitive disadvantage compared with producers which 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 – 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.[6] Producers from countries imposing emissions costs would either lose their shares in the domestic 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.[7] In the first case, demand in the domestic market would largely be satisfied by cheaper imports from countries with unconstrained emissions leading to the growth of carbon-intensive manufacturing abroad, while, 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 owing 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.[8]

[6] Wooders and Cosbey (2010), p. 21 ff.
[7] IIFT (2010), pp. 13-14.
[8] Wooders and Cosbey (2010), p. 4.

Competitiveness and carbon leakage concerns would become more prominent under a scenario where there is still no post-Kyoto global climate agreement after a long time, which is quite plausible, given the currently 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 reductions commitments beyond those under the Kyoto Protocol and irrespective of reaching a post-Kyoto agreement, having to take unilateral actions to restore their competitive positions and prevent carbon leakage.[9] 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. BCA 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. Besides 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, BCA might also include carbon import duties, and antidumping and countervailing duties to counteract the non-payment of emissions costs by producers from nations that set no caps.[10] 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 taken by exporting countries with the same aim of addressing carbon leakage and competitiveness concerns in a world of different carbon prices. We argue in this paper 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, which will lead to significant implications in relation to carbon leakage, competitiveness and emissions reductions.

[9] For instance, in 2005 the EU introduced an ETS embracing about 50% of EU carbon emissions, while pledging to reduce carbon emissions by 20% by 2020, no matter whether the UN-led Kyoto Protocol terminates. See http://ec.europa.eu/clima/policies/package/index_en.htm. Australia is about to set a price on carbon through a carbon tax, followed in 2015 by an ETS. See http://www.datacenterdynamics.com/focus/archive/2011/07/australia-introduces-carbon-tax

[10] Aerni et al. (2010), pp. 160-167.

The choice of BCA measures is likely to depend upon the design of emissions reduction system in a country imposing a measure, which, in turn, is based on a range of economic and political considerations. An ETS, for instance, with its flexibility to use offsets from emissions reductions made in developing countries is likely to be preferred as an emissions reduction tool to a carbon tax in countries which rely heavily on fossil fuels and hence have a high level of embedded carbon in their products. 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.[11]

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.[12] The inclusion of international aviation into 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.[13] Failure to comply with the requirement would cost an airline 100 euros for each tonne of CO_2 equivalent emitted for which an allowance is not submitted.[14]

In the US, BCAs have been discussed in the context of climate bills introduced in Congress during the past decade. Proposals on BCAs were most prominent

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[11] See IIFT (2010), p. 11.

[12] The EU ETS Directive, 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".

[13] See Articles 3a – 3g and Annex I of the EU ETS Directive.

[14] Article 16 (3) of the EU ETS Directive.

in the Waxman-Markey bill.[15] Section 401 of Part IV of the bill allows for inclusion of imports in a US cap-and-trade scheme starting from 2020. As previously discussed under the Bingaman-Specter and Lieberman-Warner bills,[16] BCAs for imports would include a requirement for US importers to buy 'international reserve allowances'. Although the momentum for the adoption of climate legislation in the US has 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. It is believed 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, which lowers carbon prices and undermines the effectiveness of emissions reduction policy.[17] 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.[18] As argued in this paper, BCAs can also trigger the introduction by

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[15] H.R. 2454: The American Clean Energy and Security Act passed a vote in the U.S. House of Representatives on 26 June 2009, with most Democrats in favour and most Republicans against. See *New York Times*, 27.06.2009, available at http://www.nytimes.com/2009/06/27/us/politics/27climate.html. In the Kerry-Boxer bill, 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 Kerry-Lieberrnan's American Power Act, the Senate's last climate bill unveiled in May 2010.

[16] Both bills were registered in Congress in 2007.

[17] Neuhoff (2009), p. 1.

[18] Cosbey (2008), p. 21.

an exporting country of 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 (ODS) with non-parties to the Montreal Protocol appeared to be sufficient to encourage countries to participate in the Montreal Protocol.[19] 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.[20]

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 transboundary environmental disputes since the Trail Smelter arbitration.[21]

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 US Waxman-Markey bill and some earlier EU proposals provide for rebates for energy-intensive and trade-exposed industries, which

[19] 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.

[20] Barrett (2010), p. 10 ff.

[21] The 1941 Trail Smelter dispute was a dispute between Canada and the US on transboundary air pollution caused by the lead and zinc smelter complex in Canadian British Columbia. According to the ruling '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'. See http://untreaty.un.org/cod/riaa/cases/vol_III/1905-1982.pdf

would have to bear the costs of compliance with an ETS. The Waxman-Markey bill stipulates that, starting from 2014, US entities from eligible sectors would receive a certain amount of the emission allowance rebate per unit of production.[22] Some earlier drafts of amendments to the EU ETS proposed that starting from 31 December 2014, exporters from the EU would receive emissions allowances 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.[23]

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.

2.2. 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

[22] Section 401 of H.R. 2454.
[23] Article 29:5 (FAIR) of the 2007 version of draft Proposal amending EU ETS Directive.

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.[24]

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 would 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.[25] In any case, the process of assessment of the carbon content becomes very complex for products with high value added.

With respect to legal hurdles, there is great uncertainty about the consistency of BCAs with the international trading rules of the WTO.[26] It is very likely that BCAs imposed on the carbon footprint of imported products would not pass the test for non-discrimination under GATT Articles I and III (i.e. the MFN and national treatment principles) and they could easily fall under the prohibited categories of tariffs in excess of binding ceilings under GATT Article II.1(b) or quantitative restrictions under GATT Article XI.

The main concern of BCAs from a WTO legal perspective is their processes and production methods (PPMs) – the fact that measures would be imposed not on products themselves but on the 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, nor on labour standards and technological impacts on the environment.[27] Nevertheless, it might be possible to justify PPM-based BCA measures taken for climate change mitigation, as necessary to protect the

[24] Zhang (2009), p. 83.
[25] Holzer (2010), pp. 60-61.
[26] Holzer (2010), p. 57 ff.
[27] Hudec (1998), pp. 9-11.

life or health of people, animals or plants, or as measures relating to the conservation of exhaustible natural resources under general exceptions to the GATT rules under paragraphs b) and g) of GATT Article XX, 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.[28] 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 coverage of the aviation sector by the EU ETS, apart from the above-mentioned legal issues under the GATT, raises questions related to the obligations of the EU under the GATS and concerns with respect to the EU obligations under other international treaties, particularly the Chicago Convention on International Civil Aviation.[29]

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 of over-compensating domestic exporters constituting a prohibited export subsidy, the question also arises as to the environmental integrity of such policy measures.[30] The reimbursement of emissions costs makes little sense from a climate policy perspective, and this could ruin the chances for defence of BCAs under GATT Article XX, if claims of violations under substantive provisions of the GATT were made.[31]

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 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

[28] Pauwelyn (2007), pp. 37-41.
[29] For a detailed analysis of WTO issues arising from the inclusion of aviation in the EU ETS, see Bartels (2011).
[30] Holzer (2010), pp. 62-64.
[31] Hufbauer, Charnovitz and Kim (2009), p. 69.

unilateral trade restrictive measures of developed countries.'[32] Developing countries also believe that BCAs applied by developed countries would punish them 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 international system of climate change mitigation and adaptation.[33]

There is a risk that BCA measures taken unilaterally 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 US, 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.[34] 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.[35]

3. 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. They 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 competing products originating from countries with

[32] IIFT (2010), p. 43.
[33] IIFT (2010), pp. 36-37.
[34] A joint declaration adopted by twenty-three 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 ICAO and WTO. See http://www.ruaviation.com/docs/1/2012/2/22/50/ It should be noted that US airlines failed to challenge the EU ETS in the European Court of Justice in 2011.
[35] See http://www.paneuropeannetworks.com/detail/transport/warning-over-aviation-ets.html

no domestic carbon regulation. It could also serve as a backstop for climate leakage resulting from carbon restrictions in developed countries. For example, export taxes 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 ETSs.[36]

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

3.1. WTO law and carbon export restrictions

[36] Wang, Li and Zhang (2010), p. 5.

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

The WTO regulation covering export restrictions is limited. With respect to quantitative export restrictions (i.e. export quotas, licences and bans), the most relevant legal text is Article XI of the 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 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.[38] 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 (i.e. critical shortage). More importantly, Article XI does not restrict Members to imposing taxes on exports, which implies that Members are allowed to impose export taxes, unless otherwise provided for in Members' accession protocols.[39]

The application of export taxes, however, is not without conditions. It is for instance subject to the MFN principle of GATT Article I, i.e. once they are imposed, these taxes have to be imposed on all like products irrespective of their export destination. Furthermore, Wang, Li and Zhang (2010) also argue that imposition of export restrictions could be subject to the disciplines on national treatment (i.e. non-discrimination between imports and like domestic

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[38] The full text of Article XI 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 paragraph 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:…'
<http://www.wto.org/english/docs_e/legal_e/gatt47_01_e.htm> (visited 12 November 2011).

[39] Karapinar, Baris (2011a); Crosby (2008)

products) of Article III. They argue that GATT Article III applies to 'internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, and internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions' and requires that these measures 'should not be applied to imported or domestic products so as to afford protection to domestic production'.[40] In this context, export taxes cannot be referred to as 'internal taxes or other internal charges', however, VAT rebates on exportation, another form of export restrictions of fiscal character, are likely to qualify as such.[41]

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3.1.1. Prospects for justification under environmental exceptions

Countries also impose export restrictions for environmental reasons, for instance, to slow down the depletion of exhaustible natural resources, such as fisheries, forestry, and minerals. As mentioned above, there is no restriction on WTO Members, other than some of the newly acceded ones, imposing export taxes. However, there could be cases whereby 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 whetherArticle XX defence would be available is critical. For instance, defence under GATT Article XX would not be justifiable if carbon export taxes are applied on a non-MFN basis (unless applied under GATT Article XXIV 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 ETSs 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

[40] Para. 1 of GATT Article III.
[41] Wang, Li and Zhang (2010), p. 11.

a specific situation where a country would to be able to argue that emissions 'exported' to countries without ETSs are less harmful to health and the environment than those 'exported' to countries with ETSs.[42]

A special case would be if export taxes were to be imposed depending on the carbon footprint of products, i.e. similar to the PPM-based BCAs currently planned for imposition in importing countries with ETSs. In this case, the PPM-character of an export tax might not pass the likeness test under GATT Article I 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 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.

3.1.2. Special cases

[42] See Korinek, Jane and Kim, Jeonghoi (2011); Mitra, Siddharta and Josling, Tim (2009).

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' during their accession negotiations.[43] 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 accessions protocols of the 25 new Members reveals that WTO-plus commitments concerning export taxes are binding for three Members, namely Ukraine, China and Mongolia. In addition, the Russian Federation – which is about to accede to the WTO – will have an accession protocol that reportedly binds export duties applied on more than 700 tariff lines, including mineral fuels and metals.[44]

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.[45] 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. According to Article 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'.[46] 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.

[43] For a detailed analysis of 'WTO-plus' commitments in this field, see Karapinar (2011a).
[44] WTO Secretariat, 'Ministerial Conference approves Russia's WTO membership', WTO:2011 News Items, 16 December 2011, <http://www.wto.org/english/news_e/news11_e/acc_rus_16dec11_e.htm> (visited 20 December 2011).
[45] WTO Working Party on the Accession of Ukraine (2008).
[46] WTO Secretariat, (2001).

China's specific commitments under its accession protocol were at the heart of a recent WTO dispute, namely *China – Measures Related to the Exportation of Various Raw Materials* (*China – Raw Materials*).[47] China defended some of its export restriction measures by claiming that they were 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*'.[48] 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 Article XX exception (b).[49]

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, it 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 the GATT 1994. 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 regarding export restrictions. China appealed this decision. However, the Appellate Body followed the same textual approach and noted that Paragraph 11.3 of China's Accession Protocol had no textual reference to Article XX.[50] Hence it upheld the panel's decision, which makes it clear that China cannot impose

[47] For a detailed analysis of the case, see Karapinar, Baris (2011b; 2012).
[48] WTO Panel Report, *China – Raw Materials* (2010).
[49] Paragraph 11.3 of China's Accession Protocol reads:
'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.'
Annex 6 provides the list of 84 products for which maximum duty rates are specified. It also states that:
'China confirmed that the tariff levels included in this Annex are maximum levels which will not be exceeded. China confirmed furthermore that it would not increase the presently applied rates, except under exceptional circumstances. If such circumstances occurred, China would consult with affected members prior to increasing applied tariffs with a view to finding a mutually acceptable solution.'
[50] WTO Appellate Body Report, *China – Measures Related to the Exportation of Various Raw Materials*, above no 47, paras. 303-306.

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 other new Members when they intend to resort to Article XX in order to justify carbon export adjustment taxes that they may want to impose in future. In particular 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.

4. 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 products, hence, 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. Outside the country imposing 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 they distort markets, export taxes would lead to significant welfare losses.[51]

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 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 ETSs in importing countries to 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 ground 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 provides for exclusion from import coverage of sectors which would have more than 85% of imports coming from countries that: 1) would have been parties to international agreements requiring economy-wide binding national commitments at least as stringent as

[51] See, Mitra, Siddharta and Josling, Tim (2009).

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 3) would have been parties to an international or bilateral emissions reduction agreement for that sector.[52] By applying an export tax on products covered by a BCA scheme in the US, countries exporting to the US might meet the comparability criteria for climate change actions set by the US BCA scheme and get their exports excluded from BCAs at the US border. Yet it is not clear how the US would measure the comparability of a measure applied in its trading partners. As such, the scenario of mutual recognition is likely to face legal and political constraints.

Measuring the comparability of climate actions is a methodological problem, 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 reductions 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 criteria for comparison, as well as about the body authorised to judge on 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

[52] Section 401 of H.R. 2454: The American Clean Energy and Security Act. 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 Art. 25(a) of Directive 2003/87/EC (EUETS Directive).

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 exclusion of imports is not foreseen by a BCA scheme set up by the importing country, an exporting country might still use the argument of comparable climate action in a WTO dispute dealing with justification of a BCA measure under GATT Article XX. 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', i.e. 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.[53] Therefore, the imposition of BCA 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 ETSs in place would relieve their home-taxed, 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

[53] In *US – Gasoline*, the AB, 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. See *US – Gasoline*, AB report, pp. 23-24.

preventing imposition of border taxes by the importing country is similar to the use of export restrictions to achieve the same effect on the domestic market of the importing country and prevent the imposition of antidumping duties on the imported goods (i.e. voluntary export restrains).

Hence, the best scenario for guaranteeing the exemption from BCAs would be through mutual recognition by 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 ETSs and BCAs and some countries applying carbon export taxes, preferably large greenhouse gas emitters.

5. 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 border carbon adjustment measures 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.

Exporting countries could also take unilateral measures against the import-BCAs imposed by importing countries. In this paper, 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 GATT Article XX, they would generally be allowed to apply carbon export taxes. However, carbon export taxes could only be applied on an MFN basis implying that exporting countries would not be able to impose them 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 additional commitments taken upon accession to the WTO, some new Members, including China, Ukraine, and the Russian Federation (when it formally accedes) 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 limited 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. Nevertheless, 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 on 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 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 US, 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.

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